Respondus 4.0

User Guide for IMS QTI Personality

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Getting Started

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Respondus is a powerful tool for creating and managing exams that can be printed to paper or published directly to ANGEL, Blackboard, Desire2Learn, eCollege, WebCT, and other eLearning systems. Exams can be created offline using a familiar Windows environment, or moved from one eLearning system to another. Respondus also supports the IMS QTI (Question and Test Interoperability) standard, which allows questions to be imported or exported to other QTI-compliant programs. This version of the user guide is specifically intended for people who will be using the IMS QTI "personality" in Respondus.

Computer Requirements

Respondus requires Windows 98 or higher, 32 MB of RAM, 6 MB of free hard disk space, and a 800x600 monitor (1024x768 recommended). Respondus is generally used in conjunction with a course management system such as ANGEL, Blackboard, eCollege, WebCT, and can also be used with IMS QTI-compliant assessment systems.

Installation and Setup

The *Respondus* installation program can be downloaded from the Respondus website (www.respondus.com). To begin the installation process, locate the **Respondus4.exe** file once it is downloaded to your hard drive. Double-click the file to start the Respondus installation program and follow the instructions on the screen. Once Respondus is installed, start the program by double-clicking the Respondus icon that appears on the Windows desktop. Or, follow these steps to start the software.

Click [Start] from the Windows desktop Click [Programs] Click [Respondus] Click [Respondus X.x]

The first time you start Respondus (and each time thereafter until the program is registered), you will be presented with a screen that provides the "Product ID#". The Product ID# is used to obtain the Activation Password (see below) which is needed to complete the installation.

Activation Password

Once the Respondus installation program is finished, you will need to obtain a password from www.respondus.com to activate the installation. Be sure to have the "Product ID#" (see previous paragraph) readily available. After you have directed your browser to www.respondus.com, go to the "Registration" section. You have the choice of purchasing a permanent activation password or obtaining a 30-day trial password. In both cases you will be required to enter a valid e-mail address and the Product ID# that displays on the opening screen of Respondus. Once the information is submitted, the activation password is immediately sent to the e-mail address you specified.

Once the password is received by e-mail, it must be entered into the Respondus program. If you haven't done so already, start Respondus and then enter the password when prompted (you may want to "copy and paste" the password from the e-mail message in order to prevent typing mistakes). Click [OK] to continue. The Respondus software is now activated, either permanently or for a 30-day trial period.

Choose a Course Management System (CMS) Personality

Immediately after the Respondus software is activated, you are prompted to select a Course Management System (CMS) "personality." Respondus offers various user environments (called personalities) that parallel the features and terminology used by specific course management systems (e.g., Blackboard, eCollege, WebCT) or the IMS QTI standard. You can change the "personality" at any time in Respondus from the *Start* menu.

On-line Help

Respondus includes a full-featured help system that includes an index and context-sensitive help. To view the on-line help, choose "Help Topics" from the pull-down Help menu and select a topic. You can also press the F1 key from within Respondus to obtain context-sensitive help. Throughout the program you will additionally see small buttons having a "?" symbol. When the button is clicked, information on that particular option or task is provided.

If you encounter a question that is not answered in the on-line help or in this manual, you are encouraged to visit the "Support" section of the Respondus web site (www.respondus.com). There you will find Frequently Asked Questions (FAQ) and other resources.

The remainder of this user manual is organized according to the three menus used in the "IMS QTI" personality of Respondus: **Start**, **Edit**, and **Preview & Publish**.

Start Menu (IMS OTI Personality)

Overview of Start Menu

Opening a File

Creating a File

Test Bank Network

Exam Wizard

Importing Questions to Respondus

Archive Wizard

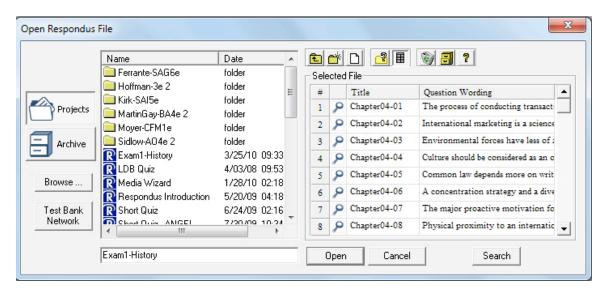
Changing the CMS Personality and Converting Files

Overview of Start Menu

The *Start* menu provides the ability to **Open** a Respondus file, **Create** a new file, access publisher test banks from the Respondus **Test Bank Network**, and **Import** questions from a MS Word or text file. The **Exam Wizard** provides an easy way to create an exam from an existing set of questions. The **Archive Wizard** allows you to archive an exam or survey, including all media components and equations, with a single click.

Opening a File

From the *Start* menu, click the **Open** button. The following window will appear:



Highlight an exam project by clicking it once. To obtain information on the project, select either of the two center buttons located to the top right of the file list. Select the "Item List" button (right of center) to view a list of the questions that are available in the highlighted project. To preview a particular question, click the "title" of the question. To open a highlighted project, click the [Open] button at the bottom of the window. (Double-clicking a file name will also open it.)

Respondus allows projects to be organized within folders. For example, you can place the exams for a particular course within a folder rather than having exams for all courses listed together. To create a new folder, click the "Create New Folder" button located second from left. To navigate down a level within a folder, double-click on the folder itself. To navigate up a level, click the "Up One Level" leftmost button on the row.

The [Browse...] button, located on the lower left side of the window, allows you to find a Respondus file (.rsp) located elsewhere on your hard drive and *copy* the file to the "c:\Respondus Projects" folder. It does *not* move the file or open it directly, rather, it creates a new "Projects" folder based on that file. The [Browse...] button can also be used to locate a Respondus "archive" file (.rsa or .rpa) and to restore it to the Projects directory (see *Restoring an Archive File*).

The [Search] button allows a file to be searched prior to opening it (it can only be used if the "Item List" button is selected). Searching is particularly useful if you are trying to locate a file that contains a particular question or set of questions.

The [Test Bank Network] button is used to start the Respondus Test Bank Network wizard. The Respondus Test Bank Network contains the official test banks for thousands of publisher textbooks. Instructors who adopt a participating textbook can access the accompanying test bank directly within Respondus (following a registration process). For complete details, see the "Respondus Test Bank Network" at www.respondus.com.

Once a file is opened, the screen automatically changes to the *Edit* menu.

Creating a File

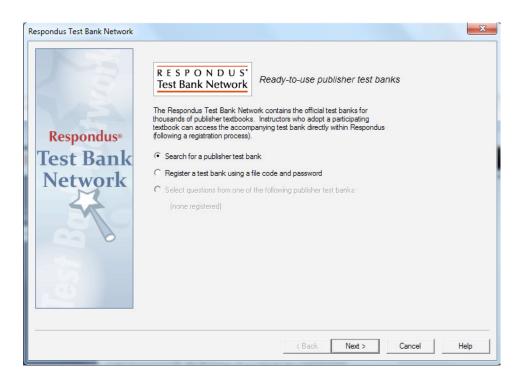
From the *Start* menu, select the **Create** button to create a new file. You are first prompted to enter a file name and a description for the file. Click **[OK]** when you are finished. Once a file is created, you are automatically switched to the *Edit* menu. This is where you add questions to the file.

Test Bank Network

The Respondus Test Bank Network contains the official test banks for thousands of publisher textbooks. Instructors who adopt a participating textbook can access the accompanying test bank from within Respondus by selecting the **Test Bank Network** button on the *Start* menu.

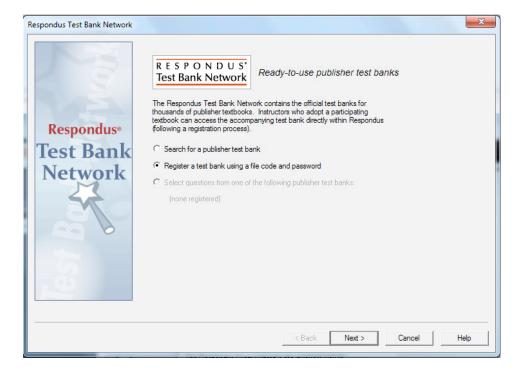
Note: all interactions with the **Test Bank Network** require an internet connection.

The **Test Bank Network** wizard allows instructors to search for a publisher test bank, submit a request form for the test bank, register a test bank using the registration code and password sent by the publisher, and finally, select questions from the test bank for use in a Respondus file.

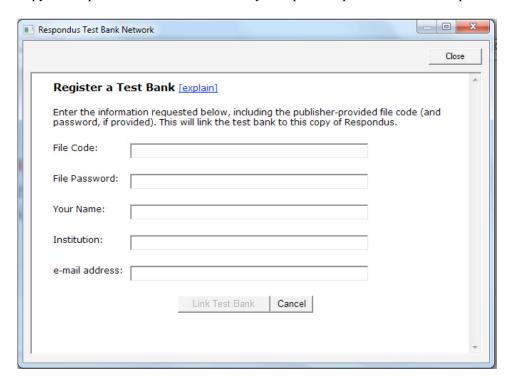


The first selection "Search for a publisher test bank" will open a browser window and enable instructors to search for textbooks adopted for their classes. Once a textbook is located, a request form is filled out and submitted. This information is sent directly to the publisher for verification.

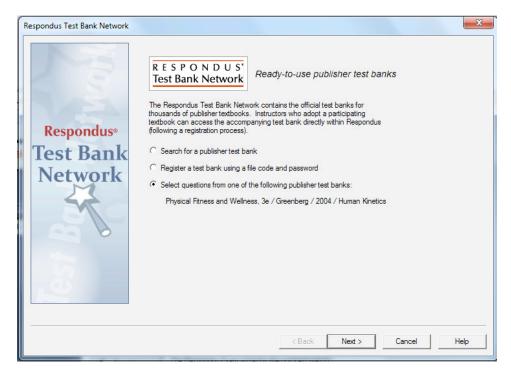
The textbook publisher will send an email to the instructor containing a "file code" and password for registering the test bank using the Respondus software. The instructor should then return to the **Test Bank Network** wizard in Respondus to register the test bank, which is the second option listed: "Register a test bank using a file code and password".



In the next step of the wizard, enter the "File Code" and "File Password" (if required) provided by the publisher, along with the information requested. This will register the test bank with this copy of Respondus. It won't be necessary to repeat the process on this computer.

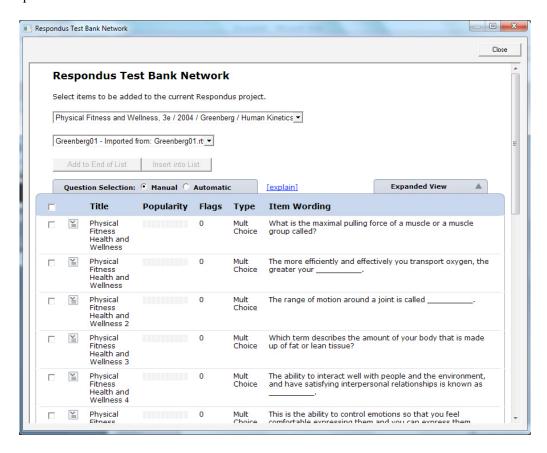


Once the test bank has been registered in Respondus, the third option on the **Test Bank Network** wizard become available: "Select question from one of the following publisher test banks:".



The next page of the wizard allows the selection of a registered test bank and then a specific chapter file from the test bank.

Questions can be manually selected or automatically selected depending on the **Question Selection** toggle. With **Manual** selection, individual test bank questions can be previewed and copied to the current Respondus project. To do so, simply select the box to the left of the questions wanted and click the "Add to End of List" or "Insert into List" button.



Each question listed has a context menu that provides the following operations:

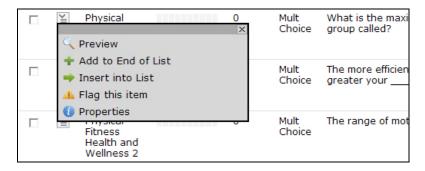
Preview – Preview the question.

Add to End of List – Add this question to the end of the list.

Insert into List – Insert this question into a specific point in the list.

Flag this item – Flag this question as being incorrect or unclear.

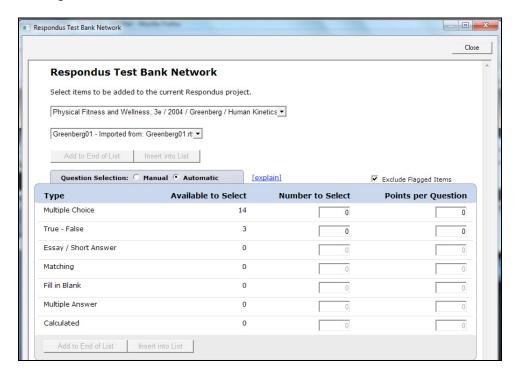
Properties – View the properties for the question.



Questions that have been flagged (by any instructor using the test bank) will appear with a flag next to the item in the list. The contents of the flag can be viewed by hovering the mouse over the flag or clicking it.



When **Automatic** selection is used, the number of available questions of each question type is shown. Enter the number of questions to be selected for each question type and the point value to be assigned to it.



Questions copied from the test bank using either Manual or Automatic selection will be copied to the currently open Respondus file.

Exam Wizard

The *Exam Wizard* helps familiarize new users with the basic functions of Respondus. In addition, the Exam Wizard is the best way to create an exam using questions contained in one or more Respondus files, such as a publisher test bank. The Exam Wizard allows questions to be randomly selected from other files and point values to be assigned across an entire question type.

To begin, select the **Exam Wizard** button from the *Start* menu. The first page of the wizard offers three choices. Select the top choice that states "Create a new exam and then copy questions to it from a question bank or Respondus file" and click [Next]. The next page of the wizard requires you to provide a name and description for the exam being created. Click [Next] once this information has been entered. The next page of the wizard prompts you to select the Respondus files from which the questions will be copied. Highlight a file and click the [Select] button. Repeat this process until all files from which you want to select questions are selected. Click [Next] to continue.

The next page of the wizard prompts you to select one of the source files chosen in the previous step. You then have the choice of using *Automatic Selection* or *Manual Selection*. When Automatic Selection is chosen, the current number of questions for each question type is displayed in the "Available to Select" column. In the next column, enter the number of questions you want selected for each question type. Then enter the point values to be assigned to each question type (this step is optional--if you leave the "points per question" field blank, the point values from the original file will be used). When all entries are finished, click either the [Add to End of List] button or the [Insert Into List] button. Repeat this process for each source file.

The *Manual Selection* option allows the questions for each file to be viewed before making a selection. In fact, you can preview individual questions by clicking the title of a question, or by searching the entire list of questions by clicking the **[Keyword Search]** button at the top right. To select questions from this list, simply click in the column furthest to the left--a checkmark will appear next to the question. When you are finished with your selections, click either the **[Add to End of List]** button or the **[Insert Into List]** button. Repeat this process for each source file.

The *Automatic Selection* and *Manual Selection* options may be combined. You may also reselect a file from the pull-down list and choose additional questions from it. However, Respondus will prevent you from selecting a question more than once.

Once questions have been added to the list at the bottom of the screen, you may edit the point values manually. To delete a question from the bottom list, or to move it to a different location in the list, click the blue title and select the desired option. Finally, notice that a tally of the total number of questions and point values appears at the top right corner of the lower grid.

The next and final page of the wizard is self-explanatory. It provides a variety of options as to what can occur next. For example, to edit questions in the file, you would select the option to go to the Edit menu. To preview the exam, you would select that option, and so on.

Click [Finish] to complete the wizard.

Importing Questions

Respondus allows you to import multiple choice, true-false, essay, fill in the blank, fill in multiple blanks, matching, ordering, jumbled sentence, and multiple answer questions from a file. The questions must be organized in a format that is acceptable to Respondus and the file must be

stored in one of the following formats: plain text (.txt), rich-text (.rtf), MS Word (.doc and .docx), tab/comma delimited (.csv) format, StudyMate Class format (.zip and .xml).

In addition to importing QTI XML files, Respondus will import multiple choice, true-false, essay, fill in blank, matching, and multiple response questions from a plain text (.txt), rich-text (.rtf), MS Word (.doc or .docx), tab/comma delimited (.csv) file or a StudyMate Class format (.zip and .xml). The formatting required for importing plain text, rich-text or MS Word files is discussed in the section *The Standard Format for Importing*. The formatting required for .csv files is described in the section "*Importing Tab/Comma Delimited Files (CSV)*".

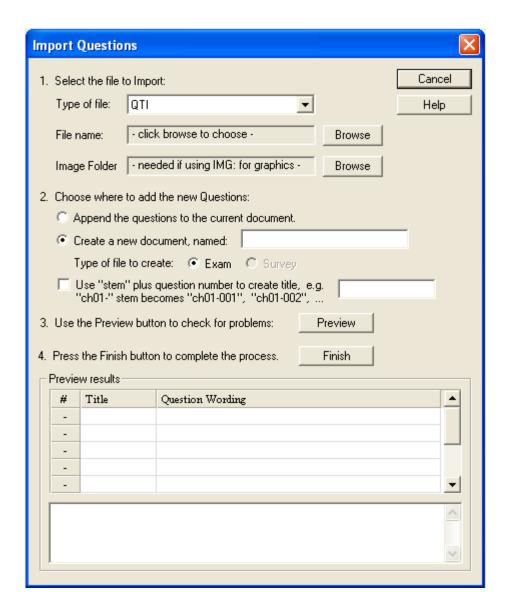
Note: Importing questions from the Microsoft Word .docx format requires that Word 2007 or Word 2010 be installed on the same computer. The docx format has better support for importing text with formatting like auto-numbers and auto-letters.

Once a file is in the proper format, follow the steps below to import it into Respondus.

Note that, when importing questions in QTI format that were previously exported by Respondus as Algorithmic questions, the questions will not be imported as Algorithmic questions, but as Multiple Choice questions that link to a Flash object containing the actual question (this is how this type of question is actually stored in QTI format.). Algorithmic questions imported from QTI can be exported again without modification. However, the Algorithmic properties can no longer be edited in Respondus and the printing of such questions has little value. Thus, it is good practice to retain the original Respondus file so that the Algorithmic question can be edited at a later time or used for printing purposes.

Starting the Import

From the *Start* menu, select the [Import Questions] task. A window will appear:



Step 1

The first step is to select the type of file that will be imported. The default setting is for *IMS QTI 1.x* format. The other choices are plain text (.txt), rich-text (.rtf), Microsoft Word (.doc and .docx) and tab/comma delimited (csv).

The "Standard Format" for organizing questions is the same for Plain Text (.txt), Rich Text (.rtf) files, and Microsoft Word (.doc and .docx) files. Files that are in rich text (.rtf) and MS Word (.doc and .docx) format will retain some of the enhanced question formatting such as bold, italic, underline, superscript, and subscript. Embedded graphics can only be imported if the file is in Microsoft Word (.doc and .docx) or QTI format, although an alternative method is available for .rtf and .txt files (see *Importing Images* below). Note that certain types of enhanced formatting cannot be imported. If the enhanced formatting causes a problem with an import, consider saving the file to rich text or plain text format and then try the import again.

Next, use the [Browse] button to locate and select the file to be imported.

Images embedded in MS Word files will import automatically. However, if images are being imported with other formats, browse to the folder that contains those images.

Step 2

Specify whether the questions should be appended to the currently open file or whether to create an entirely new file. If you select the second option you will need to enter the name of the file to be created.

Each question being imported will have a "title". If you don't specify a title for each question in the text file itself (discussed below), Respondus will automatically use the first 20 characters of the question wording as the question title. Alternatively, titles can be based on a specific "stem" (or string of text) which will then be followed by consecutive numbering starting with 001. For example, if you select the "Use stem..." checkbox and enter the text "Chapter1-", the title for the first question being imported will be Chapter1-001, the title for the second question will be Chapter1-002, and so on. (You are *not* required to enter a stem phrase--this feature is entirely optional.)

Step 3

Click the [Preview] button to preview the file being imported and to see if there are any warning messages. If warning messages are shown at the bottom of the screen, you need to determine whether to make changes to the text file or whether to continue with the import.

Note that some warning messages can be ignored. For instance, Respondus might give the warning "2 duplicate titles were changed by adding '2' (or 3, 4...)". This is simply indicating that two of the question titles for the file being imported are identical. (Remember, question titles are generated from the first 20 characters of the question wording, so two questions that start with the same sequence of words would result in duplicate titles.) Since two question titles in Respondus cannot be entirely identical, the warning message is simply indicating that the duplicate title is having a number such as "2" added to the end of it to make it distinct. This change does not affect the question itself (titles aren't displayed during an exam), so most users can safely ignore this warning.

Step 4

If you are satisfied with how the results look in Preview, click **[Finish]** to complete the import. The Respondus file has now been created or appended. Switch to the *Edit* menu to modify the file, or go to the *Preview* tab to view the file using a browser-like window.

The Standard Format for Importing

Respondus will import multiple choice, true-false, essay, fill in blank, and multiple response questions. The plain text, rich-text, or MS Word file must be organized in a "Standard Format" before it can be imported into Respondus. The Standard Format for multiple choice questions has *required elements* and *optional elements*, each of which is described below. This section is followed by an explanation of the formatting required for true/false, essay, fill in blank, and multiple response questions.

Required Elements (Multiple Choice)

Each question must begin with a *question number*, followed by either a period "." or a parentheses ")".

Example: 3)

Example: 3.

The *question wording* must follow the question number. (Note: at least one space should be between the question number and the question wording.)

Example: 3) Who determined the exact speed of light? Example: 3. Who determined the exact speed of light?

Each answer must begin with a letter (A-Z) followed by a period "." or a parentheses ")".

Example: 3) Who determined the exact speed of light?

- a. Albert Einstein
- b. Albert Michelson
- c. Thomas Edison
- d. Guglielmo Marconi

Optional Elements (Multiple Choice)

A "title" can be imported with each question. If a title is not provided for a question, the first 20 characters from the question wording will be used as the question title. Titles must be placed at the beginning of a question and begin with "Title:" followed by the actual text for the title. If the title exceeds 20 characters, the remaining characters will be dropped during the import.

Example: Title: Speed of Light

- 3) Who determined the exact speed of light?
- a. Albert Einstein
- b. Albert Michelson
- c. Thomas Edison
- d. Guglielmo Marconi

For imports into an exam file, *correct answers* can be indicated in two ways. First, you may place an asterisk (*) directly in front of the answer choice (do **not** put a space between the asterisk and the answer choice).

Example: Title: Speed of Light

- 3) Who determined the exact speed of light?
- a. Albert Einstein
- *b) Albert Michelson
- c) Thomas Edison
- d. Guglielmo Marconi

The second option is to place a list of correct answers at the end of the file. The list must begin with the word "Answers:" and must be positioned at the end of the file. (Note: Any text after the answer list will be ignored.)

Example: Answers:

1. A

2. C

3. в

If neither method is used to select a correct answer, Respondus will automatically select the letter "A" as the correct answer. Don't worry, you will be warned if a question does not have an answer selected for it prior to completing the import.

Feedback for individual answer choices can be imported by placing the feedback immediately after the answer choice and by beginning the line with the a symbol. There must be at least one space between the a symbol and the feedback text.

Example:

Title: Speed of Light

- 3) Who determined the exact speed of light?
- a. Albert Einstein
- @ No. Albert Michelson determined the exact speed of light.
- *b) Albert Michelson
- @ Yes. Albert Michelson won the Nobel Prize for Physics for determining the exact speed of light.
- c) Thomas Edison
- @ No, Thomas Edison did not determine the exact speed of light.
- d. Guglielmo Marconi
- @ No. Marconi did not discover the exact speed of light, but he did win the Nobel Prize for Physics for his work with radio waves.

General feedback, which provides feedback for an overall question (opposed to feedback for individual answers), must appear immediately after the question wording and before any of the answer choices. The line must also begin with the @ symbol, and there must be at least one space between the @ symbol and the feedback text.

Example:

Title: Speed of Light

- 3) Who determined the exact speed of light?
 @ Albert Michelson was the first American to win the Nobel Prize in Physics (1907) for his measurements of the speed of light. His experiments laid the groundwork for Einstein's Theory of Relativity.
- a. Albert Einstein
- @ No. Albert Michelson determined the exact speed of light.

*b) Albert Michelson

@ Yes. Albert Michelson won the Nobel Prize for Physics for determining the exact speed of light.

etc.

As shown in the previous example, both types of feedback can be used within a single question (although this is not typically done).

Point values can be set for each question or for a group of questions. Points are set by adding "Points:" followed by a space and the point value. The points value is used for the next question and all following questions until a new point value is set.

Example: Points: 2.5

3) Who determined the exact speed of light?

. . . .

4) Who determined the exact speed of sound?

Both questions 3 and 4 will be given a value of 2.5 points.

Importing True and False Questions

The process of importing "true and false" questions is similar to that used for importing multiple choice questions (see above). Both of the following examples are valid ways to format a true and false question for importing purposes.

Example: 3) Albert Michelson determined the exact speed of

light?

*a) True b) False

Example: 3) Albert Michelson determined the exact speed of

light?

*a. T b. F

It's important to note that the "True" (or "T") answer choice must be listed prior to the "False" (or "F") answer choice in order for Respondus to recognize it as a true and false question type. (If "False" appears first in the list, the question will be imported as a "multiple choice" question).

To include a "title" or "feedback" with the true and false question, follow the same formatting rules described above for multiple choice questions. For instance,

Example: Title: Light speed

- 3) Albert Michelson determined the exact speed of light?
- @ Correct. Albert Michelson won the Nobel Prize for Physics for determining the exact speed of light.

*a. True

@ Yes. Albert Michelson won the Nobel Prize for Physics for determining the exact speed of light.

b. False

@ The correct answer is True. Albert Michelson determined the exact speed of light and won the 1907 Nobel Prize for Physics for his efforts.

A second way to designate a correct answer for a true and false question is to place it in a list of correct answers at the end of the file. The list must begin with the word "Answers:" and must be positioned at the end of the file. (Note: Any text after the answer list will be ignored.) The correct answer for a true and false question can be designated in three ways: (1) the complete word "True" or "False," (2) the letter "T" or "F," or (3) the alphabetical letter "A" (for true) or "B" (for false). For example, the formatting of each of the following answers is acceptable for true and false questions in which all of the answers are "true":

Example: Answers:

1. True

2. T

3. A

Importing Essay Questions

The logic for importing essay questions is similar to what is described above for Multiple Choice and True-False questions. The primary difference is that the first line of formatting must begin with "Type: E". This is followed by the "Title" (which is optional), the question number, and the question wording.

Example: **Type: E**

Title: Michelson-Morely experiment

4) How is the Michelson-Morely experiment related to Albert Einstein's theory of relativity?

If you are importing an essay question, you can supply an answer two different ways. First, you may provide an answer immediately after the question wording, beginning the answer with "a." or "a)" (without the quotes).

Example: **Type: E**

Title: Michelson-Morely experiment

4) How is the Michelson-Morely experiment related to Albert Einstein's theory of relativity?

a) In 1887, Albert Michelson and Edward Morely carried out experiments to detect the change in speed of light due to ether wind when the Earth moved around the sun. The result was negative. They found the speed of light is always the same regardless of Earth's motion around the sun. Scientists were puzzled with this negative result, and they didn't know how to explain it. Albert Einstein came up with the answer in his famous second postulate in theory of relativity: that the speed of light (in vacuum) is always constant and absolute, regardless of its source's motion and observer's movement.

The second way to supply an answer for an essay question is to place it in a list of correct answers at the end of the file. As described above with multiple choice questions, the list must begin with the heading "Answers:" and must be positioned at the end of the file. The answer to an essay question should begin with the corresponding question number, followed by either a period "." or a parentheses ")". This is then followed by a space and then the answer.

Example: Answers:

- 1. A
- 2. C
- 3. B
- 4. In 1887, Albert Michelson and Edward Morely carried out experiments to detect the change in speed of light due to ether wind when the Earth moved around the sun. The result was negative. They found the speed of light is always the same regardless of Earth's motion around the sun. Scientists were puzzled with this negative result, and they didn't know how to explain it. Albert Einstein came up with the answer in his famous second postulate in theory of relativity: that the speed of light (in vacuum) is always constant and absolute, regardless of its source's motion and observer's movement.

 5. B

Importing Fill-the-Blank Questions

Fill-the-blank questions may be imported by starting the first line of formatting with "Type: F". This is followed by the "Title" (which is optional), the question number, and the question wording.

Example: **Type: F**

Title: Who invented television?

5. Who is known as the "father of television"?

Respondus allows only one correct answer per question, but it does permit you to enter multiple forms of that answer.

Example: **Type: F**

Title: Who invented television?

5. Who is known as the "father of television"?

a. Zworykin

b. Vladimir Zworykin

c. Vladimir Kosma Zworykin

Answers can also be placed at the end of the file, using a format similar to multiple choice questions. The only difference is that you can enter multiple forms of an answer by repeating the question number.

Example: Answers:

1. A

2. C

3. в

4. C

5. Zworykin

5. Vladimir Zworykin

5. Vladimir Kosma Zworykin

6. B

Importing Matching Questions

The process of importing a "matching" question is similar to what is described above for importing multiple choice questions, but there are some key differences. The first line of formatting must begin with "Type: MT". This is followed by the "title" (which is optional), the question number, and the question wording.

Each *answer* (which consists of both parts of a correct match) must begin with a letter (a-z) followed by a period "." or a parentheses ")". The two parts of the match must be separated with an "=" symbol and there should not be any hard returns or blank lines within either parts of the answer.

Example: **Type: MT**

Title: Scientific discoveries

4) Match the correct name to the discovery or theory.

a. Michelson-Morely = Speed of light

b. Einstein = Theory of Relativity

c. Marconi = radio waves

Spaces before or after the "=" symbol are optional, but it is important that an answer only uses the = symbol for the purpose of separating the two parts of the match. If you plan to list correct answers for other questions at the bottom of the document, simply skip the number for all questions that are of the matching variety.

Importing "Multiple Response" Questions

The logic for importing questions that allowing multiple responses is similar to what is described above for importing multiple choice questions. (Multiple Response questions are, essentially, multiple choice questions in which more than one correct response can -- and generally should -- be selected by the student). The primary difference is that the first line of the formatting must begin with "Type: MR" (as an alternative, you can use "Type: MA" which stands for "Multiple Answers"). This is followed by the "Title" (which is optional), the question number, and the question wording. Each correct answer is designated with an asterisk.

Example: **Type: MR**

- 3) Which of the following individuals are credited with determining the exact speed of light?
- a. Albert Einstein
- *b. Albert Michelson
- *c. Edward Williams Morley
- d. Thomas Edison

To include a "title" or "feedback" with the Multiple Response question, follow the same formatting rules described above for multiple choice questions. For instance,

Example: **Type: MR**

Title: Determining Speed of Light

- 3) Which of the following individuals are credited with determining the exact speed of light?
- @ Albert Michelson and Edward Williams Morley collaborated on a series of experiments that eventually led to the exact determination of the speed of light.
- a. Albert Einstein
- @ No. Albert Michelson and Edward Williams Morley collaborated on a series of experiments that eventually led to the exact determination of the speed of light.
- *b) Albert Michelson
- @ Yes. Albert Michelson is one of the two persons credited with determining the exact speed of light.
- *c) Edward Williams Morley
- @ Yes. Edward Williams Morley is one of the two persons credited with determining the exact speed of light.

(Note: this example illustrates how to include both "General Feedback" and answerspecific feedback. In most cases, you would include only one type of feedback.)

A second way to designate correct answers multiple response questions is to place them in a list of at the end of the file. The list must begin with the word "Answers:" and must be positioned at the end of the file. If a question has been designated as a Multiple Response type using "Type: MR", then correct answers can be listed three different ways: (1) placing a blank space between the letters representing the correct answers, (2) placing a comma between the letters representing the correct answers, or (3) placing a comma and a blank space between the letters representing the correct answers. For example, the formatting of each of the following answers is acceptable for multiple response questions.

Example: Answers:

1. B D

2. B, D

3. B,D

Important: Once the import file is organized to the specifications described above, it should be saved to MS Word (.doc and .docx), rich-text (.rtf) or a text (.txt) file. It is then ready to be imported by Respondus.

Importing Images with Questions

Images embedded in MS Word and the QTI formats will import automatically. However, it is possible to import images with rich-text and text files using alternate methods. First, be sure the images are in gif, jpg, or jpeg format and are contained in a separate folder. Then place the following tag at each place where an image should appear: [img: "filename.jpg"]. The word "filename.jpg" should be replaced with the actual file name.

Example: 3) The interferometer, shown here [img:

"interferometer.jpg"], was

used by which of the following scientists.

a. Albert Einstein

*b. Albert Michelson

c. Thomas Edison

d. Vladimir Zworykin

To include alternative text for ADA-compliant screen readers, place the desired text in a second set of quotes immediately following the quotes that contain the file name:

[img: "interferometer.jpg" "Picture of an interferometer"].

All images that are being imported must be placed in a single folder. During the import process, the location of the image folder must be specified in the first step. After the import is complete, the images will appear inline with the question text.

Importing Tab/Comma Delimited Files (CSV)

Questions can be imported from tab/comma delimited files (.csv). This type of importing is best done by someone who has experience with databases or CSV-structured files.

The CSV file can have a maximum of 34 columns. If all columns are used, they should follow this order: Type, Title/ID, Points, Question Wording, Correct Answer, Choice 1, Choice 2,

Choice 3, Choice 4, Choice 5, Choice 6, Choice 7, Choice 8, Choice 9, Choice 10, General Feedback, Correct Feedback, Incorrect Feedback, Feedback 1, Feedback 2, Feedback 3, Feedback 4, Feedback 5, Feedback 6, Feedback 7, Feedback 8, Feedback 9, Feedback 10, Topic, Difficulty Level, Meta 1, Meta 2, Meta 3, Meta 4.

The first column, "Type" should use the two-letter abbreviation shown below:

MC = Multiple Choice

TF = True/False

MR = Multiple Response/Answer

FB = Fill in the Blank/Short Answer

ES = Essay/Paragraph

The following columns must always be present in the .csv file: Type, Title/ID, Points, and Question Wording, although the Points and Title/ID columns can be empty. If the Type is "ES" (essay), no further columns are required. If the Type is "MC" (multiple choice), "MR" (Multiple Response/Answer), "FB" (Fill in the Blank/Short Answer), or "TF" (True/False) there must also be a Correct Answer column (although for FB questions, this column is not used and can be blank). For MC, MR, and FB questions, "Choice 1" column must also be present.

If the "Points" column is not empty, the value can range from 0-100 and will be rounded to two decimal places. If no value is provided, Respondus will assign the point value of 1.00.

The formatting requirements for the "Correct Answer" column depend on the question type:

MC - Supports numbers 1-10 or letters A-J (ignoring the case)

TF - Supports numbers (1,2) and letters (A,B), where 1/A= true, 2/B= false. The words "true" and "false" are also supported. Capitalization is ignored for all answer types.

MR - Supports a list of numbers/letters within the range of 1-10 or A-J. The numbers/letters must be separated by a comma or space; all must be contained within quotes. (e.g. "a,c,h,j" or "a c h j"). A trailing separator (e.g. "1,4,") is acceptable.

ES - (This column isn't used; use the Choice 1 column instead)

FB - (This column isn't used, use the Choice # columns instead)

The following notes will be helpful in the development of your CSV file:

- At the current time, the Topic, Difficulty, and Meta fields are being ignored and discarded. We are specifying these fields now so that they will be compatible with a future version of Respondus that will support them.
- Blank lines between records are ignored.
- Embedded line breaks within quotes are supported.
- Literal column separators (within quotes) are supported.
- Literal quotes (2 quote characters in sequence) are supported.

The following notes are specific to the feedback fields:

- all feedback columns are optional
- general feedback is not supported in Blackboard, nor for essay/paragraph questions
- correct answer feedback is not supported outside of Blackboard, nor for essay/paragraph questions
- incorrect answer feedback is not supported outside of Blackboard, nor for essay/paragraph questions
- choice-specific feedback is not supported in Blackboard prior to version 6, or for question types other than Multiple Choice; it is also not supported for fill-in-the-blank or essay/paragraph questions
- choice-specific feedback for more than 2 answer choices is not supported for TF questions
- choice-specific feedback is not supported for answer choices which do not exist

To import the tab/comma delimited file with Respondus, select the "Import Questions" task from the Start menu in Respondus. Change the "Type of File" to "Tab/Comma Delimited (CSV)" and then browse to the file. A window will open and ask you to describe the type of data being imported (plain text or HTML, the number of header rows to skip, the type of delimiter, etc.). The Preview allows you to look at the data before the import is complete. If everything looks good, click OK to close the window.

If the CSV file contains HTML, it is possible to include image links such as . (Notice that any single quote in the HTML must be changed to a pair of quotes in the HTML.) If images are referenced in the CSV file using HTML, then select the location of the image folder next.

Finally, select from the remaining options that are available from the "Import Questions" task. Click **Finish** to complete the import.

Archive Wizard

The Archive Wizard in Respondus allows you to archive an exam, including all media components and equations that may be associated with it. An entire "tree" of folders can also be archived. The Archive Wizard and related tasks are useful for doing routine backups, to create a ready-to-use exam file that can be e-mailed to a colleague, or for organizing the "Projects" folder so that only current files are displayed. Archive files require considerably less hard drive space because the contents are stored in a compressed format.

Creating an Archive File

To create a Respondus archive file, go to the *Start* menu and select the "Archive Wizard" tab. A directory of the Respondus Projects folder is now displayed. Highlight the file or folder that you want to archive and click [Next]. The next screen specifies the name of the file or folder that will be archived, plus the location of the archive file once it is created. (It is possible to choose a

different location, but this is not recommended since it will later require additional steps to restore the archived file). The final screen of the wizard indicates that the archiving is complete and provides the location of the archived file. Additional information is provided in a "Notes" section.

There is a faster way create Respondus archive files, albeit without the guidance of a wizard. From the *Start* menu, select the *Open* task. Two large buttons appear on the left side of the window: *Projects* and *Archive*. The *Projects* folder is where all active Respondus files and folders are stored. When files are archived, they are placed in the *Archive* folder. To archive a file, click once on a file (or folder) in the *Projects* area and then click the small button on the toolbar at the right named *Create Archive File* (the icon looks like a filing cabinet). A name for the archive file is suggested by Respondus; you may accept this name or provide a different one. When the [OK] button is clicked, all files associated with the exam (including media objects) are compressed into one file and it is placed in the *Archive*. If you are archiving a folder that contains multiple Respondus files, all the files contained within the folder will be included in the archive file. It is important to note that the original Respondus files are **not** deleted from the *Projects* area when they are archived. If you want to delete the original Respondus files, highlight them again in the *Projects* area and select the *Delete File* button (it looks like a "recycle waste basket") located on the toolbar at the right.

If you accepted the standard settings when Respondus was installed, the archived files will be located on your hard drive at **c:\Respondus Projects\Archives**. The files will have the extension ".rsa". The .rsa files can then be copied to another location for backup purposes or sent to a fellow user of Respondus.

Restoring an Archive File

There are two ways to restore a Respondus archive file (.rsa, .rpa) to the *Projects* area. The first approach works only if the archive file was saved to the default Archives folder (which can generally be found at c:\Respondus Projects\Archives. From the *Start* menu in Respondus, click the *Open* button. Select the large *Archive* button on the left side of the screen, highlight the file you want to restore, and click the **[Open]** button at the bottom right. The archived file or folder will then be restored and copied to the *Projects* folder. To then open the restored file in Respondus, click the *Projects* button and select the restored file.

If the archive file (.rsa, .rpa) is not located in the *Archive* folder, make sure the *Projects* button is selected and click **[Browse...]**. Navigate to the location of the archive file, highlight it with your mouse, and then click **[Open]**. The archive file will be restored and copied to the *Projects* folder at this point. You will then need to open the file in the *Projects* folder in order to view or edit it.

Please note that an archive file is not deleted from its original location when it is restored to the *Projects* folder.

Changing the CMS "Personality" and Converting Files

Each course management system (e.g., Blackboard, eCollege, WebCT) is different in terms of the question types it offers, the approach it uses to create and manage exams, and even the terminology that is used. This is why Respondus allows the user to select an environment or "personality" that matches a particular course management system. For example, one user might use the "WebCT" personality, another might select the "eCollege" personality, yet another might choose a "Blackboard" personality, and so forth. Each user will feel right at home because the features and terminology will closely parallel their course management system.

Changing the Personality

To switch to a different personality in Respondus, go to the *Start* menu and select the desired personality from the list that appears at the top of the screen. If the currently open file was created (or imported) using a different Respondus personality, a message will warn you of this and indicate that the file will be converted to the new personality if you continue. Click [OK] to continue and you will see one or more warnings of what will be modified when the file is converted. In some situations, you will be given a choice of how certain items will be converted. For instance, if you are converting a file from the WebCT 3.x personality to the Blackboard 5.x personality, you may encounter a message asking how "feedback" for answers should be handled.

After the file is converted, a screen will detail every modification or change that occurred to the file during the conversion process. You must then determine whether to "replace the current file" with the newly converted file, or to "save as a new file".

If you plan to convert a large number of files and you want to use the same conversion settings, it is recommended that you go to the File>Preferences>Conversion screen and set your conversion settings accordingly. In this way you won't have to specify your conversion preferences each time you convert a file.

If you are unsure which CMS personality was used to create a file, go to the *Start* menu, select Open, highlight the Respondus file, and select the "General Information" button from the small toolbar at the right (represented by a file folder with an overlaying question mark.) The CMS personality that was used to create the file will be displayed in the information window below.

Quarantined Questions (after a file is converted)

Some course management systems have question types that simply cannot be used by other course management systems. During the conversion process, Respondus will provide the option to drop such questions or have them "quarantined" in the newly converted file. In most situations it is best to drop the question entirely. But if, at a later time, you plan to use the converted file with the original course management system, the quarantine option will preserve the questions for this purpose.

The title of a quarantined question will appear in red in Respondus (instead of the normal color of blue). Also, if a quarantined question is included in the file when it is published to a course management system, the question will be filtered out during the publishing step.

Editing a File

Overview

Common Features Across all Question Types

Question List and Expanded View

- Multiple Choice
- True-False
- Essay
- Matching
- Fill in Blank
- Multiple Response
- Algorithmic

Adding Bold, Italics, Underline, and Super/Subscript

Media Wizard

HTML Editor

Equation Editor

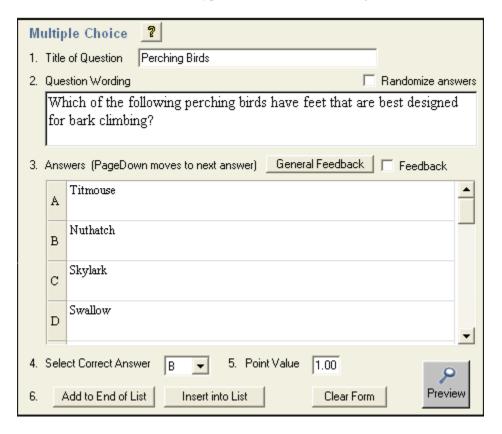
Power Editor

- Tables
- Fonts, Formatting, and Lists

Keyword Searches

Overview of Edit Menu

The *Edit* menu allows questions to be added to the currently open file. There are seven types of questions: Multiple Choice, True-False, Essay, Matching, Fill in Blank, Multiple Response, and Algorithmic. Feedback and point values can also be added to questions, as can images, media files, tables, HTML, and other types of enhanced formatting.



To create a new question, select the desired question type on the left side of the screen. The entry form on the right side of the screen will change accordingly.

Common Features Across All Question Types

All question types require you to enter a "Title." The title can be up to 64 characters. If you do **not** enter a title, Respondus will use the first 20 characters for it.

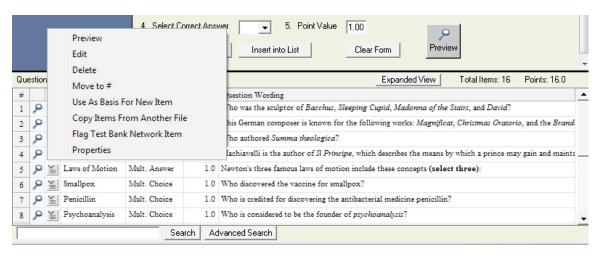
All question types have a "Question Wording" section. This is where the main body of the question is entered.

All question types except for Algorithmic allow the entry of "feedback." If feedback is enabled for a particular exam, students will see the feedback for the answers they selected after they submit their answers. To enter feedback for a question (regardless of whether you later decide to use it with an exam), select the **Feedback** option on the edit form. The form will then display fields, directly below each answer choice, where feedback can be entered. "General Feedback" can also be entered by clicking the **[General Feedback]** button and entering the desired information. (Note: If you deselect the **Feedback** checkbox on the form, all feedback remains stored with the question. It simply does not display the feedback on the *Edit* screen until the option is reselected.)

Four buttons appear at the bottom of all edit forms. The [Add to End of List] button adds the current question to the end of the "Question List" (located at the bottom of the screen). The [Insert Into List] button lets you insert the current question into the Question List at a specified location. The [Clear Form] button will erase all data that currently shows in the form. Finally, the [Preview] button opens a browser-like window that lets you view how the question will appear in the final exam--feedback and scoring information is also shown in this window. The Preview button can be selected at any stage in the editing process.

Question List and Expanded View

The "Question List" displays the title, question type, points, and question wording for each question in the file. The total number of questions and point values is shown at the top of the list. The first column enables you to preview an item by clicking the magnifying glass icon. The context menu in the next column will display a pop-up dialog with various operations that can be performed on that item.



The context menu offers the following operations:

Preview – Preview the question.

Edit – Edit the question.

Delete – Delete the question.

Move to # - Move the question to a new location in the list.

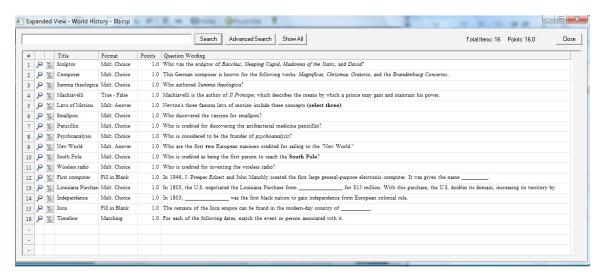
Use As Basis For New Item – Open the question in the edit template and use it as the basis for a new item. The original title will be modified slightly – for example, the number "2" will be added to the end of the name.

Copy Items From Another File – Items can be selected and copied from another Respondus file into the current file.

Flag Test Bank Network Item – An item copied from the Test Bank Network can be flagged if problems are discovered with it. This operation will only appear in the context menu if the item originated from the Test Bank Network and has not been modified.

Properties – Displays a window that summarizes the properties for the item.

The "Expanded View" button, located at the top right of the Question List, displays a full screen pop-up of the question list. This enables you to view more items at once.



Multiple Choice

Multiple Choice questions can have up to 26 answer choices, but only one correct answer can (and must) be selected. You must also provide a point value for each question (the default setting is "1").

Tip: The easiest way to navigate between the "Answer" fields in Multiple Choice questions is to use the PageUp and PageDown keys.

True and False

True and False questions are self-explanatory: enter the statement in the question wording field and then select either "True" or "False" as the correct answer.

Essay

Essay question types allow students to enter complete sentences or paragraphs for their answer. A correct answer can be entered for feedback purposes; however, most course management systems still require the answer to be graded manually by the instructor.

Matching

Matching questions require students to match items from two columns. There are two ways to create matching questions in Respondus. First, the instructor may specify matching pairs for both the left and right columns--specifically, the correct match for the left column must be placed in the field immediately to the right. If this procedure is followed, it is not necessary to indicate the correct answer in the small column located at the far left.

The second approach for creating matching questions allows items in the *right* column to be placed in any order, but requires the correct answer for the match to be indicated in the small column located at the far left. This approach is especially suited for questions in which a long list of items (e.g., country names) is being matched to a relatively short list of items (e.g., type of government). For example, the left list might contain 20 countries (Afghanistan, Albania, Algeria, Angola, Argentina, etc.) while the list on the right might display four types of government (Multi-Party Democracy, One-Party Regime, Military/Monarchical/Theocratic Regime, Disordered State). Instead of entering the type of government for each country, you can simply enter the letter of the correct answer in front of the country name. See the table below.

	Column1	Match Column
D	Afghanistan	A. Multi-Party Democracy
A	Albania	B. One-Party Regime
C	Algeria	C. Military/Monarchical/Theocratic Regime
D	Angola	D. Disordered State/Civil War
A	Argentina	
A	Austria	
A	Bahamas	
C	Bahrain	
A	Bangladesh	
В	China	
В	Cuba	

In a matching question, most course management systems display the contents of the left column in the order the information was entered. The answers in the right column are generally scrambled. (Note it is possible to place extra answers in the right column. In this situation, the extra answers act as decoys and do not match any of the answers in the left column.)

Tip: The easiest way to navigate through the answer choices is to use the PageUp and PageDown keys.

Most course management systems will place equal weight on answer choices and will score the question proportional to the number of matches that are correct. So if a student matches 8 of 10 items correctly, the score will be 80% for that question.

Fill in Blank

Fill-in-blank questions require students to enter a word, short phrase, or string of characters. Since a computer automatically grades the answer, students must give an answer that exactly matches one of the answers provided by the instructor. Most course management systems permit

multiple forms of the correct answer. For instance, if the answer to a question is "New York Yankees," the instructor can make each of the following an acceptable answer:

Yankees New York New York Yankees NY Yankees

Multiple Response

The Multiple Response question type is very similar to Multiple Choice, except that students can (and generally should) select more than one correct answer.

Tip: The easiest way to navigate through the answer choices is to use the PageUp and PageDown keys.

In the column that precedes the answer choice, the letter "X" should be entered for all correct answers. Some course management systems will give full credit only when the student has selected all correct answer choices and has left all incorrect answer choices unselected. Other course management systems allow partial credit to be given. Select the desired grading type from the "Credit Given" setting.

Algorithmic

Algorithmic questions require students to apply a mathematical formula to answer the question. Algorithmic questions are designed using variables. Random values, based on a specified range, are automatically generated for each variable in the question. Thus, Algorithmic questions can be unique for each student, as illustrated in this example where values are inserted for $\{x\}$ and $\{y\}$.

Example: If a car is traveling $\{x\}$ miles per hour for $\{y\}$ hours, how far does it travel (in miles)?

An Algorithmic question is actually a Multiple Choice question that provides a link to a Flash object that displays the Algorithmic question. (Note: the student's browser must have FlashPlayer 7.0 or higher installed). For example, a question might look as follows:

<u>Click here to view the question</u> Determine the correct answer and submit it within the pop-up window. You will then be told which answer choice to select below.

- Answer A
- o Answer B
- o Answer C
- o Answer D
- o Answer E

The student clicks the link which opens a pop-up window containing the actual algorithmic question. The student's answer is silently graded in the Flash object and the student is told which answer to select for the Multiple Choice question. This "surrogate" Multiple Choice question is then graded by the assessment system as usual.

The Respondus editor for Algorithmic questions contains the following sections that need to be completed:

- Ouestion Wording
- Formula
- Variable Properties
- Answer Properties
- Value/Answer Sets

Algorithmic – Question Wording

In the Question Wording section, enter the text of the question just as you would for any other question type. However, instead of using specific numerical values to define the details of the question, instead use variables by specifying a name enclosed in curly brackets for each one. For example: "How long does it take to travel {x} miles at a speed of {y} mph?"

Variable names can only contain letters and digits (the characters 0-9, a-z, and A-Z), and the "_" (underscore) character. In addition, the first character of a variable name cannot be a number.

You can use as many different variables as you need to define the question, and you can use the same variable name multiple times if necessary.

Note that adding images, complex HTML, etc. to the question wording will significantly increase the file size of the Flash object generated for the question, thereby limiting the number of different value/answer sets that will be available for random selection.

Algorithmic - Formula

In the Formula section, enter the mathematical formula associated with the question. This is the same formula that the student will be expected to use, and the same one that will be used to automatically calculate the correct answer for grading purposes. The same variables specified in the question wording will be used to indicate where each value should go in the formula.

The formula can be typed into the edit field directly, or entered by selecting options from the pull-down lists provided for Variables, Functions, Operators, and Constants. Selected options will appear in the edit field at the current cursor location, and will overwrite the current selection (if any).

The "Variables" list provides an easy way to select a common variable name.

The "Functions" list provides the following supported mathematical functions:

abs(x)	Absolute value of x. $abs(-3) = 3$.
acos(x)	Arc-cosine of x in radians
acosh(x)	Hyperbolic arc-cosine of x in radians
angle(x,y)	Arc-tangent of x/y in radians. Uses signs to determine result quadrant.
asin(x)	Arc-sine of x in radians
asinh(x)	Hyperbolic arc-sine of x in radians
atan(x)	Arc-tangent of x in radians
atan2(x,y)	Same as angle(x,y)
atanh(x)	Hyperbolic arc-tangent of x in radians
ceil(x)	Round x up to the nearest integer. $ceil(2.1) = 3$. $ceil(-2.1) = -2$.
cos(x)	Cosine of x in radians
cosh(x)	Hyperbolic cosine of x in radians
exp(x)	Base e (Euler's constant) raised to the power of x

```
fact(x)
                Factorial of x. fact(3) = 6.
                Round x down to nearest integer. floor(2.8) = 2. floor(-2.8) = -3.
floor(x)
int(x)
                Return integer portion of x. int(4.32) = 4. int(-4.32) = -4.
ln(x)
                Base e natural logarithm of x
                Same as ln(x)
log(x)
log10(x)
                Base 10 logarithm of x
                Return the maximum of all supplied arguments. max(1,2,3) = 3.
max(x,y,...)
                Return the minimum of all supplied arguments. min(1,2,3) = 1.
min(x,y,...)
mod(x,y)
                Modulus or remainder of x/y. mod(5,2) = 1.
                Return a random number between 0 and 1
rand()
                Round x to d decimal places. Halfway cases round away from 0.
round(d,x)
                Sine of x in radians
sin(x)
sinh(x)
                Hyperbolic sine of x in radians
                Square root. sqrt(9) = 3.
sqrt(x)
                Return the sum of all supplied arguments. sum(1,2,3) = 6.
sum(x,y,...)
                Tangent of x in radians
tan(x)
                Hyperbolic tangent of x in radians
tanh(x)
```

Note that the values for trigonometric functions are expressed in radians, not degrees. For conversion purposes, Pi radians = 180 degrees. Also, for all formulas that have two correct answers (for example, the square root of 9 is +3 and -3), only the positive number will be treated as correct.

After selecting a function from the list, the formula must be edited to replace the argument list with numbers or variables. For example, "round(d,x)" might be edited to specify a fixed number of decimal places and a variable to round, as in "round(d,x)", which would round the variable d,x to 3 decimal places.

Functions can also be nested within a formula, as in " $sqrt(abs(\{x\}))$ ". In this case, the absolute value of $\{x\}$ is evaluated first, followed by the square root of the result. Functions can be nested as deeply as necessary to properly calculate the answer.

When entering numerical values, scientific notation is expressed in the format xEy, where x is the coefficient and y is the exponent. To convert numbers from scientific notation to standard notation, use x times 10 to the power of y. For example:

- 3.2E4 equals 32000
- -2E0 equals -2
- 3.14E-2 equals 0.0314

The "Operators" list provides the following standard mathematical operators:

```
Subtraction
!
        Logical NOT. !(0) = 1, !(1) = 0, !(-3.14) = 0
%
        Modulus or remainder. For example, 5\%2 = 1.
&&
        Logical AND. 0\&\&0 = 0, 0\&\&1 = 0, 1\&\&1 = 1, 3\&\&-2.5 = 1
        Parentheses used to group elements for precedence
0
        Multiplication
**
        Power or exponent. For example, 2^{**}3 = 8.
/
        Division
        Logical OR. 0||0 = 0, 0||1 = 1, 1||1 = 1, 3||-2.5 = 1
```

+ Addition

The "Constants" list provides the following commonly-used numerical constants:

```
_e Base e or Euler's constant (2.71828...)
_pi Pi – the circle ratio (3.14159...)
```

Some example questions and associated formulas might be:

Question: How long does it take to travel $\{x\}$ miles at a speed of $\{y\}$ mph?

Formula: $\{x\}/\{y\}$

Question: What is the positive square root of $\{x\}$?

Formula: $sqrt(\{x\})$

Question: Compute sin(x) where $x = \{x\}$ degrees.

Formula: $\sin(\{x\}/180*_pi)$

Algorithmic - Variable Properties

Clicking the "Variable Properties" button in the Formula section displays the Variable Properties dialog. Here, each variable in the question wording and formula is listed by name, along with Minimum, Maximum, and Precision values for that variable.

The Minimum and Maximum define the range of values each variable can be assigned, and the Precision specifies the number of decimal places each value should be allowed before the value is rounded off.

You can click each cell in the grid to edit the specific minimum, maximum, or precision value you want to change (the variable names cannot be edited). In general, for a given variable the minimum must be less than or equal to the maximum, and the precision must be greater than or equal to 0 and less than or equal to 5.

Algorithmic - Answer Properties

Clicking the "Answer Properties" button in the Formula section displays the Answer Properties dialog. Here you can specify values for answer precision and acceptable tolerance, as well as a unit name if required.

Answer precision can be specified in Decimal Places or Significant Figures. If the precision is specified in decimal places, the value must be greater than or equal to 0 and less than or equal to 5, just as with the precision values specified in the Variable Properties dialog. If the precision is specified in significant figures, the minimum value is 1.

Answer tolerance is the amount that the student's answer can deviate from the calculated answer and still be considered correct. It can be specified as a fixed number of units or as a percentage of the answer value.

If you choose to require a unit name, comparisons with the name entered by the student will be case-insensitive and space-insensitive.

Algorithmic - Value/Answer Sets

Clicking the "Value/Answer Sets" button below the Formula section displays the Value/Answer Sets dialog. Here you can generate sets of variable values and calculate the associated answers using the formula previously entered. When the Algorithmic question is presented to the student, one of these value sets will be randomly chosen to populate the variables in the question wording and the formula, and the associated answer will be used to grade the student's response.

The grid displays a list of numbered value/answer sets. The number of sets available can be selected from the "Number of Sets" pull-down list. The contents of this list will vary, depending upon the complexity of the question wording. For each set, the generated values for each variable are shown, and the individual cells can be clicked to edit those values. Note that any manually-entered values must be within the range specified by the variable minimum and maximum in the Variable Properties dialog. The answers cannot be edited; instead, the "Update Answers" button can be clicked to recalculate the answers for all value sets.

Adding Bold, Italic, Underline, and Super/Subscript

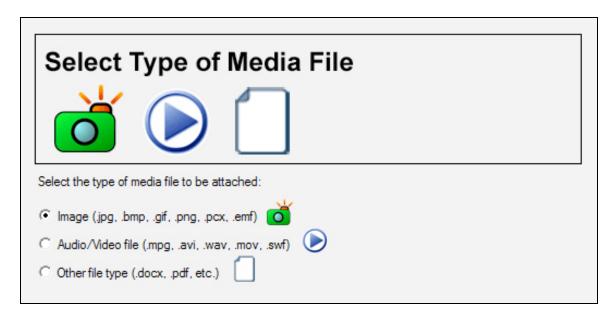
Respondus makes it easy to add enhanced formatting to question wordings, answers, and feedback. The bold, italic, and underline tasks work just like a standard word processor. Simply highlight the text you want to modify and click the appropriate [B], [I], or $[\underline{U}]$ button on the tool bar. The text will immediately change to the selected formatting. The superscript $[X^2]$ and subscript $[X_2]$ tools function in the same manner. To remove any of the above-mentioned formatting, simply highlight the text again and reselect the corresponding button from the toolbar. (Please note that although the underlying "HTML tags" are not displayed in Respondus, these tags will be transferred to -- and displayed by – the course management system when the file is uploaded from Respondus.)

Media Wizard

One of the more powerful features in Respondus is the ease in which media (e.g., images, audio clips, video clips), attachments (e.g., spreadsheets) and links can be added to exams. Media content can be added to question wordings, answer choices, and feedback without writing or viewing HTML. In addition, the media objects can be previewed offline, and everything is automatically uploaded to the WebCT server during the Publish process.

From the *Edit* menu, position the cursor at the place in the question where you want the media item added. Then click the "Media" icon on the toolbar. A pop-up wizard will guide you through the selection of the media element.

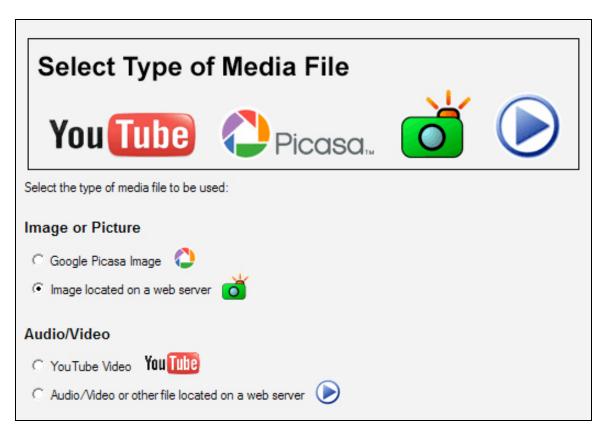
The first step is to choose whether the media is being uploaded from a local computer or being linked to on the Internet. If the media file is located on your computer, the next step is to select the type of media being attached; image (.jpg, .bmp, .gif, .png, .pcx, .emf), audio/video file (.mpg, .avi, .wav, .mov, .swf) or other file type (.docx, .pdf, etc.).



If images are selected, the Media Wizard will enable the entering of "alt text" (for screen reader applications) and will allow you to specify a scaling factor so that large images can be scaled to a smaller size.

When an Audio/Video file is attached to a question, the appropriate media player is automatically selected and you are given the option to insert it as an embedded object or a linked object. If "Other file type" is selected, the file is displayed as a web link during the exam and the file can be viewed using a browser plugin or will launch another application that's associated with that file type.

If external media is selected, the next step of the Media Wizard is to select an Image or Picture (Google Picasa Image or an image located at a URL) or Audio/Video file (YouTube video or an audio/video file located at a URL).



If Google Picasa images or YouTube videos are selected then the Media Wizard provides a search interface that allows you to search, preview, and select images and videos from the associated web sites for embedding or linking in the exam. Videos and images that are located on an external web server can also be manually linked to the exam.

Updating and deleting items added with the Media Wizard is as easy as clicking on the media icon that appears in the editor. When you select a previously added media element, a context menu will appear that allows you to update or delete the item.

Multiple Choice ?				
Title of Question Sculptor				
2. Question Wording	Randomize answers			
Who was the sculptor of Bacchus, Sleeping Cupid, Madonna of the				
Stairs, and David?	htm_54b3b.htm			
3. Answers (PageDown moves to	Update YouTube video Feedback			
A Donatello	Delete YouTube video			
B Leonardo da Vinci				

HTML Editor

Even instructors who are comfortable writing HTML often have difficulty sorting out the HTML they've written from the question wording itself. Respondus solves this problem by encapsulating blocks of HTML so that the question wording stays the focus of the screen. The only time an instructor has to view HTML is while the Respondus HTML Editor is being used.

From the *Edit* menu in Respondus, position the cursor at the location in the question where you want to begin a block of HTML. Then click the "HTML Editor" icon on the toolbar (represented by the symbol <H>) to open the editor. Enter the desired HTML by typing or pasting it into the editor--it is also possible to retrieve the HTML from a file located elsewhere on your hard drive by using the "Read File" option. Click [OK] to close the HTML Editor. A set of characters representing the HTML block will appear at the insertion point: <H_1> for the first block, <H_2> for the second block, and so on.

To delete an HTML block, position the cursor in the same field where the HTML block is located, and select the "HTML Editor" icon from the toolbar. Choose the option to delete the HTML block and highlight the block you want to delete. Click [OK] to close the HTML Editor.

Equation Editor

The process of adding equations is similar to how media objects are added (see the earlier discussion). Equations can be added to question wordings, answer choices, and feedback, all without writing HTML.

From the *Edit* menu, position the cursor at the place in the question where you want the equation located. Then click the "Equation Editor" button on the toolbar, which is represented by a summation symbol. The Equation Editor will open and you can begin creating the equation. The Equation Editor in Respondus works almost identically to the one that is available with Microsoft Word and WordPerfect. So if you've used those equation editors before, you'll already know how to use this one. The key thing to learn about the Equation Editor is that the top row of menu options consist of "symbols" while the bottom row of menu options consist of "palettes". If you select a "symbol" from the top row, it's no different than if you selected the + or = sign on your keyboard -- except that the symbols from the Equation Editor eventually get displayed as graphics since most symbols can not be viewed with a standard web browser. When you select a "palette" from the bottom row, you are given the opportunity to enter text at various insertion points shown on the screen. You can also select a palette from the bottom row, click in an insertion point, and then select a symbol from the top row. For more information about the Equation Editor, refer to the online help that is available from within the editor.

Once you finish editing the equation, exit the Equation Editor by either clicking the [X] that appears at the top right corner of the window or by selecting *File* from the pull-down menu and clicking *Exit* (do *not* simply minimize the Equation Editor). A second window that addresses the size of the equation will now appear. The font selection and size used within the Equation Editor determines how large the equation will be when it is *printed* from Respondus. But it is generally desirable to show equations in a larger format when displaying them on the web. In general, we recommend that a web-based equation be displayed at 150% of the size used for printing. So by default, the Respondus software suggests that the "Web Browser Image Scaling" for the equation be increased to 150%. To accept this setting, simply click the [OK] button. If you want the graphic to appear even larger in the web-based exam, then you can increase the scale to up to 400%. It's important to note that changing the image scale using this option only affects how it will appear in a web-based exam -- you are **not** affecting the size of the equation that will *print*

from Respondus. In order to change the size of the equation for printing purposes, you must select a different font size in the equation editor itself.

Once an equation has been added and you return to the *Edit* menu, a short string of characters representing the equation object will appear in green text. An equation placed in the *question wording* will look something like <**EQ_1**>, with the next equation being displayed as <**EQ_2**>, and so on. When an equation is placed in an *answer choice* or feedback, it will appear as a small red box, except when that field is being edited.

To modify or delete an equation, position the cursor in the same field where the equation is located. Then click the Equation Editor icon on the toolbar and select the option to modify or delete an existing equation.

To preview questions containing equations, select the [Preview] button. We recommend that you preview all questions containing equations before saving the file to QTI format.

Using MathType with Respondus

The Equation Editor in Respondus is a special version of *MathType*TM by Design Science. If you frequently create documents with equations, you may find *MathType* is better suited to your needs. *MathType* is as easy to use as the Equation Editor and has many extra features to help you save time and create a wider range of equations.

MathType is available in English, Japanese, German and French. For further information about purchasing *MathType*, contact your software dealer or Design Science directly: Design Science, Inc., 4028 Broadway, Long Beach, CA 90803, USA.

Toll free: 800-827-0685 International: 562-433-0685

Fax: 562-433-6969 Email: sales@dessci.com

World Wide Web: http://www.dessci.com

If you already own MathType, you will need to reinstall it in order to have it work directly with Respondus. MathType's readme file explains that it sets itself up to replace Equation Editor at the time that it's installed. So if you add a new application like Respondus that uses the Equation Editor, you must re-install MathType.

Power Edit

The "Power Edit" task available from the *Edit* menu provides additional features for formatting questions, including a table editor, bulleted lists, the ability to change fonts and justification, and so forth. In addition, the Power Edit window provides a much larger workspace, which is especially useful if you are creating tables or editing questions that have large blocks of text.

To begin, click in the field that you want to edit and then click the "Power Edit" button on the toolbar. Several of the tasks on the Power Edit toolbar also appear on the main toolbar, so only the unique features will be discussed below.

Tables

Respondus makes it easy to insert and edit tables. From the *Edit* menu in Respondus, position the cursor at the location where you want to insert the table. Then click the "Power Edit" button and select the "Insert Table" icon from the toolbar (located at the top right). When the next pop-up

window appears, specify the number of columns and rows that should be included in the table (all other settings are optional). Click the [OK] button to return to the Power Edit window. You can now click within the cells of the table and enter the text.

The width of the table cells can be adjusted by dragging the column lines. To edit other aspects of the table from the Power Edit menu, click within the table and select the desired action from the pull-down menu labeled "Table." Use the "Insert" option to add a row or column to the table. Use the "Delete" option to delete a row or column, or to delete the entire table. Other formatting (such as font changes and the centering of text) can also be applied to the cells in a table.

Finally, keep in mind that it is usually possible to paste tables into Respondus directly from Microsoft Word. Also, Respondus tables are designed to support both web-based exams and print exams. So you only have to create a table once if you require both online and print exams.

Fonts, Formatting, and Lists

The other features in the Power Edit task are self-evident if you are familiar with the basic functioning of a word processor. To apply a different font to text, simply highlight the text and select the desired font and size from the pull-down lists. Text can be left justified (the default), right justified, and centered by selecting the appropriate toolbar button. Finally, create bulleted or numbered lists by selecting the corresponding option from the Power Edit toolbar.

To exit the Power Edit window, click the [X] at the top right corner of the window, or go to *File* and click *Save & Exit*.

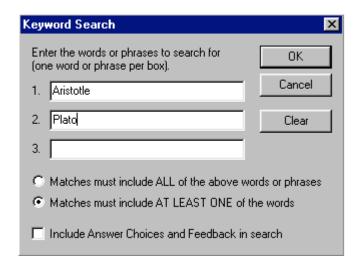
Spell Check

The Spell Check feature, located on the toolbar when the *Edit* menu is selected, will search the currently open file for spelling errors and allow corrections to be made. Once the Spell Check feature is started, it will search for words that do not match items contained in the dictionary. If the word is not found in the dictionary, you are given the option to "Change" the word to one that is suggested, to "Ignore" the identified word, to "Change All" such words in the file to one you select, or to "Add" the word to the dictionary. If you want to make more detailed changes to the question, click the "Edit This Question" button, which will close the spell checker and make the question available for editing.

Three dictionaries are included with a standard installation of Respondus: American English, Canadian English, and British English. However, a free bundle of supplemental dictionaries can be downloaded from the Respondus website, including French, German, Spanish, Dutch, Finnish, and a comprehensive medical dictionary.

Keyword Searches

There are several places in Respondus where the **[Search]** and **[Advanced Search]** buttons appears, such as at the bottom of the *Edit* and *Expanded View* menus. A quick search can be performed by entering a search term in the field next to the **[Search]** button. The **[Advanced Search]** option also allows you to search the currently open file, or the file that is being previewed.



Up to three words can be included in an Advanced Search. When more than one word is used, you can choose whether a match is required of *all* words or *any* of the words. A final option allows you to include answer choices and feedback in the keyword search.

Settings Menu

The Settings Menu is not available in the IMS QTI personality.

Preview & Publish

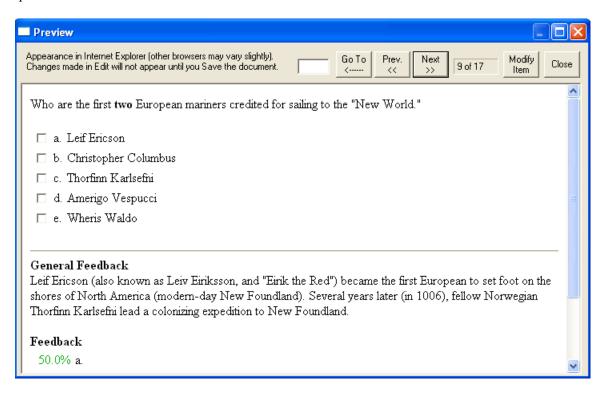
Overview Preview Save QTI XML File Printing an Exam

Overview

Once an exam is created in Respondus, the *Preview and Publish* menu lets you preview the exam, print the exam directly from Respondus, or save the exam to one of several file formats including IMS QTI and MS Word.

Preview

The *Preview* task, located on the *Preview & Publish* menu, is similar to the preview option that appears in the *Edit* menu. The primary difference is that here you can easily scroll from one question to the next.



The preview window shows how the question wording and answer choices will appear to students when they take the exam. The feedback and correct answer for the question is additionally displayed at the bottom of the window.

To edit the question being displayed in the Preview window, click the **[Modify Item]** button. The screen will change to the *Edit* menu and the question will be displayed in the editor. Make the required changes and click **[Save Changes]**.

Save to QTI XML File

The Save to QTI XML task is where the exam can be saved to the IMS QTI format. Images and media that are associated with the exam are copied to the same folder as the QTI XML file.

To save the currently opened file to QTI format, select the "Save QTI XML File" task from the *Preview and Publish* menu. Since implementations of the IMS QTI standard differ across the various systems that support it, it is necessary to offer different exporting options. Specifically, some assessment platforms require decimal numbers for the point values while others require a percentage value. Some systems require the QTI file to use IMS Content Packaging 1.1.3 while others want simply the XML file without the manifest and zip packaging. So the first step is to select the options that match the requirements of your QTI assessment system.

Next, click the "Save As" button and browse to a location for saving the QTI file. Upon clicking "Save," the files will be saved to that location.

Note that if a file being saved to QTI XML contains "Algorithmic" questions, it may be necessary to make some manual changes to the HTML and JavaScript within the wording of each Algorithmic question. This should be done after importing the QTI XML into your assessment or Learning Management System. The exact details of these changes depend upon the Learning Management System involved, but in general they consist of:

- Making sure that all files with the extension ".swf" referenced in the question markup and script include the appropriate path to the location where they are stored.
- Making sure that any hyperlinks which reference JavaScript functions have not been modified to include an unnecessary path that breaks the link.

Printing Options

Respondus allows you to format and print exams/surveys directly from the software. It is also possible to save an exam to MS Word format for further enhancement and printing. To begin, go to the *Preview and Publish* menu in Respondus and select the *Print Options* tab.

The screen now displays the printing options available in Respondus. There are three formatting templates from which to select: Exam, Exam with Answer Key, Answer Key Only. Once a template is selected, you can further modify it by clicking the Settings button to its right. If the exam being printed has matching questions, be sure to select the checkbox labeled "Matching, randomize answers" if you want the second set of answers to be randomized. Also, if you have sequential questions that refer to the same image or graphic, you will likely want to select the "Suppress Repeated Images" button so that the image is not repeated with each question.

Click the **[Edit Headers]** button to enter the information you want to appear at the top of each page. Different information can be entered for the second and subsequent pages too. The header information might look something as follows:

Top of Page Co	ontents (Headers)		X	
	that you wish to appear at es. Blank lines will not be	the top of the first page and on printed.	OK Cancel	
Left Margin	- first page -	Right Margin (right-justified)		
Professor Jonathon Smith		Name:	Name:	
History 101 - S	Spring 2001			
Test 2		Section #:		
	- subsequent pages			
Professor Smith	h	Name:		

The next section allows up to 10 variations of the exam to be generated. You have the ability to "randomize all" questions in the exam or to have the questions randomized according to question type (i.e., all the multiple choice questions are randomized within a group, all the essay questions are randomized within a second group, and so forth). If algorithmic questions are contained in the file, each Exam Variation will have a unique set of variables for the algorithmic questions. If you don't want multiple exam variations, simply retain the "Original Order" option from the pull-down list. (Note: As long as the questions in the exam file remain unchanged, a particular "Exam Variation" will have the same question order each time it is printed or saved to MS Word format. However, if you add or insert new questions, the Exam Variation will differ the next time you print/save an exam or answer key.)

It is also possible to specify a range of questions to be included in the exam. If both fields are left blank, all questions will be included.

At the bottom of the screen there are three options: *Text Preview*, *Save to File*, and *Send to Printer*. The *Text Preview* button allows you to preview the contents of the file in a pop-up window. We recommend that you use this option before printing the exam or saving the contents to a file--it is a quick way to identify mistakes. The *Save to File* option allows the creation of a MS Word file (.doc), a "rich text file" (.rtf), or a standard text file (.txt). The MS Word and .rtf formats will retain enhanced formatting such as bold, italics, and underlining, whereas the .txt format will strip such information. Once a file is saved, it can be opened with a word processor for further formatting and modification. Finally, the *Send to Printer* option permits you to print directly from Respondus. This task works similar to the printing function in other Windows programs.

Other Tools & Features

Overview
Save As Copy
Save As StudyMate Class Format
Preferences
Update License
Cleanup HTML Tool
Check for Update

Overview

There are several additional tools in Respondus that offer a range of functions. Each is discussed below

Save As Copy

The "Save As Copy" tool is located on the *File* pull-down menu. Use this task to create a copy of the currently open file.

Save As StudyMate Class Format

The Save As... tool, located on the File pull-down menu, can also be used to save Multiple Choice and True/False questions to the StudyMate Class zip format (.zip). Once saved, the file can be imported into a StudyMate Class instance or by StudyMate Author, a separate product by Respondus Inc.

Question types other than Multiple Choice and True/False are dropped during the export to the StudyMate Class zip format.

Exported items that contain images are handled as follows. If an item contains a single image, that image is placed at either the beginning or end of the question once it's imported by StudyMate Class (the beginning/end positioning is based on its proximity to the beginning or end in the original question wording). If an item has multiple images, only the first image is retained, with the text "*IMAGE*" inserted where additional images appeared in the original item.

The StudyMate Class format can also be imported into StudyMate Author, with True/False questions being converted to Multiple Choice questions with only two answers.

Preferences

A "preferences" option is located on the File menu bar, contains five tabs: *General*, *Edit & Publish*, *Retrieval*, *Conversions* and *Auto-Save*.

The top section of the *General* preferences allows you to prevent Respondus from automatically checking for updates to the Respondus software. (The checking occurs whenever an exam is published from Respondus to an online course.) Directly beneath this is a list of course management systems. If you only want to be informed of updates that relate to specific course management systems, unselect those systems for which you are not interested. The final option on the *General* tab allows the current description of the Respondus file to be edited.

The *Edit and Publish* preferences provide a variety of options:

- The ability to discard font changes when copying and pasting from another program
- The ability to change the default point value for new questions that are created or imported
- The ability to prevent the "ALT text" window (for entering text for screen readers) from appearing each time an image is added to an exam
- The scaling percentage that should be used for equations that are published to the online course
- The ability to change the default font for questions that are published to Blackboard. (We highly recommend that you don't change the default font. If you change the default font and later need to edit your questions from within Blackboard using a browser, it will be more difficult because the font HTML will be intermixed with the question wording. Also note that changes to the default font will <u>not</u> be applied to tables or any text that already has a specific font applied it.)

The fourth preference tab, *Conversions*, allows the settings to be determined for files that are converted from one CMS personality to another. If you do not want to be asked each time how certain issues should be handled for the file conversion, then select the settings that you prefer.

The *Auto-Save* tab controls what actions, such as adding a new question or editing an existing question, cause the program to automatically save the current document.

Update License

For the campus-wide version of Respondus this allows updating the license information at any time, for example to change the support contact or to renew the license early. *Update License* is located under *File* on the menu bar.

Cleanup HTML Tool

Questions imported from a Word document or by pasting from Word into a question editor may contain more formatting than is needed, such as font changes and styles that don't work properly with a course management system server.

The *Cleanup HTML* tool, located under *File* on the menu bar, allows you to apply three levels of cleanup to all questions in the current file. The first level strips away some extra font and style information that is usually not appropriate for use on servers. The next level removes almost all font information so that the server's normal fonts are used instead of other fonts. The final level removes almost all formatting which can solve problems with unsafe HTML that are not fixed using the other two levels.

Question Title Tool

There are many situations when it is desirable to rename all the titles in the Respondus file to provide a consistent look or numbering sequence. For example, if you copy questions from many different files, import additional questions, and then create some questions directly within Respondus, you may end up with a haphazard list of titles.

The *Question Title Tool*, located under *File* on the menu bar, lets you specify a "stem" (or string of text) that all question titles will start with. The stem text is automatically followed by consecutive numbering that begins with 1 (or 01, or 001, etc.). For example, if you enter

"Chapter1-" as the stem text, and then select "001" as the format for the numbering scheme, the title for the first question will be changed to Chapter1-001, the title for the second question will be changed to Chapter1-002, and so on. If you specify a range of questions for the titles being changed, you can provide even more specific titles throughout your file. For instance, questions 1-20 might use the stem "Ch1-Unit1-" and questions 21-30 might use the stem "Ch1-Unit2-" and so forth.

Check for Update

The "Check for Update" tool, located on the *Help* menu bar, provides an easy way to see if an update is available for Respondus. When Respondus is used to publish an online exam (publishing is only available with certain CMS personalities), it will automatically check to see if an update is available for the Respondus software. This auto-check will occur only once in a 24-hour period. *No information about your computer hardware and software is collected by Respondus, Inc. during this process.* Instead, the Respondus software *retrieves* information from Respondus.com and will display a message if an update is available. You will then have the choice of upgrading to the latest version of the software.

To manually check for a software update, select the "Check for Update" option from the *Help* pull-down menu (you will need a live Internet connection). Respondus will instantly return a message indicating whether an upgrade is available. If an upgrade to Respondus is available, you can let Respondus download the required file(s) automatically and update the software for you. This is the easiest way to apply a patch or upgrade.

If you prefer that Respondus does not automatically check for an update during the publishing step, go to the File menu, select Preferences, and unselect the appropriate checkbox under the *General* tab.

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