User Manual
For
Sequencing Service Management

Add-on for LabCollector

By:
AgileBio
www.AgileBio.com
www.LabCollector.com

support@agilebio.com

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1. INTRODUCTION

This is the add-ons module provided for the LabCollector application. Using this module the user can track the sequencing service flow. Sequencing Service Management (SSM) module has been developed as one such add-ons using PHP, MySQL, AJAX and JavaScript. It is completely independent of the existing Lab Collector except that, the application uses the security features of Lab Collector. This application can be accessed by two types of users the 'Admin' and the 'User' respectively.

User can place/submit the orders and track the status of the orders. User can search, edit, and cancel the order (An order may contain one or more samples). User will get the result/result files when the order is completed and the user can download the result files.

Admin can check the submitted order, cancel the order and create jobs. Admin can assign the plate or tube to the order and also manage the plate or tube. Admin will be able to assign and change the status of order, and also upload the result files. Each sample has two result files, and the name of the result files follow a specific naming convention. These naming conventions depend on the location where the sample is processed, in the plate or tube.

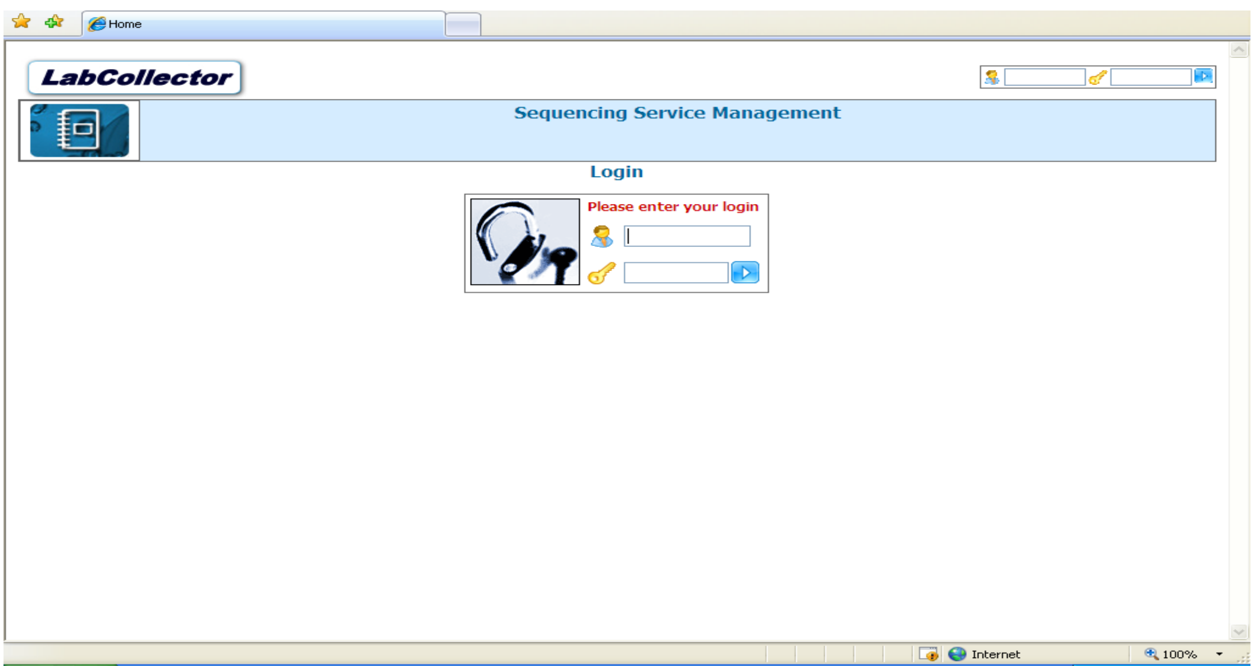


Fig No. 1.1(Login page)

2. USER

After logging in with the 'User' credentials, the user will get the following screen Fig. No. 2.1

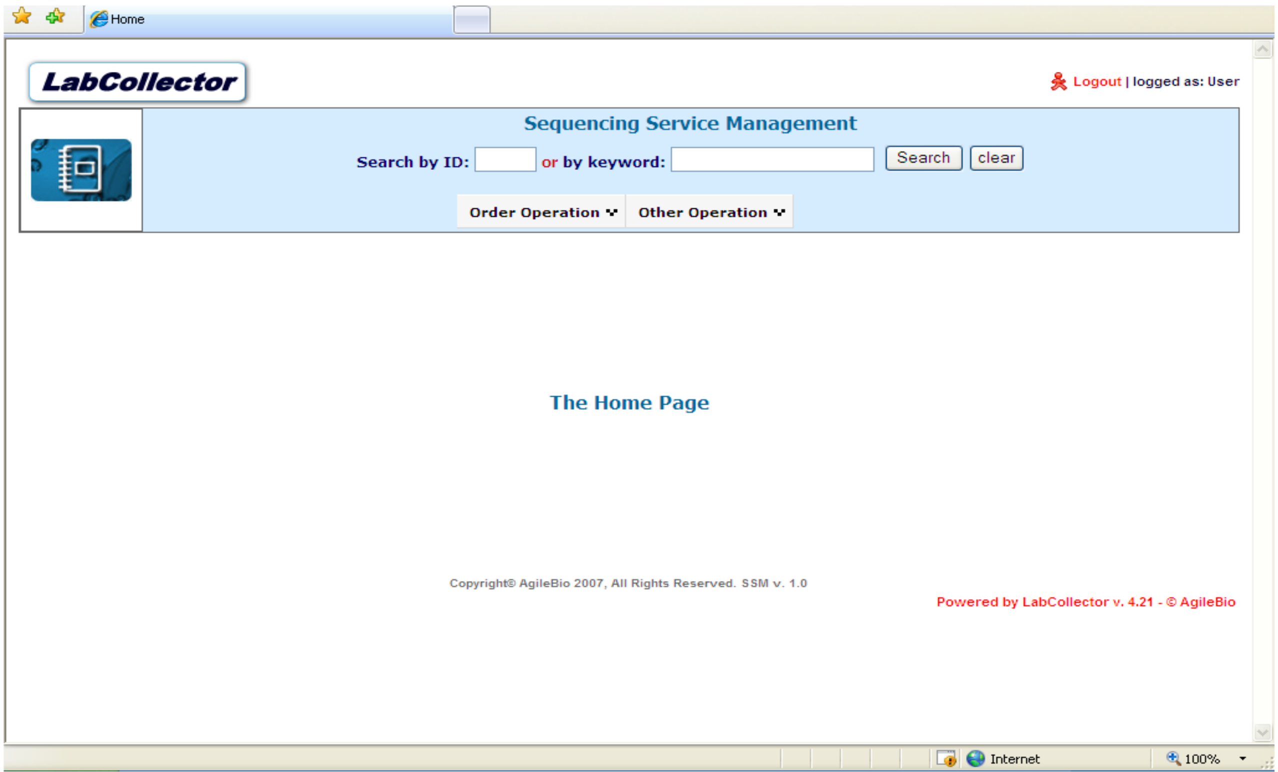


Fig No. 2.1 (User page)

User can perform the following operations:

- Order operation
  - View Order status
  - Place order
  - Results
- Other operation
  - Primer

2.1 VIEW ORDER STATUS

To view the order status, the user can access the 'Order Manager' by hovering over the 'Order Operation' menu, and selecting the 'View Order Status' option will display the following screen (fig no. 2.2).

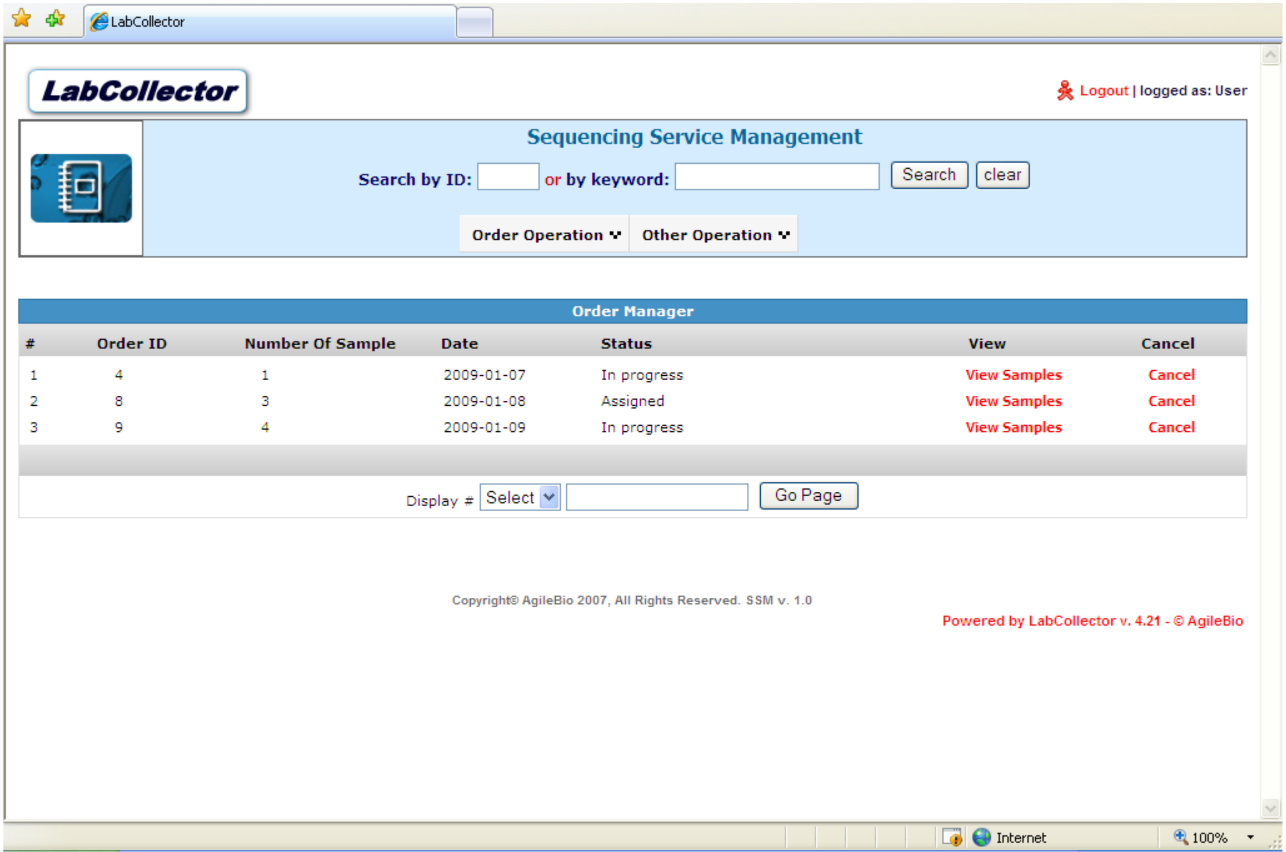


Fig No. 2.2 (Order Manager)

This screen displays the list of the orders ('Assigned' and 'in progress') submitted by individual user. Application will display the following details:

- **Order Id** - An Order Id is a system generated identification number generated for every individual order.
- **Number of samples -** The number of samples associated with every individual order.
- **Date -** The date on which the order was placed**.**
- **Status-** The current status of the order
- **View -** A link provided to view the details of the samples associated with the order. For the details, please refer below.
- **Cancel**- To cancel the order, if status is 'Assigned'

If the status of the order is 'Assigned' then the user can Cancel that order otherwise the application will restrict the user from canceling an order.

View

By clicking on the 'View Samples' link; under 'view' column; user will be able to go to the 'Order Sample Manager'; here the user will be able to view all the samples as well as the details of sample(s) of the individual order (fig. no. 2.3).

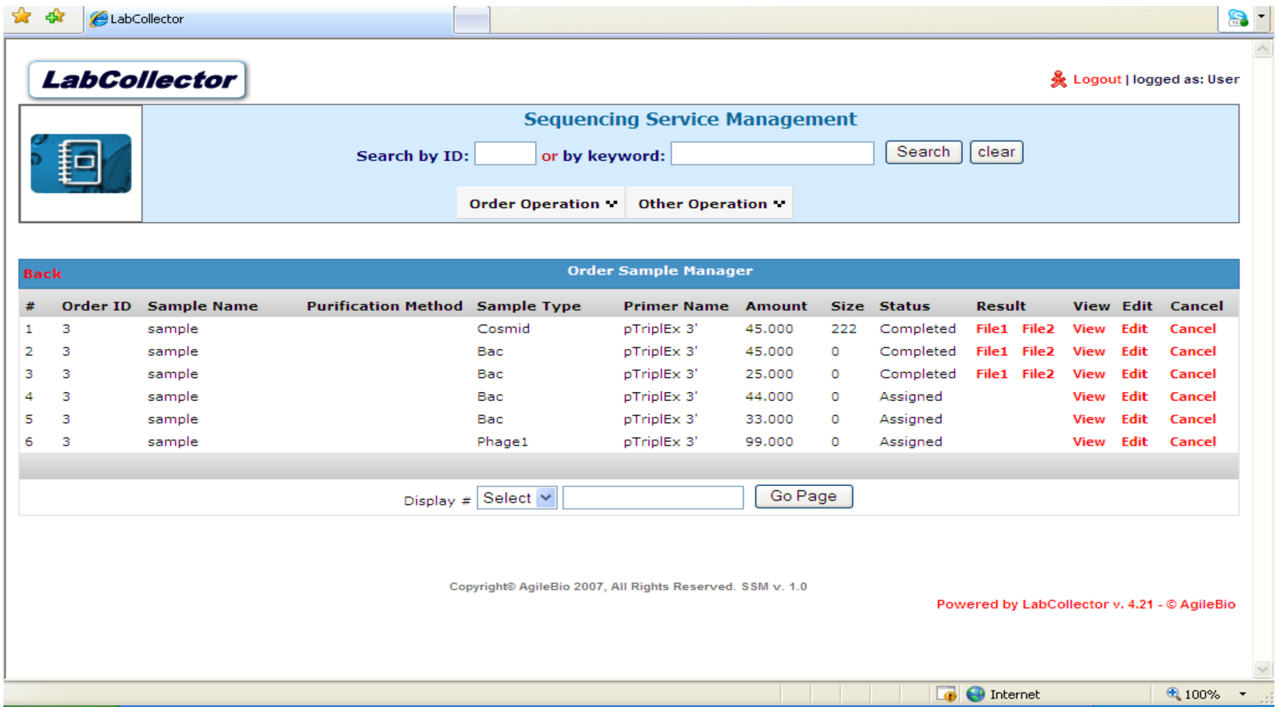


Fig No. 2.3 (Order Sample Manager)

The screen will display the following details of the sample:

- **Order Id -** An Order Id is a system generated identification number generated for every individual order
- **Sample name –** The name of the samples in the order
- **Purification method –** The name of the purification method used for the sample
- **Sample type** – Type of the sample like PCR-Product, BAC etc
- **Primer name** – Name of the primer sequence
- **Amount** – The Amount of the sample
- **Size** – The size of sample
- **Status** – The status of the sample
- **Result** – The link of result file will display here if status is completed.
- **Edit** – A link is provided to edit the sample information if it is in progress. More details are given below
- **View** – Link to view the details of sample including details added by admin. More detail given below

- **Cancel** – To cancel the sample if status is ‘Assigned’
- **Back** – Link is provided to go back to ‘Order Manager’ screen

User will be able to view the result files in the ‘Result’ column only if the order is completed and the admin has uploaded the result files (two result files for each sample which comprises of a sequence file and chromatogram file). User can download the result file by clicking on the links provided in the ‘Result’ column.

On clicking the ‘Edit’ link will open the following screen. The user can make the modifications to the required field and on hitting the ‘Save’ button will save the changes made to the database.

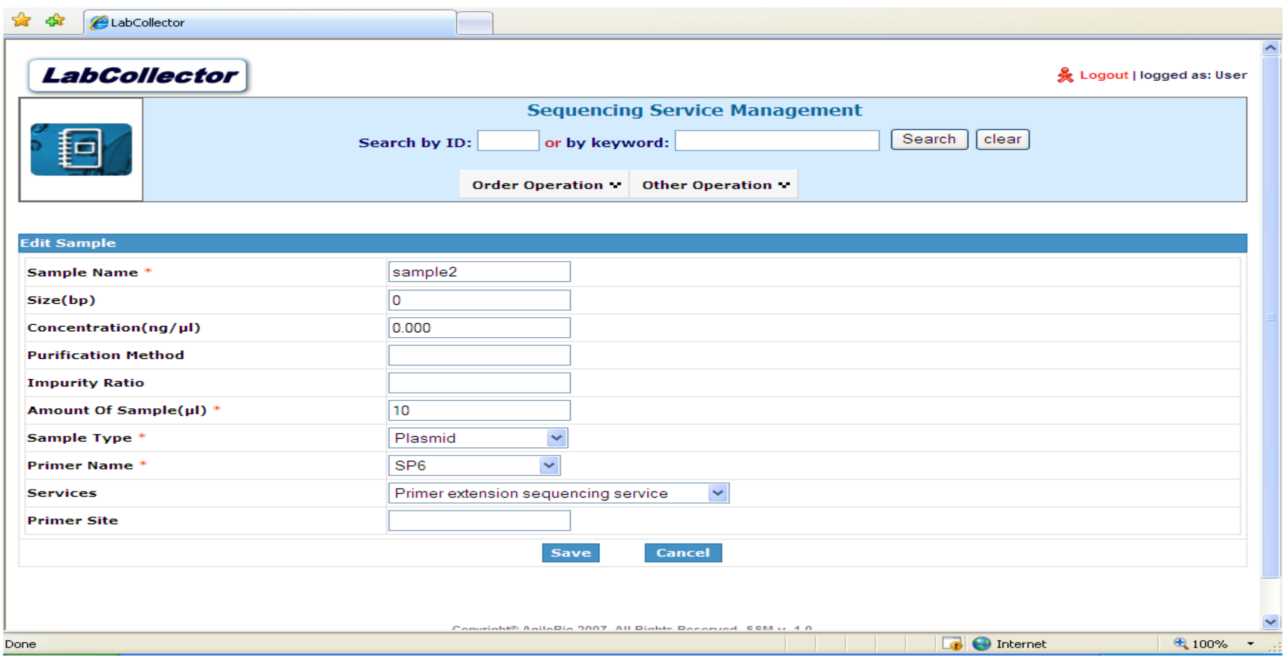


Fig No. 2.4 (Edit Sample)

View

By clicking on the view link given under the ‘View’ column; opens a popup and enables the user to view all the information of the sample, which also includes the information added by the Admin fig no. 2.5.

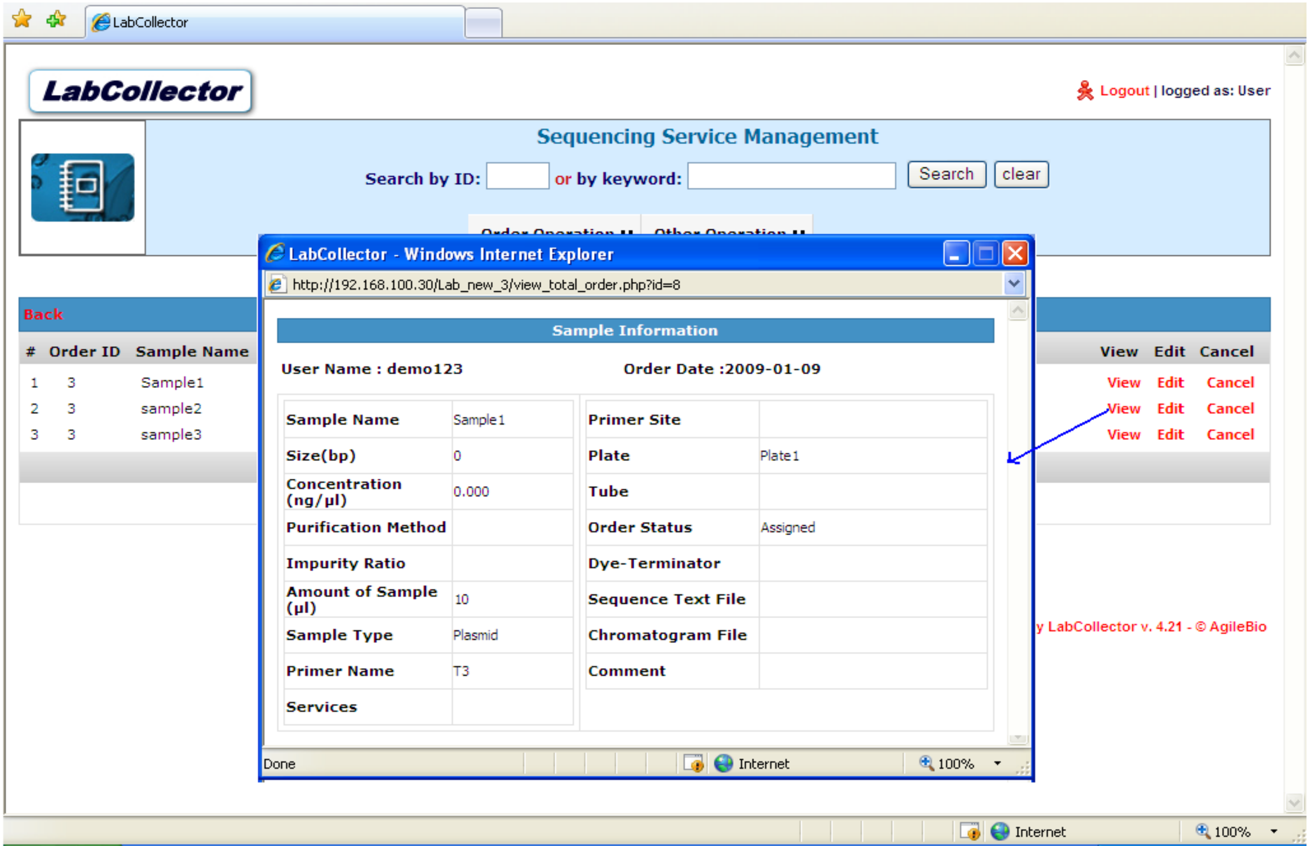


Fig No. 2.5 (Sample information)

The details added by the admin in the Sample Information screen are as follows:

- **Plate** – The name of plate where the sample will be processed
- **Tube** – The name of tube where the sample will be processed
- **Dye-Terminator** – Name of the dye-terminator used for the sequencing
- **Sequence Text File** – The name of the sequence result file will be displayed if the admin has uploaded the sequence result file.
- **Chromatogram File** – The name of the chromatogram file will be displayed if the admin has uploaded the chromatogram result file.

User can download these result files by clicking on the names of the required result file displayed in the Sample Information screen.

2.2 PLACE ORDER

To place an order, the user can access the 'Sequencing Service Order Form' by hovering over the 'Order Operation' menu, and selecting the 'Place Order' option which will display the following screen (fig no. 2.5).

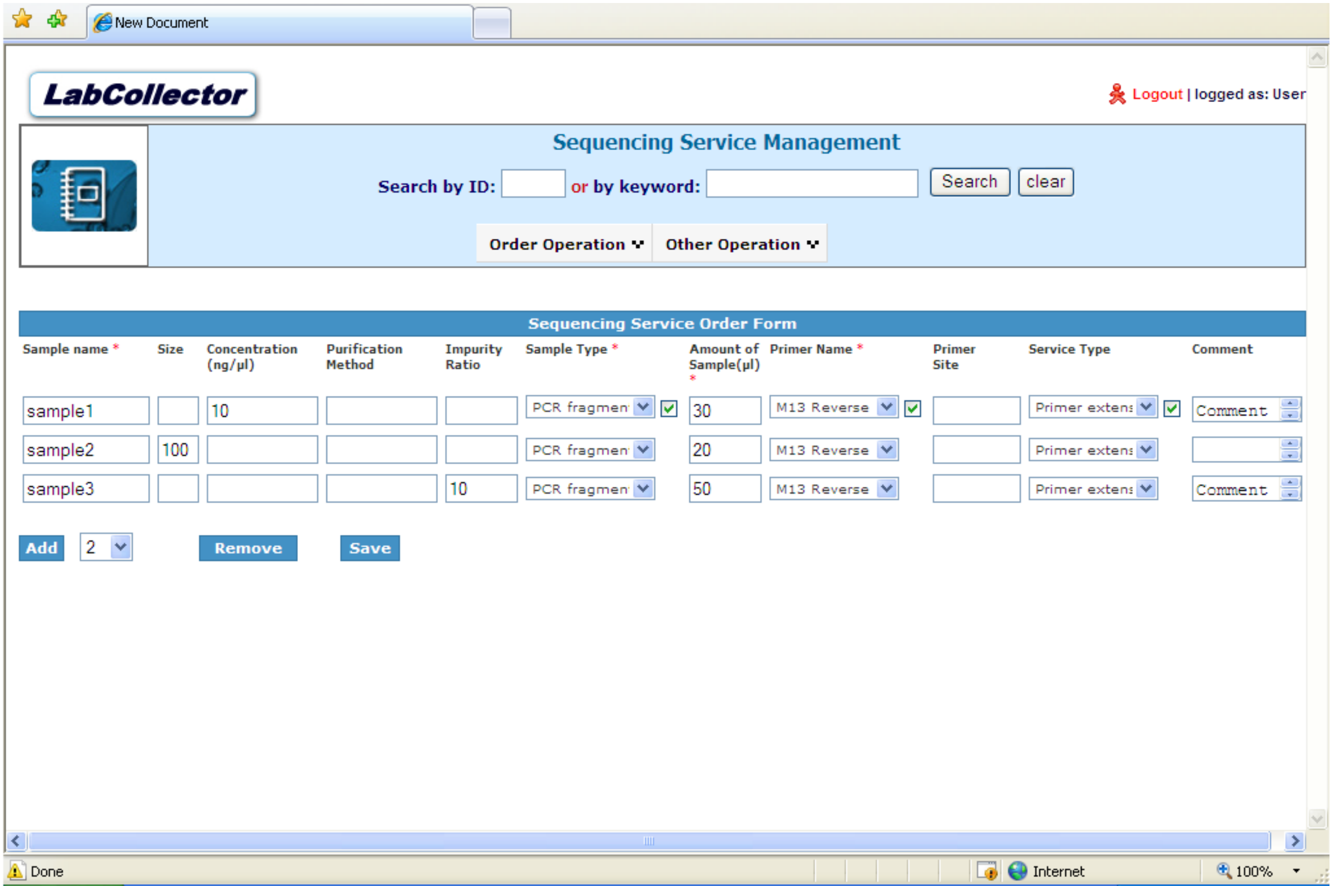


Fig No. 2.5 (Sequencing service order Form)

The details of the fields on the Sequencing order form are as follows:

- **Sample name** – The name of the sample
- **Size** – Sample size or length
- **Concentration (ng/µl)** – The concentration of the sample
- **Purification method** – The name of the method used for purification
- **Impurity ratio** – The impurity ratio for the sample
- **Sample type** – The name of the sample type
- **Amount of sample** – The amount of sample
- **Primer name** – The name of the primer
- **Primer site** – The primer site information
- **Service type** – The name of the service type used for the individual sample
- **Comment** – Comment if any.
- **Add** – This button is used to add rows in the form.
- **Remove** – This button is used to remove rows from the form. Only one line can be removed at a given instance.
- **Save** – By hitting on this button, data will go to server side and stores in side the database

The 'sample name', 'sample type', 'amount of sample' and 'primer name' are the mandatory fields. Checkboxes are given with the sample type, primer name and service type, to set the selected value for other none selected values.

User can add any number of rows to add more than one sample for one order using 'Add' button. User can also remove the added rows from the order form. Default row in the form is one.

2.3 RESULT

To view the results of the completed orders, the user can access the 'Result Order Manager' by hovering over the 'Order Operation' menu, and selecting the 'Result' option which will display the following screen (fig no. 2.6). Result order manager contains the list of all the completed orders with the results.

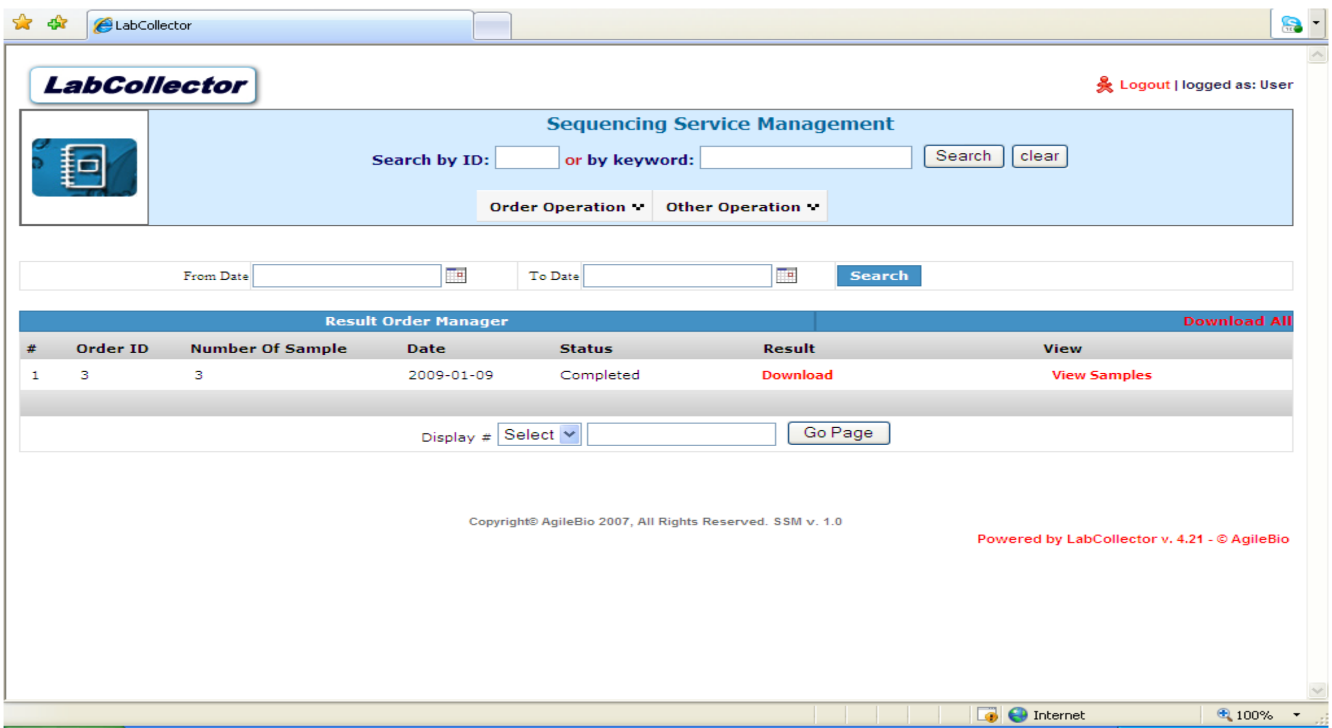


Fig No. 2.6 (Results Order Manager)

The Result screen displays the following details:

- **Order Id** - The auto incremented number for order id
- **Number of Samples** – The number of samples in an individual order
- **Date** – The date on which the order was submitted
- **Status** – The status of the order

- **Result** – Link provided under this column to download the result file in the zip format
- **View** – View the sample details. Details are given below
- **Search** – User can search according to date
- **Download All** – User can download all the completed result in zip format through this link

User can download all the result files of an individual order in a zip format by clicking on the '**Download**' link. The '**Download All**' option enables the user to download the result files of all the completed orders in zip format. User can also search the result of a particular date range.

View

By clicking on the 'View samples' under 'view' column will display the 'Order Sample Manager' (fig no 2.3), similar to the 'Order Manager'; the only difference is, all the samples will be displayed with their result files (Sequence file and chromatogram file).

2.4 PRIMER

To add a new primer, the user can access the 'Add Primer' by hovering over the 'Other Operation' menu, and selecting the 'Primer' and then 'Add' option which will display the following screen (fig no. 2.8).

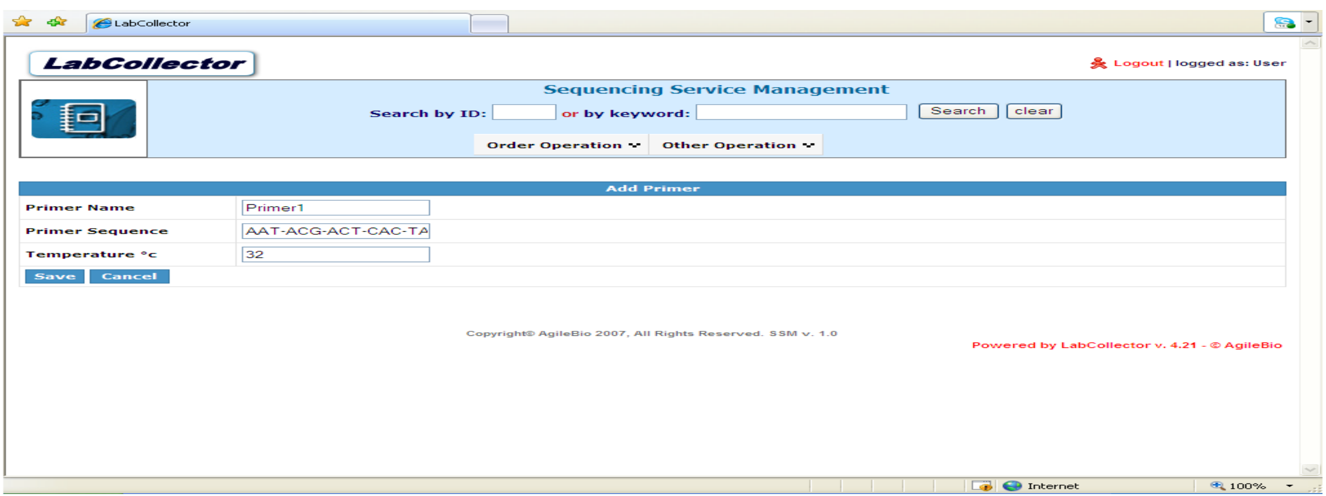


Fig no. 2.8 (Add Primer)

Add primer screen has the following fields:

- **Primer name** – The name of the primer
- **Primer sequence** – The primer sequence
- **Temperature** – The melting temperature of the primer
- **Save** – Button provided to save the data
- **Cancel** – Button provided to cancel the operation

By hitting on the 'save' button the data will be stored in the database.

By hovering on the 'Other Operation' and 'Primer' and then selecting the 'View', user get the 'Primer Manager' window and will be able to view the list of primers added by the user (fig no 2.9).

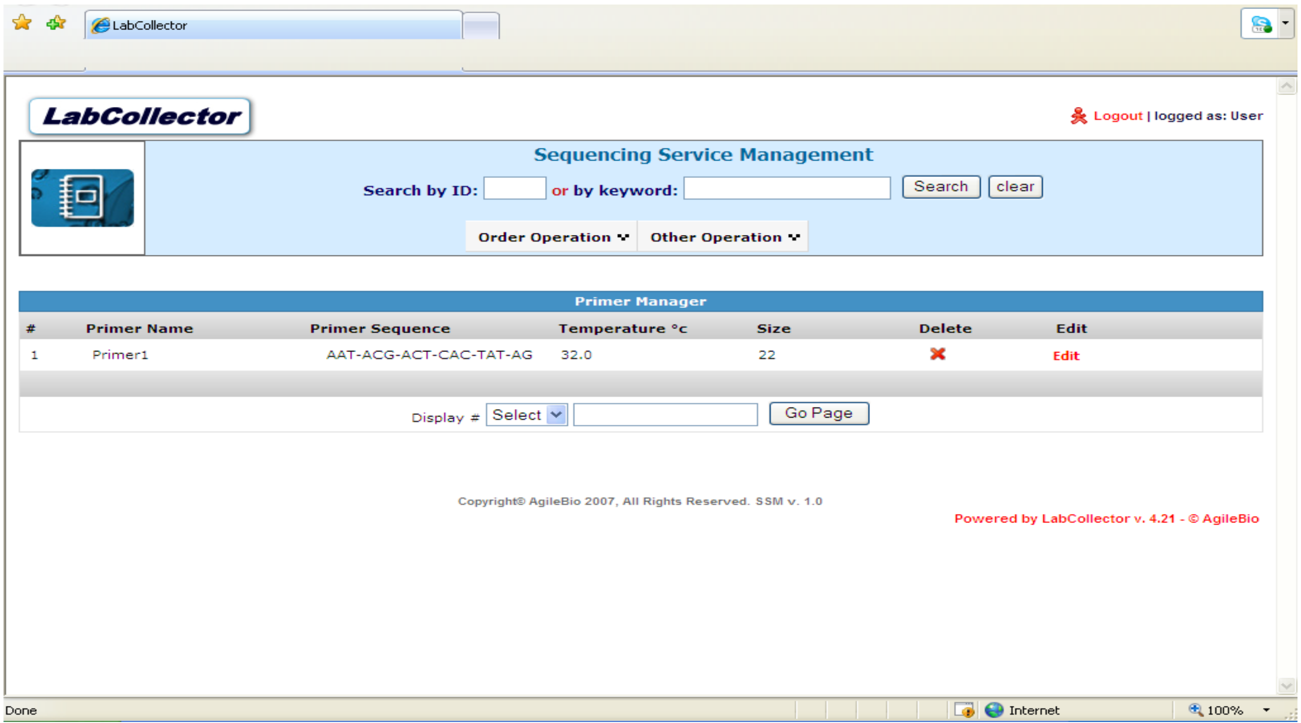


Fig No. 2.9 (Primer Manager)

Primer manager displays the following fields

- **Primer name** – The name of the primer
- **Primer Sequence** – The sequence of the primer
- **Temperature** – The melting temperature of the primer
- **Size** – Size (length) of the primer sequence
- **Delete** – Icon provided to delete the details of the primers
- **Edit –** Link provided to edit the previous information of the primer. Details are given below

Edit

Clicking on the 'Edit' link displays the 'Edit Primer' screen (fig no 2.10); the user can edit the previously added information of the primer from this screen. This screen displays the following details:

- **Primer Name** – The name of the primer

- **Primer sequence** – The name of the primer sequence
- **Temperature** – The melting temperature of the primer.
- **Save** – To save the changes
- **Cancel** – To cancel the operation

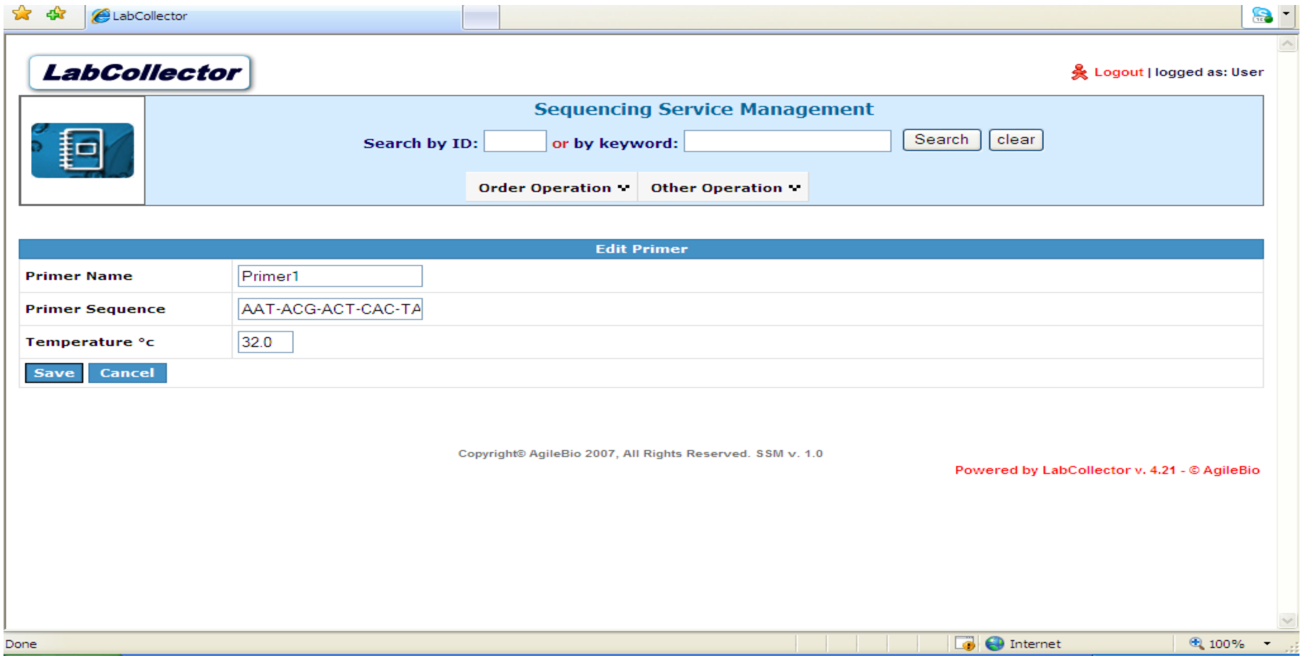


Fig no 2.10 (Edit primer)

By hitting on the 'save' button the user can update the data with the modifications. The user can cancel the task by clicking on the 'cancel' button.

3. ADMIN

After logging into the application with the 'admin' credentials, the application will display the following home page (fig no 3.1)

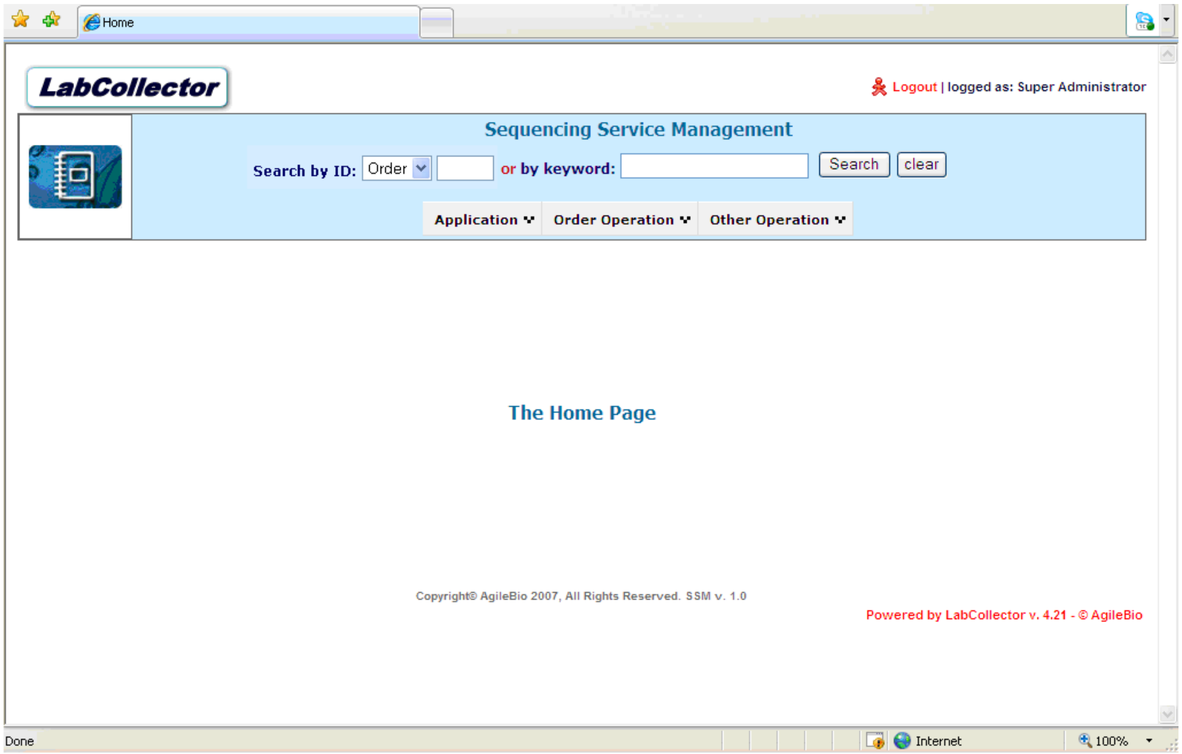


Fig No 3.1 (Admin Home Page)

The admin can perform the following operations:

- **Application**
  - User Management
- **Order operation**
  - View Order status
    - Current
    - Archived
  - Results
- **Other Operation**
  - Primer
  - Standard Services
  - Sample Type
  - Plate
  - Tubes
  - Naming Convention

Admin can assign the plate/tube to the samples. The admin will be able to upload the result file for the individual sample when they are completed. There are two result files one is sequence file and another is chromatogram file.

3.1 USER MANAGEMENT

To view all the users, the admin can access the 'User Manager' by hovering over the 'Application' menu, select the 'User Management' option and then select the 'View User' option which will display the following screen (fig no. 3.2).

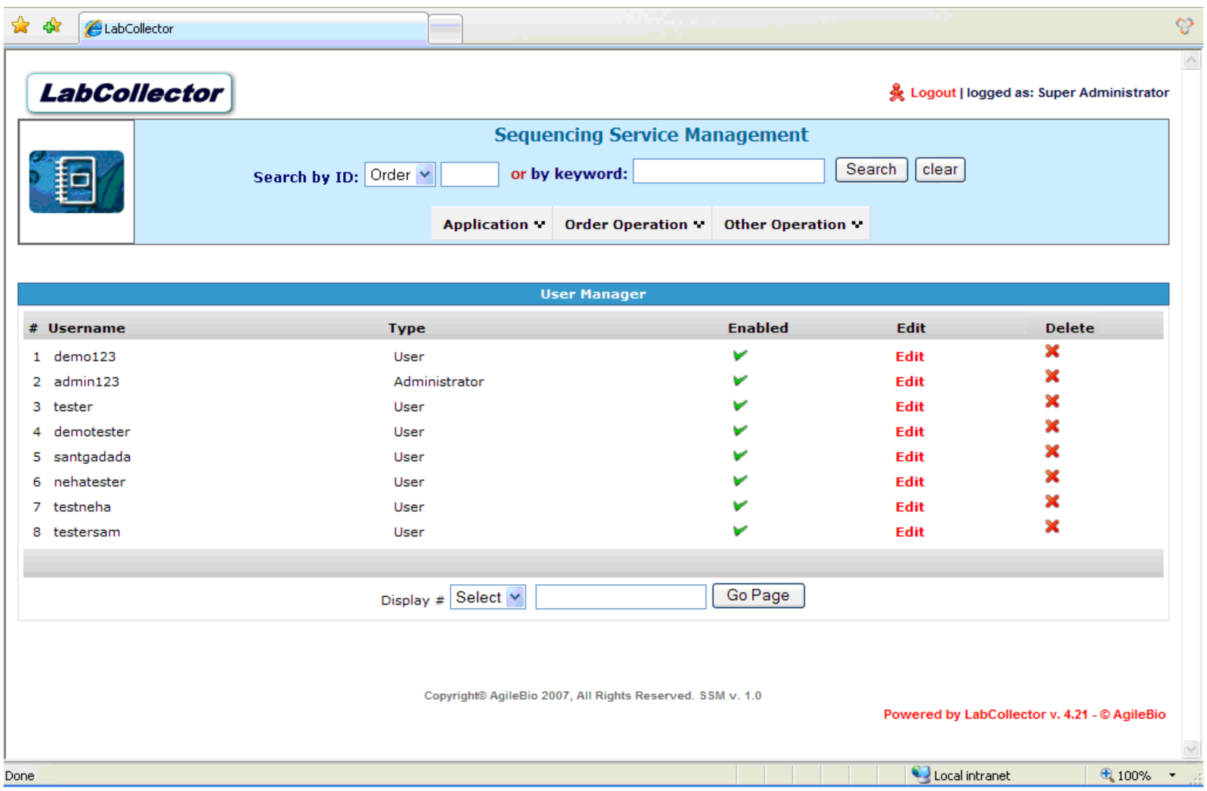


Fig No. 3.2 (User Manager)

The screen displays the following details

- **Username** – The identification of the user account
- **Type** – The type of the user account
- **Enabled** – An icon is provided in this column to enable or disable the user account, only enabled users will be permitted to login to the application.
- **Edit** – A link is provided to edit the previous information, refer below for the details.

Edit

By clicking on the ‘Edit’ link the application will display the ‘Edit User’ screen. This screen facilitates the admin in modifying the previously added user information.

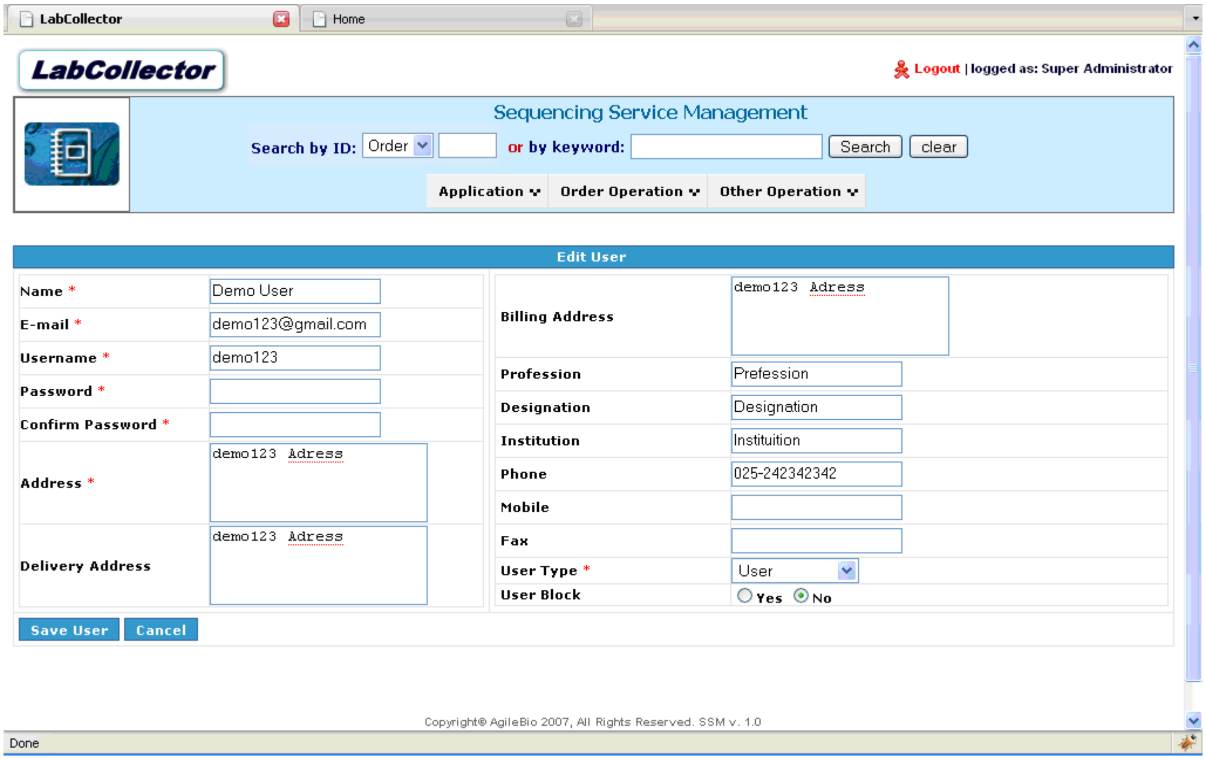


Fig No 3.3 (Edit User)

‘Edit User’ screen display following fields:

- **Name** - The name of the user
- **E-mail** – The email address of the user
- **Username** – Account name of user
- **Password** – Password of the user
- **Confirm Password** – Confirmation of the password
- **Address** – The address of the user
- **Delivery Address** - The delivery address of the user
- **Billing Address** – The billing address of the user
- **Profession** – User’s profession
- **Institution** – The name of the institution
- **Phone** – Phone number of the user
- **Mobile** – Mobile number of the user
- **Fax** – Fax number of the user
- **User Type** – The type of the user(Admin/User)

- **User Block** – Options provided for blocking a user. By default the status of an user is not blocked
- **Save User** – Button provided to store the modified data into the database
- **Cancel** – Button provided to discard the changes done

By hitting on the 'Save User' button modifications done to the user details will be stored in the database.
To add a new user, the admin can access the 'Add User' by hovering over the 'Application' menu, select the 'User management' option and selecting the option 'Add User' will display the following screen (fig no. 3.4)

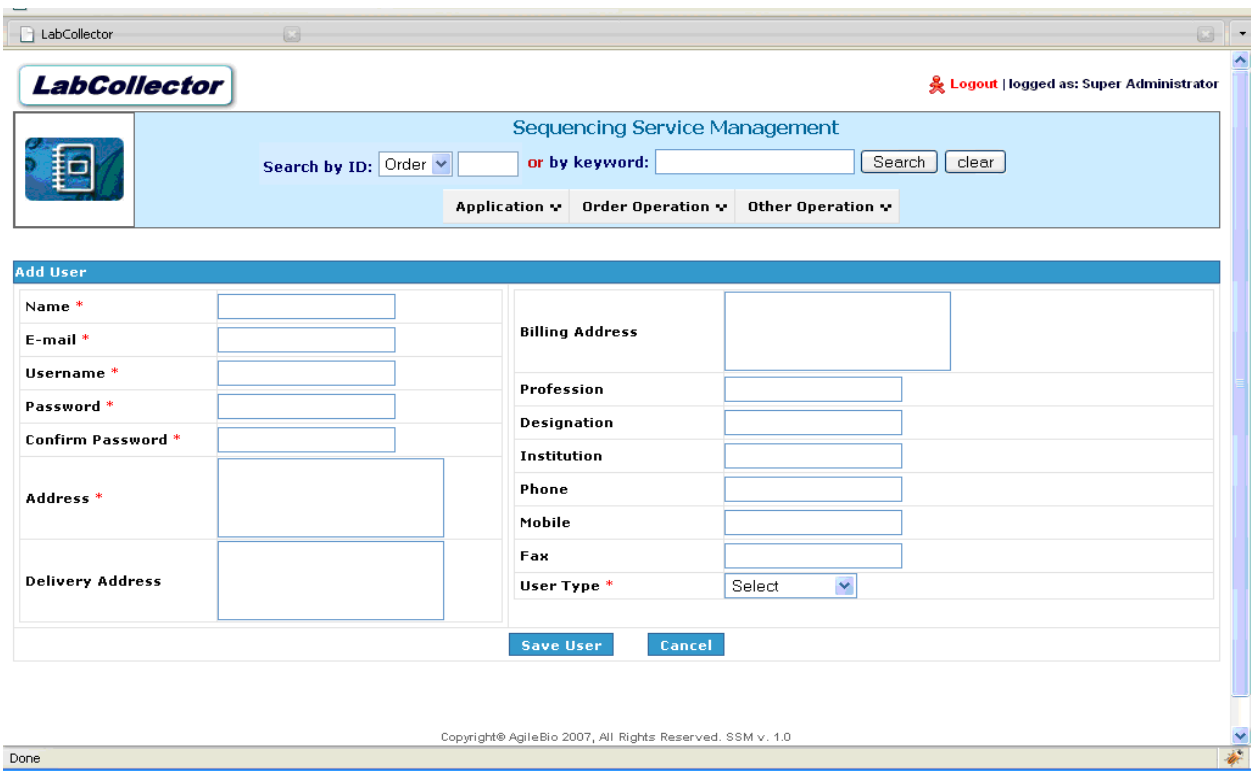


Fig 3.4 (Add user)

The following information will be entered in the 'Add User' screen. Certain fields are mandatory and they are marked by red asterisk (*).

- **Name** - The name of the user
- **E-mail** – The email address of the user
- **Username** – Account name of the user
- **Password** – Password of the user
- **Confirm Password** – Confirmation of the password
- **Address** – The address of the user
- **Delivery Address** - The delivery address of the user

- **Billing Address** – The billing address of the user
- **Profession** – User's profession
- **Institution** – The name of the institution
- **Phone** – Phone number of the user
- **Mobile** – Mobile number of the user
- **Fax** – Fax number of the user
- **User Type** – The type of the user(Admin/User)
- **User Block** – Options provided for blocking a user. By default the status of an user is not blocked
- **Save User** – Button provided to store the data into the database
- **Cancel** – Button provided to discard the changes done

Hitting the 'Save User' button will save the data into the database.

3.2 VIEW ORDER STATUS (CURRENT)

To view the current order status , the admin can access the 'Order manager' by hovering over the 'Order Operation' menu, then 'View Order Status' and on selecting the 'Current' option which will display the following screen (fig no. 3.5)

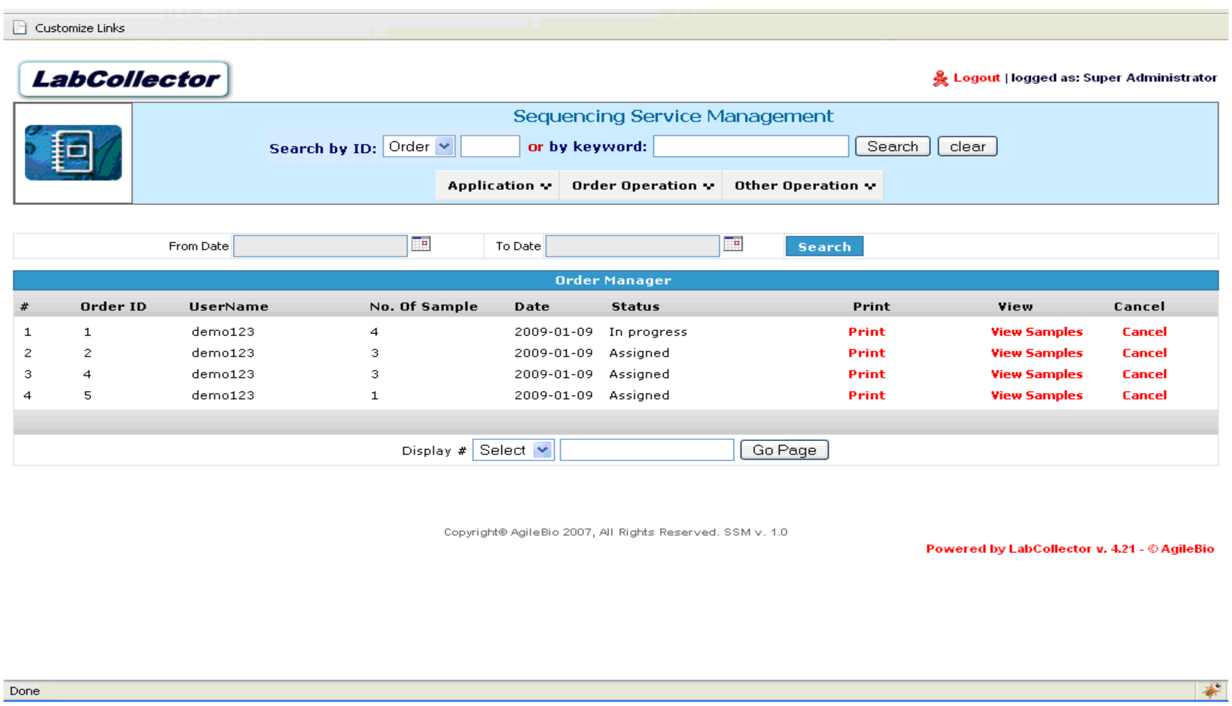


Fig No. 3.5 (Order manager)

This screen will display the following information:

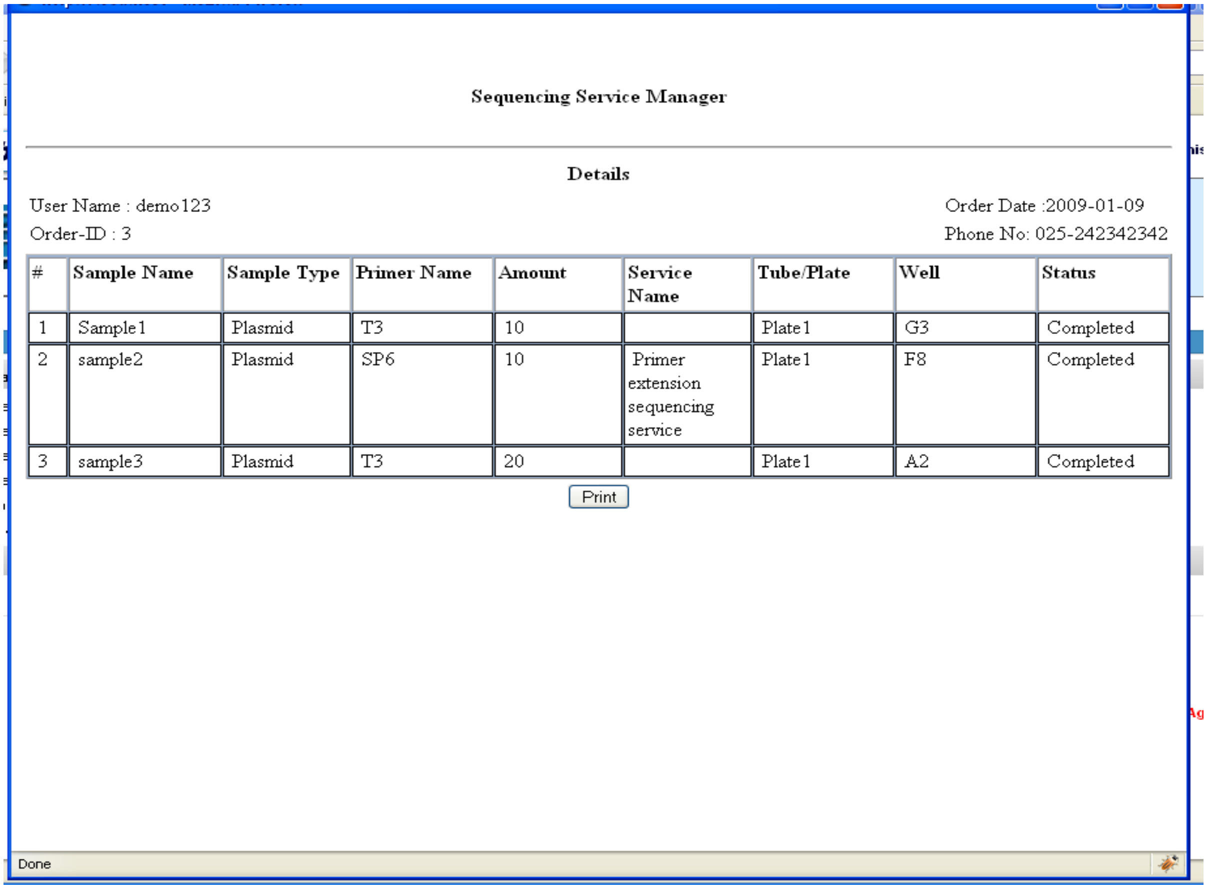
- **Order Id** – The order ID number, it is auto incremented

- **User Name** – The name of user who submitted the order
- **Number of samples** – The number samples inside the order
- **Order date** – Date on which the order was submitted
- **Print** – This is used to print the sample details with plate/tube and well information of an individual order. Refer below for the details.
- **View**- To view the details of samples , Refer below for the details
- **Cancel** – Button provided for canceling the order. This is functional only if the order status is assigned

Print

By clicking on the 'Print' link will display a screen which contains the sample details with plate/tube and well information of an individual order (fig no 3.6). This screen has the following details:

- **User Name** – The name of the user who has placed the particular order
- **Order ID** – Order ID
- **Order Date** – The date on which the order was submitted
- **Phone No** – The phone number
- **Sample Name** – The name of the sample
- **Sample Type** – The sample type name
- **Primer Name** – The primer name
- **Amount** – The amount of the sample
- **Service name** – The name of the service for a particular sample
- **Tube /Plate** – The name of plate or tube
- **Well** – The well position, if the plate is used
- **Status** – Status of the sample
- **Print** –Print button provided to print the details present on the screen



Sequencing Service Manager

Details

User Name : demo123 | Order Date :2009-01-09
Order-ID : 3 | Phone No: 025-242342342

#	Sample Name	Sample Type	Primer Name	Amount	Service Name	Tube/Plate	Well	Status
1	Sample1	Plasmid	T3	10		Plate1	G3	Completed
2	sample2	Plasmid	SP6	10	Primer extension sequencing service	Plate1	F8	Completed
3	sample3	Plasmid	T3	20		Plate1	A2	Completed

Print

Done

Fig No. 3.6 (Print)

View

By clicking on the 'View Samples' link under 'View' column the application will display the 'Order Sample manager' screen, from this screen the admin will be able to view the list of the samples as well as the details of the sample(s) of an individual order (fig. no.3.7).

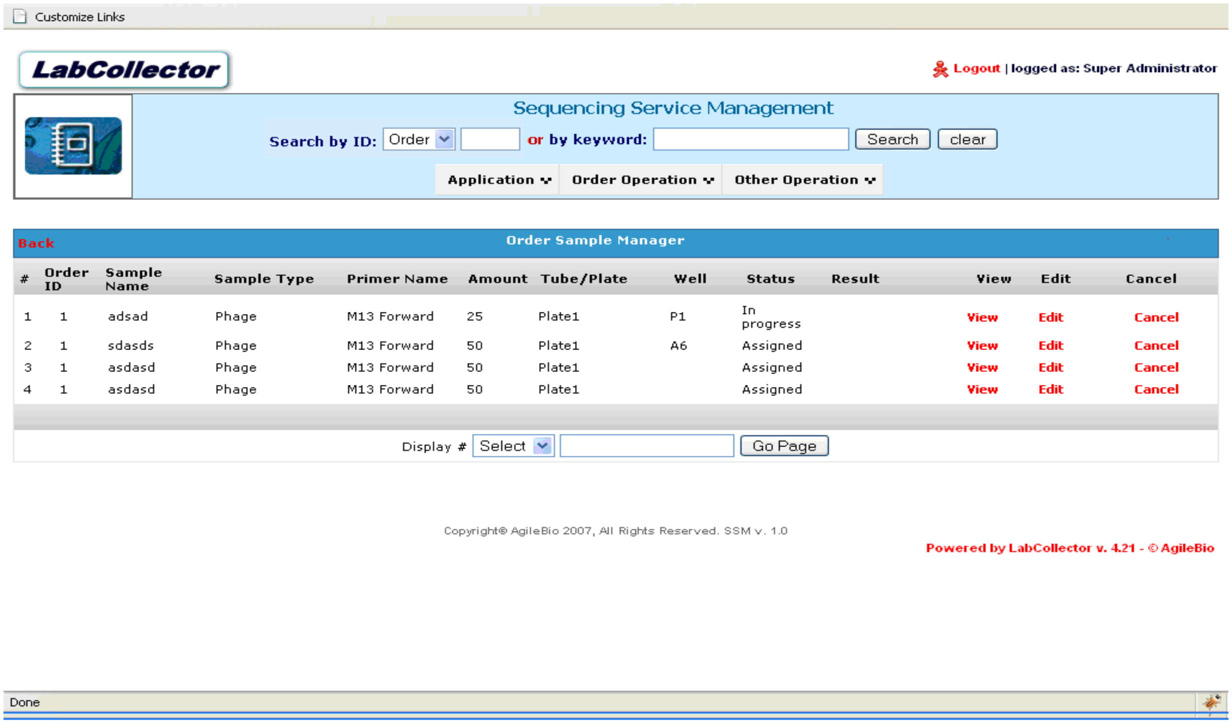


Fig No. 3.7(Order Sample Manager)

The screen provides the following details:

- **Order Id** – Order id
- **Sample name** – The name of the sample
- **Sample type** – The sample type
- **Primer name** – The primer name
- **Amount** – The amount of the sample
- **Size** – The size/ length of the sample
- **Tube or Plate** – Name of tube or plate
- **Well** – The well position if well is selected
- **Status** – The status of the sample
- **Result** – The result file will be displayed if a result file has been uploaded; and by clicking on the link, admin can download the result file.
- **View** – A link provided to view the details. Refer below for the details
- **Edit** – A link provided to edit the sample information. Refer below for the details
- **Cancel** – A link provided to cancel (delete) the sample, provided the status is 'Assigned'.

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By clicking on the 'Edit' link admin will be able to get the 'Sequencing Service Order Form' for an individual sample (fig no 3.8).

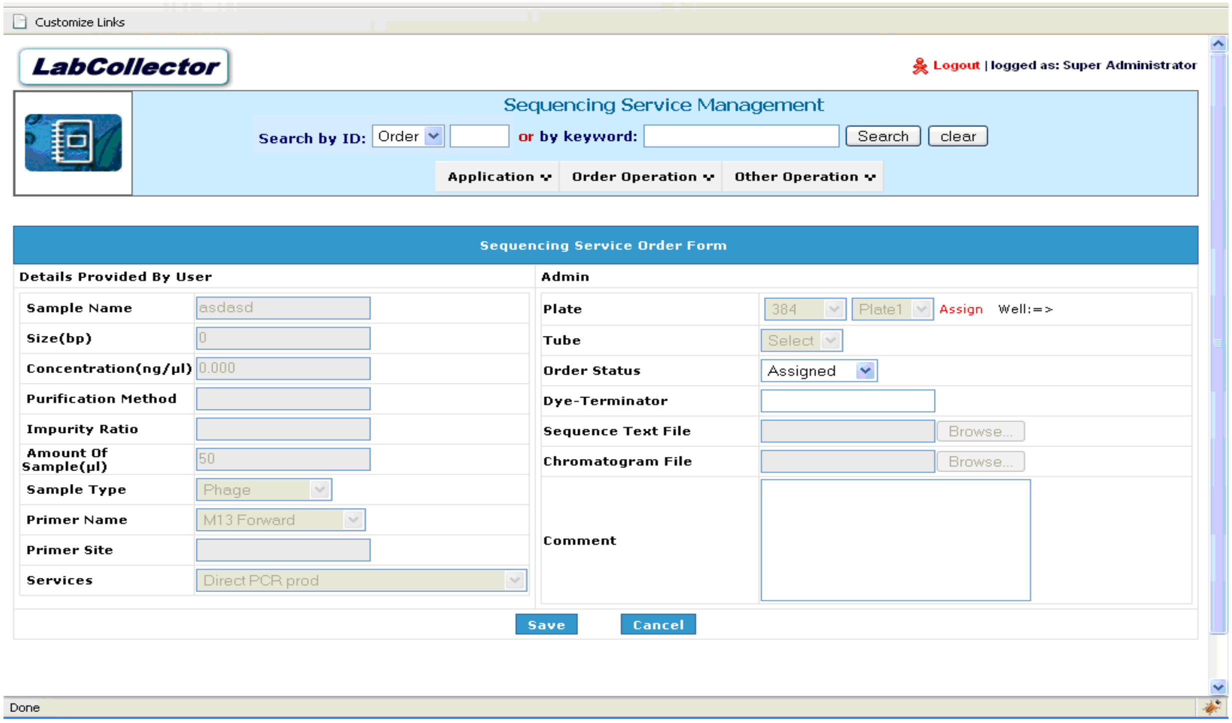


Fig 3.8 (Edit Order)

The admin can fill the following information for the sample:

- **Plate** – Select Plate type, Plate name and well position for the sample
- **Assign** – Link is provided to assign the well to the sample, refer below for details.
- **Tube** – Tube name for the sample
- **Order Status** – Admin will able to change the order status
- **Dye-Terminator** – Dye- terminator provided by the admin
- **Sequence Text file** – To upload sequence result file if result generated
- **Chromatogram file** – To upload chromatogram if result generated
- **Comment** – To put some comment
- **Save** – To save the modification
- **Cancel** – To discard the changes

By hitting on the save button admin can save the changes to the data base. If result files have been uploaded, the status of the sample will changed to completed.

By clicking on the 'Assign' link provided in the 'Sequencing Service Order Form' application provides the following screen (fig no 3.9)

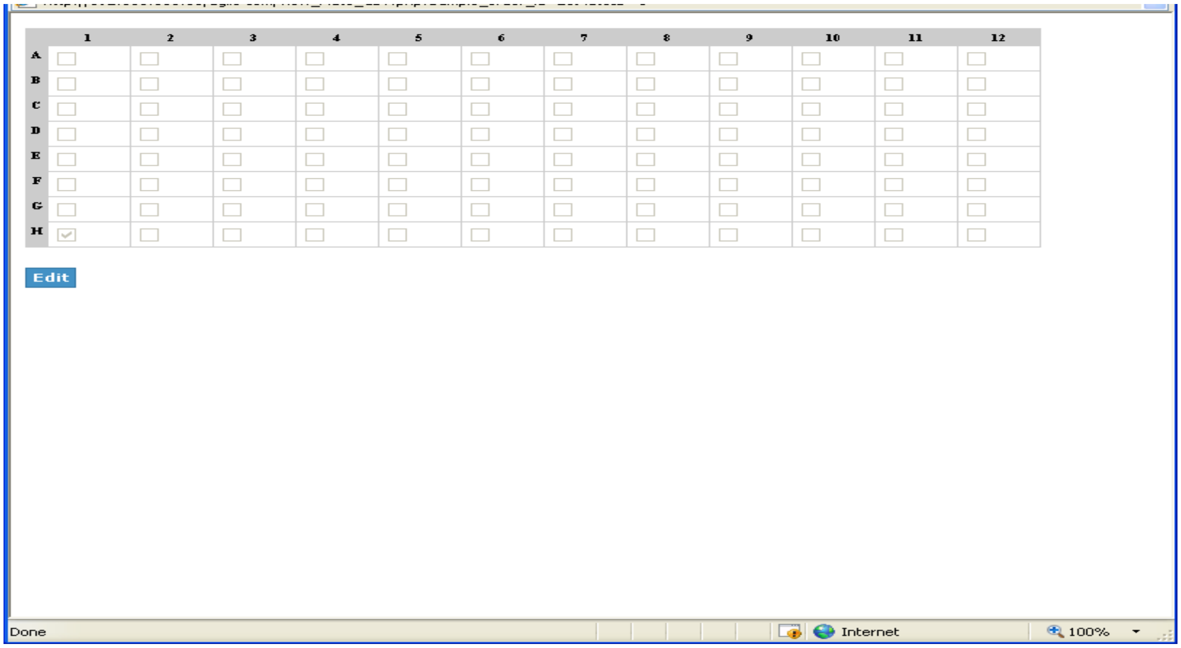


Fig no 3.9 (well in the plate)

This screen displays the entire well in side the plate. By clicking on the 'edit' button admin will get following screen (fig no 3.10)

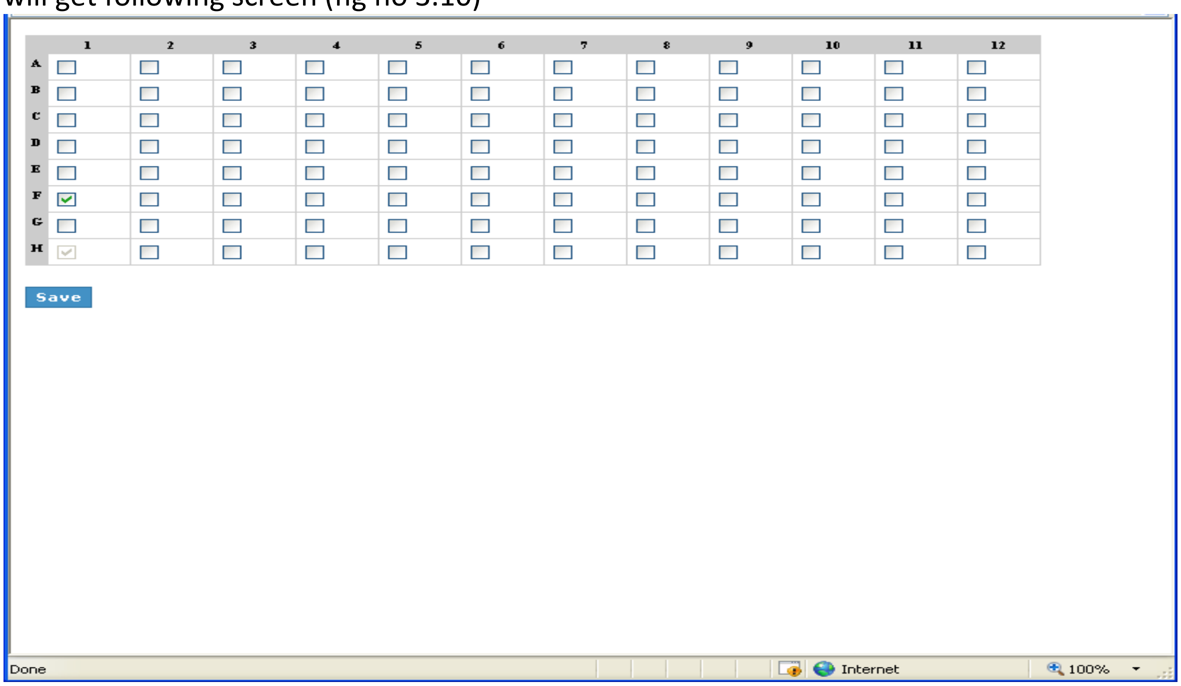


Fig no 3.10 (Assign well of Plate)

The admin can assign the well, by selecting the check box. Hitting the save button the well will be assign to the sample.

By clicking on the ‘view’ link, the admin will be able to view the details of the sample (fig 3.11).

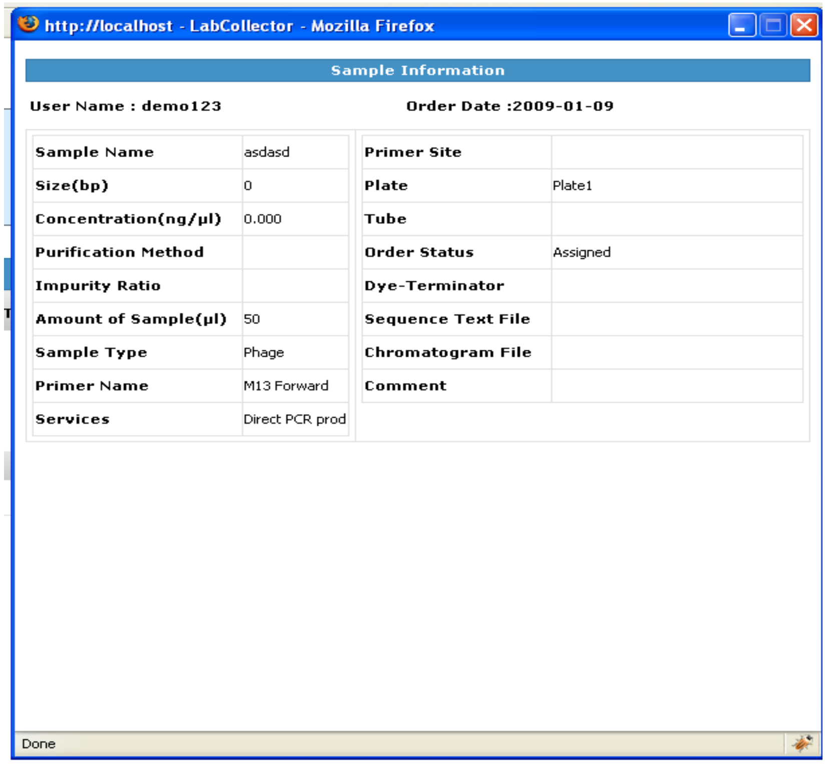


Fig 3.11 (Sample Information)

Admin will be able to view all the information associated with a sample. Following are the information added by the admin:

- **Plate** – The name of the plate
- **Tube** – The name of the tube
- **Order Status** – The order status
- **Dye terminator** – The name of the dye terminator
- **Sequence Text file** – The name of the sequence result file
- **Chromatogram file** – The name of the chromatogram file
- **Comment** - Comment

3.3 VIEW ORDER STATUS (ARCHIVED)

The orders which are older than 6 month and have the status as 'completed' will be archived. To view the archived order, the user can access the 'Order Manager' by hovering over the 'Order Operation' menu, select the 'View Order Status' option and on selecting the 'Archived' option will display the following screen (fig no. 3.12).

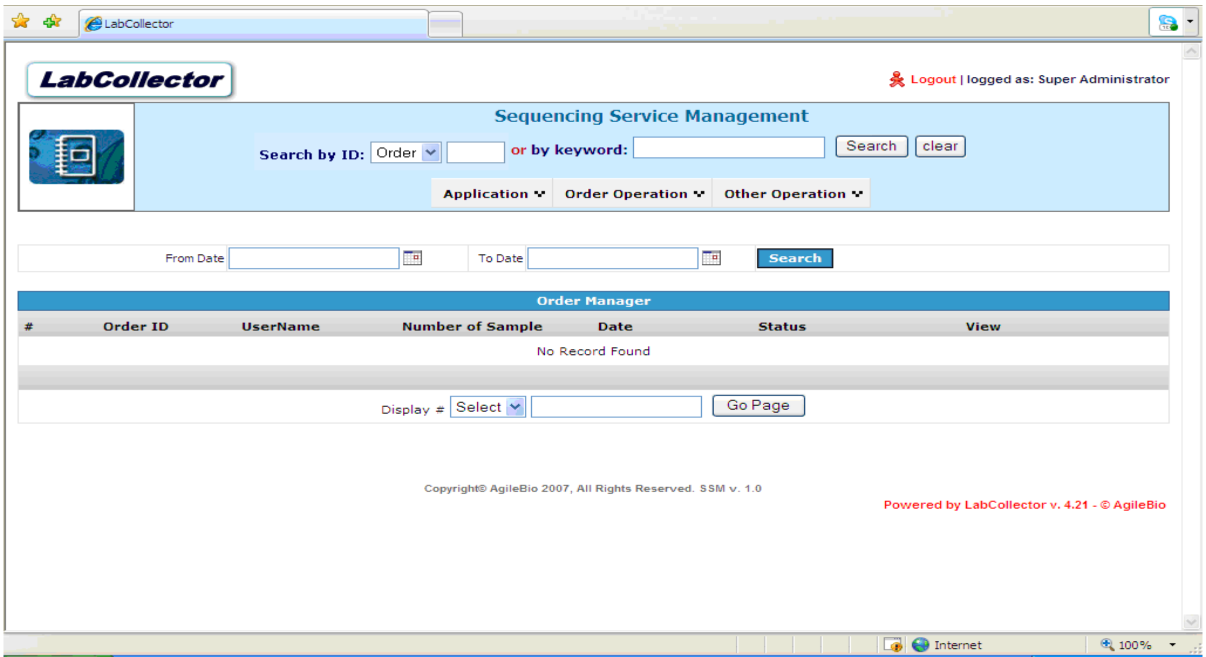


Fig 3.12 (Archived order)

This screen has the following fields:

- **Order ID** – The id of an order, it is an auto incremented number
- **User Name** – The name of the user who has submitted the order
- **Number of Samples** – The total number of samples inside the order
- **Date** – The date on which the order was submitted
- **Status** – The status of the order
- **View** – By clicking on the link under this column, admin will be able to navigate to the 'Order Sample Manager' for the details of the samples.
- **Search** – To search for an order belonging to a specific date range

Whenever the screen opens up for the first time, it will display 'No Record Found', when the user selects the required date range and clicks on the search button, all the completed order of the given date range will be displayed. If the user does not enter the 'To Date', by default the application will search for all the archived order from the 'From Date' provided by the user till the current date.

3.4 RESULT

To view the results, the admin can access the ‘Result Order Manager’ by hovering over the ‘Order Operation’ menu, and on selecting the ‘Result’ option will display the following screen (fig no. 3.13). All the completed result will be listed in this screen.

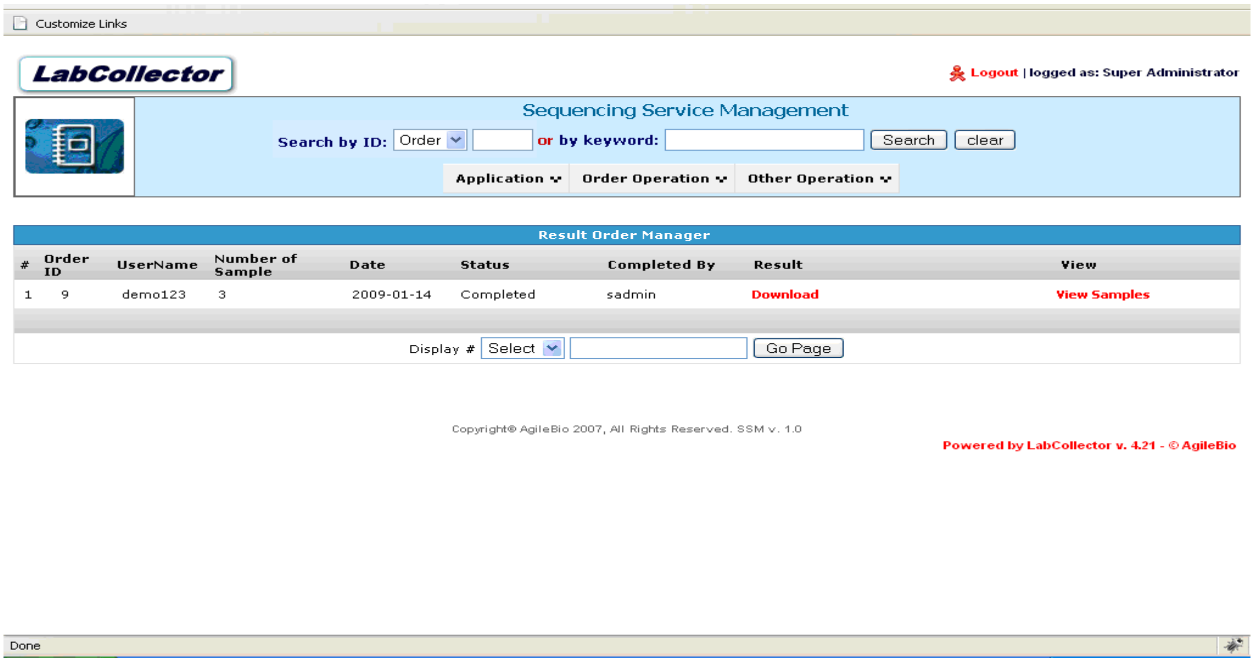


Fig No 3.13 (Result Manager)

This screen displays the following information:

- **Order-ID** – An auto incremented id for order numbering
- **User name** – The name of user who has placed the order
- **Number of Samples** – The total number of samples in an individual order
- **Date** – The date on which the order was submitted
- **Status** – The status of the order
- **Completed By** – The name of admin who has completed the order
- **Result** – By clicking on the link ‘Download’ in the result column, the admin can download the result in zip format.
- **View** – To view the details of the samples of an individual order.

Admin can download all the result file of an individual order in zip format; by clicking on the ‘Download’ link under the ‘Result’ column.

View

By clicking on ‘View Samples’ link under the ‘View’ column, the admin user can navigate to the ‘Order Sample Manager’ (fig no 3.14) of an individual order; The admin can view the list of samples as well as the details of the sample(s) which includes the result files of an individual sample. The admin can also download the result files of an individual sample.

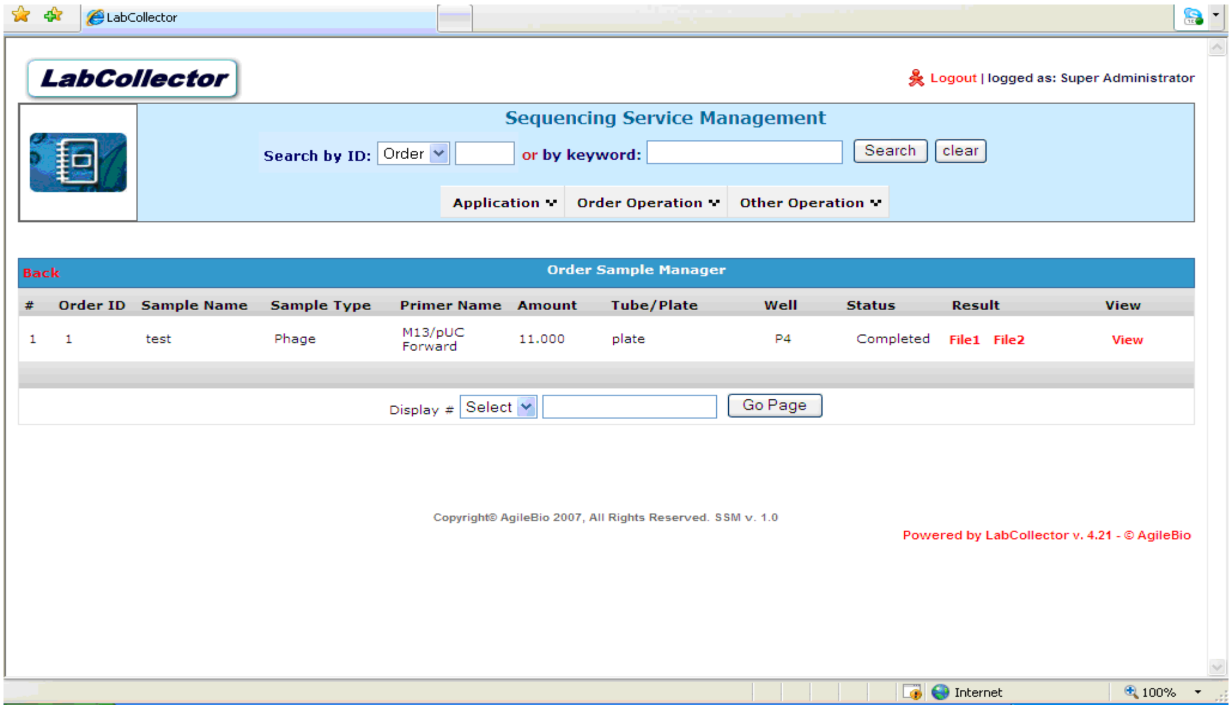


Fig no 3.14 (Order Sample Manager)

3.5 PRIMER

To add the generic primer, the admin can access the 'Add Primer' by hovering over the 'Other Operation' menu, select the 'Primer' option and on selecting the 'Add' option will display the following screen (fig no. 3.15). These generic primers will be visible to all the users.

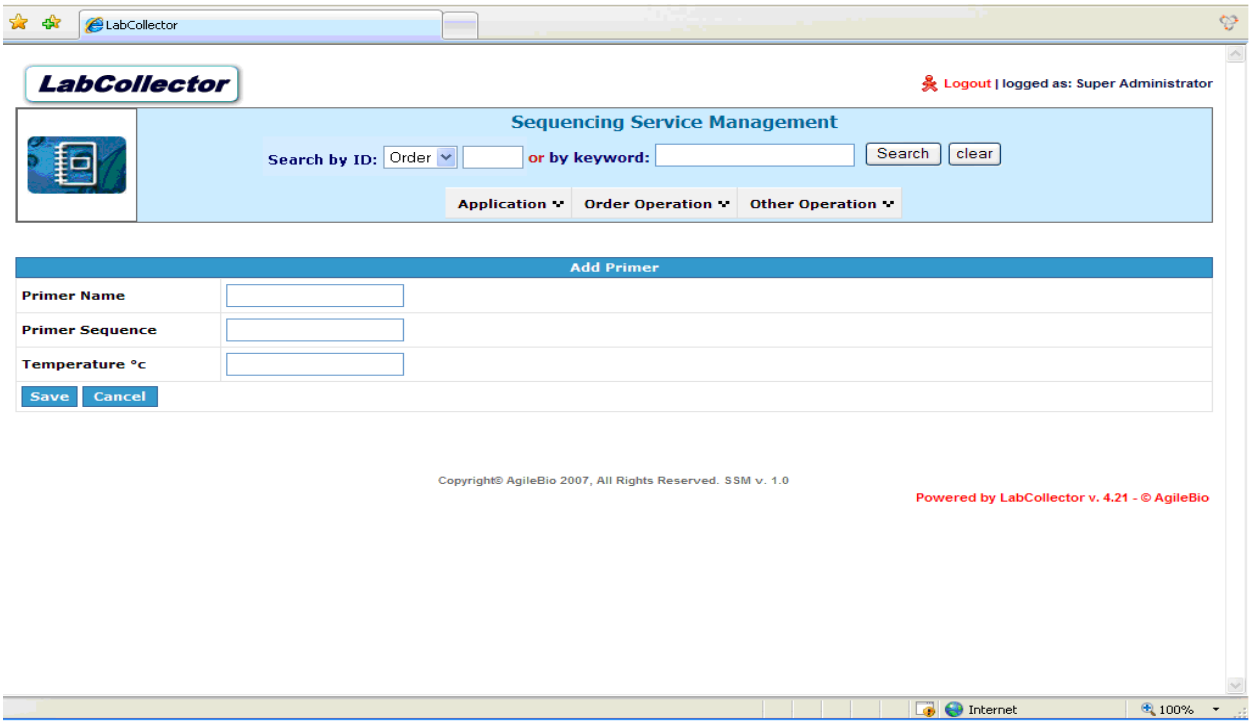


Fig No 3.15 (Add Primer)

The details to be filled in the 'Add Primer' screen are as follows:

- **Primer Name** – The name of the generic primer
- **Primer Sequence** – The sequence of the generic primer
- **Temperature** – The melting temperature of the generic primer
- **Save** –Button provided to save the primer information
- **Cancel** – Button provided to cancel the operation

By hitting on the 'Save' button the admin can save the generic primer information in the database. Duplicate generic primers cannot be added.

To view the generic primer, the admin can access the 'Primer Manager' by hovering over the 'Other Operation' menu, select the 'Primer' option and on selecting the 'View' option will display the following screen (fig no. 3.16). This screen displays the list of generic primers added by admin.

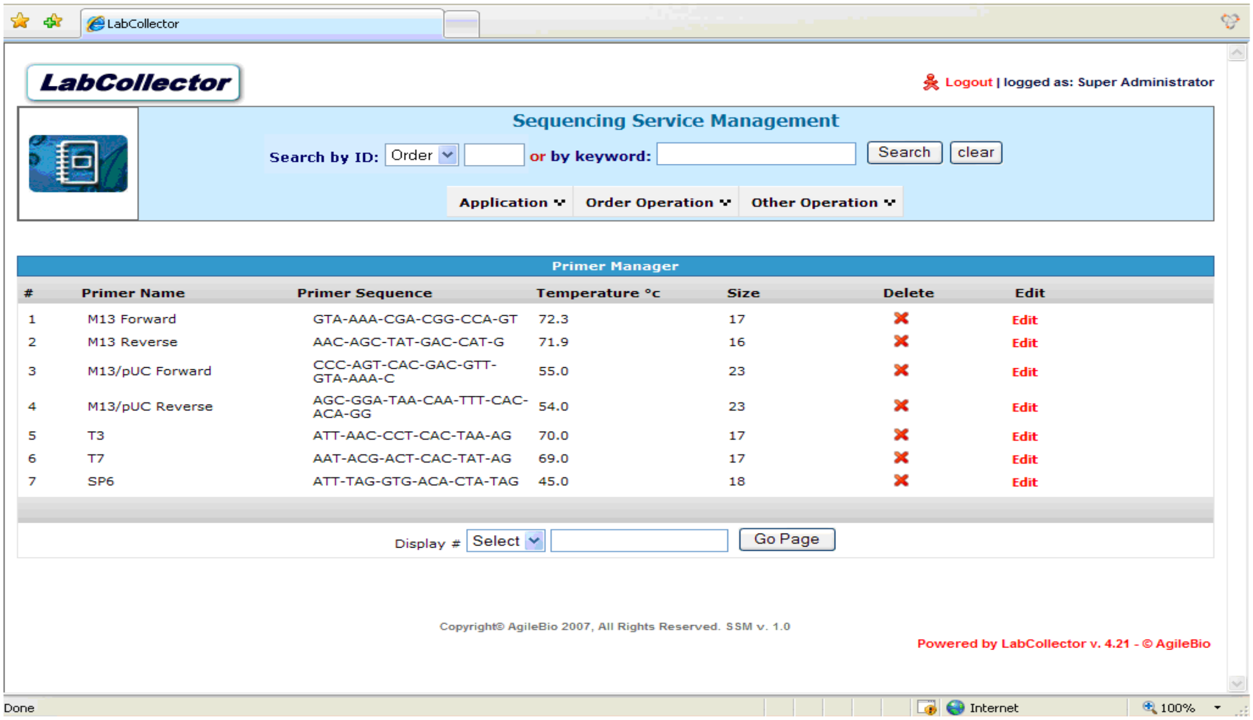


Fig no 3.16 (Primer manager)

'Primer manager' displays following details of generic primers:

- **Primer name** – The name of the generic primer
- **Primer Sequence** – The sequence of the generic primer
- **Temperature** – The temperature of the generic primer
- **Size** – The size (length) of the generic the primer sequence
- **Delete** – Icon provided to delete the generic primer from the list (database)
- **Edit** – Link provided to edit the previously entered information, refer below for the details

Edit

By clicking on the edit link admin will go to the ‘Edit Primer’ screen (fig no 3.17).

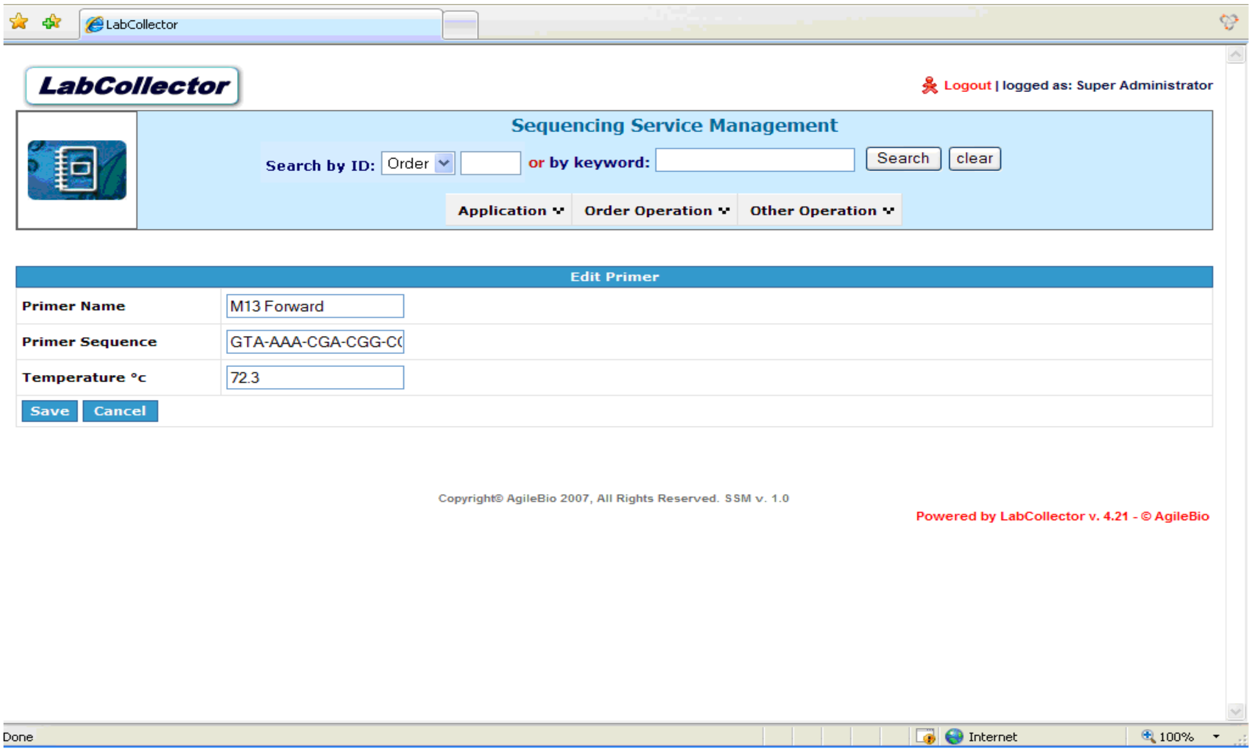


Fig no 3.17 (Edit Primer)

The screen displays the following details

- **Primer Name** – The name of the generic primer
- **Primer Sequence** – The sequence of the generic primer
- **Temperature** – The temperature of the generic primer
- **Save** – Button provided to save the modifications
- **Cancel** – Button provide to discard the changes

By hitting on save button, the admin can save the modifications tothe database.

3.6 STANDARD SERVICES

To add a standard service, the admin can access the ‘Add Standard Service’ by hovering over the ‘Other Operation’ menu, select the ‘Standard Services’ option and on selecting the ‘Add’ option will display the following screen (fig no. 3.18). These services will be visible to all the users.

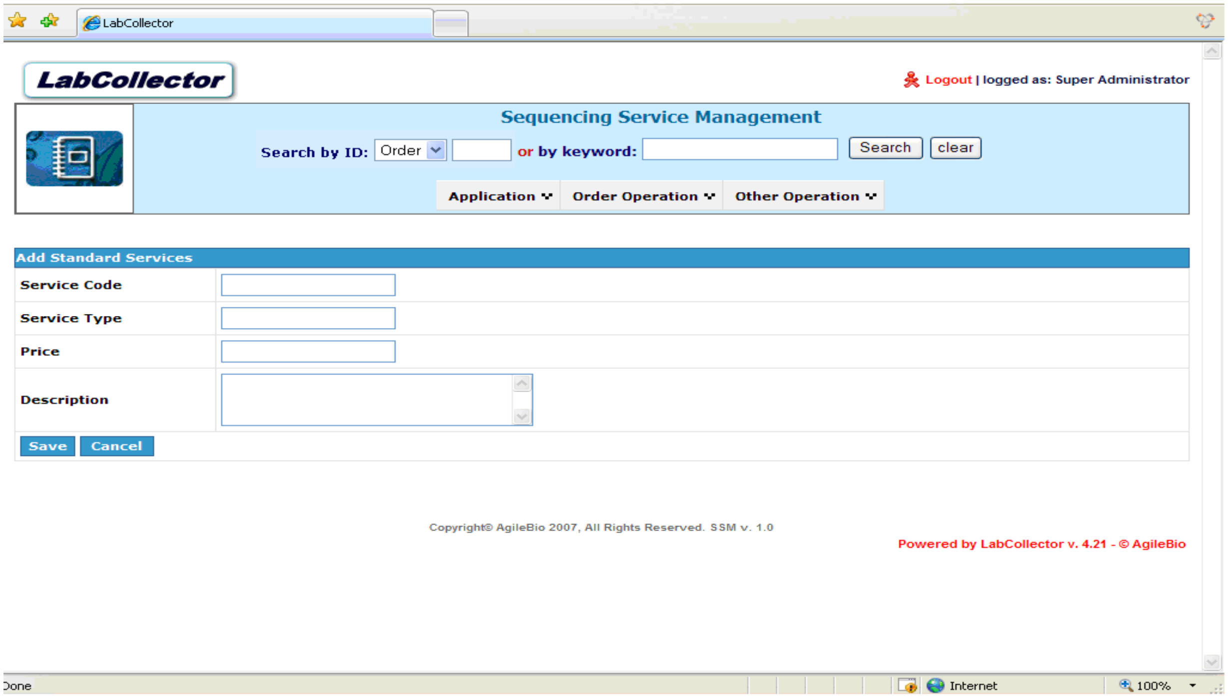


Fig no 3.18 (Add Standard Service)

This screen displays the following fields:

- **Service Code** – The name of the service code
- **Service Type** – The type of service
- **Price** – The price of the service
- **Description** – The description of the service
- **Save** – Button provided to save the service
- **Cancel** – Button provided to cancel the operation

By hitting on the 'save' button, the admin can save the details of the service to the database.

To **view** the standard services, the admin can access the 'Service Manager' by hovering over the 'Other Operation' menu, select the 'Standard Services' option and on selecting the 'View' option will display the following screen (fig no. 3.19). This screen displays the list of services added by the admin.

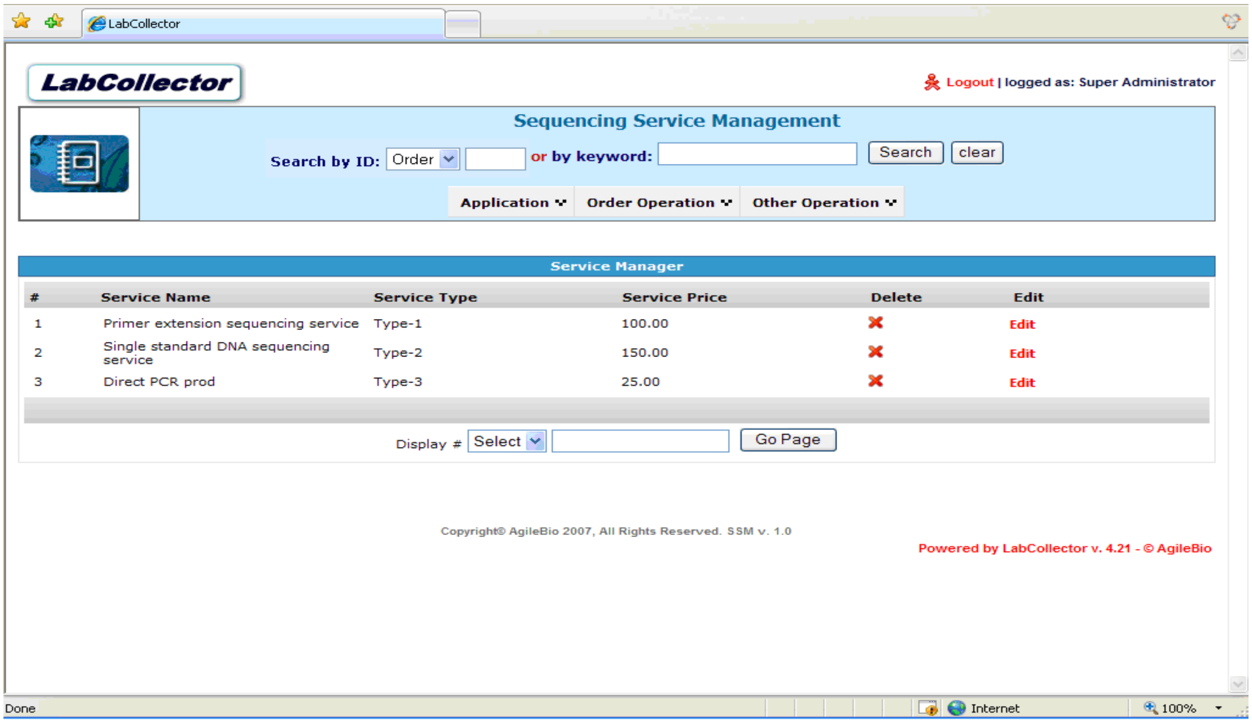


Fig no 3.19 (Service Manager)

The screen displays the following details:

- **Service name** – The name of the standard service
- **Service type** – The name of the service type
- **Service price** – The price of the standard service
- **Delete** – Icon to remove the individual service detail from the list
- **Edit** – Link provided to edit the previous information of service detail is given below.

Edit

By clicking on the 'Edit' link the admin will be able to navigate to the 'Edit Standard Service' (fig no 3.20).

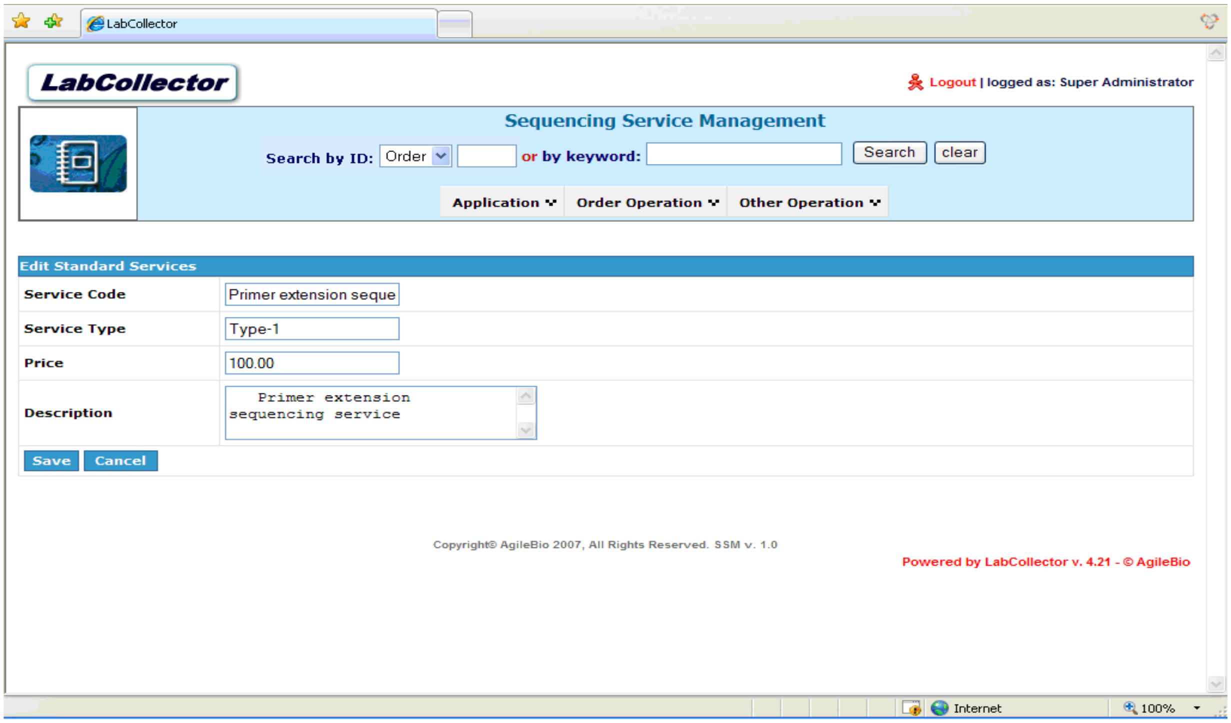


Fig no 3.20 (Edit Service)

Admin can make changes to the previous information of the standard service. By hitting on the 'Save' button modifications will be stored in the database.

3.7 SAMPLE TYPE

To add the sample type, the admin can access the 'Add Sample Type' by hovering over the 'Other Operation' menu, select the option 'Sample type' and on selecting the 'Add' option will display the following screen (fig no. 3.21). These sample types will be visible to all the users

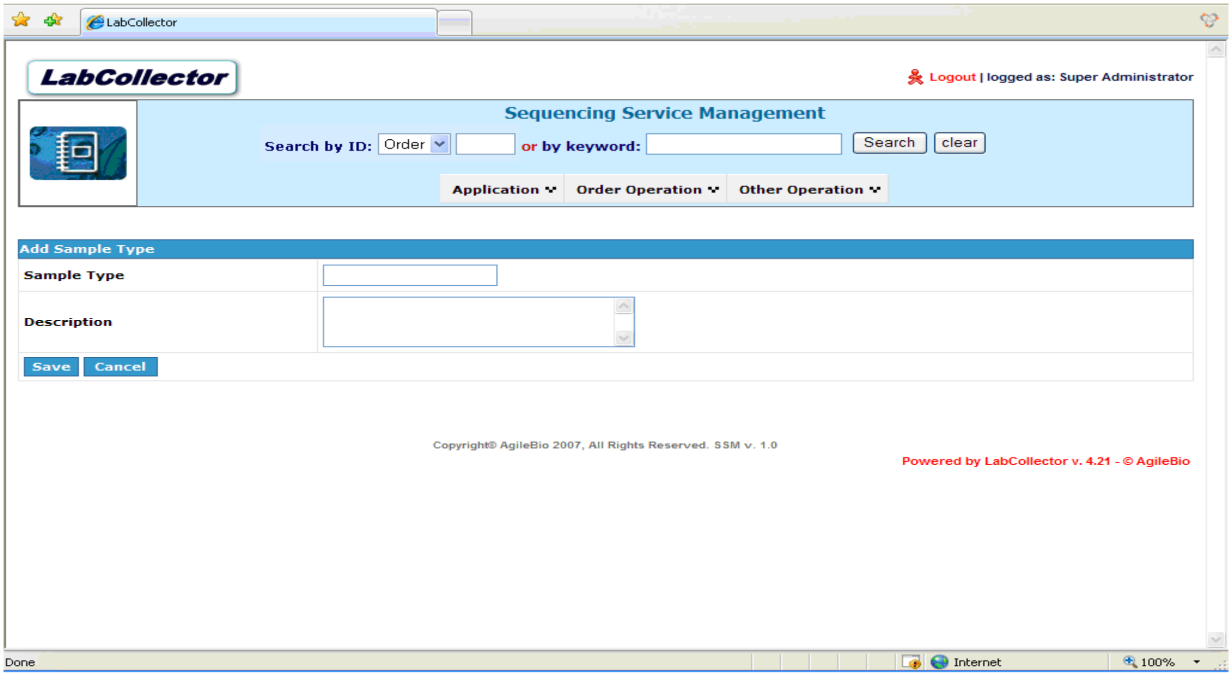


Fig no 3.21 (Add Sample type)

This screen display following information:

- **Sample Type** – The name of the sample type
- **Sample Description** – The description of the Sample type
- **Save** – Button provided to save the information
- **Cancel** – Button provided to cancel the operation

By hitting on the 'save' button, the admin can save the information to the database.

To view the sample type, the admin can access the 'Sample Type Manager' by hovering over the 'Other Operation' menu, select the 'Sample Type' option and on selecting the 'View' option will display the following screen (fig no. 3.22). This screen displays the list of Sample type added by admin.

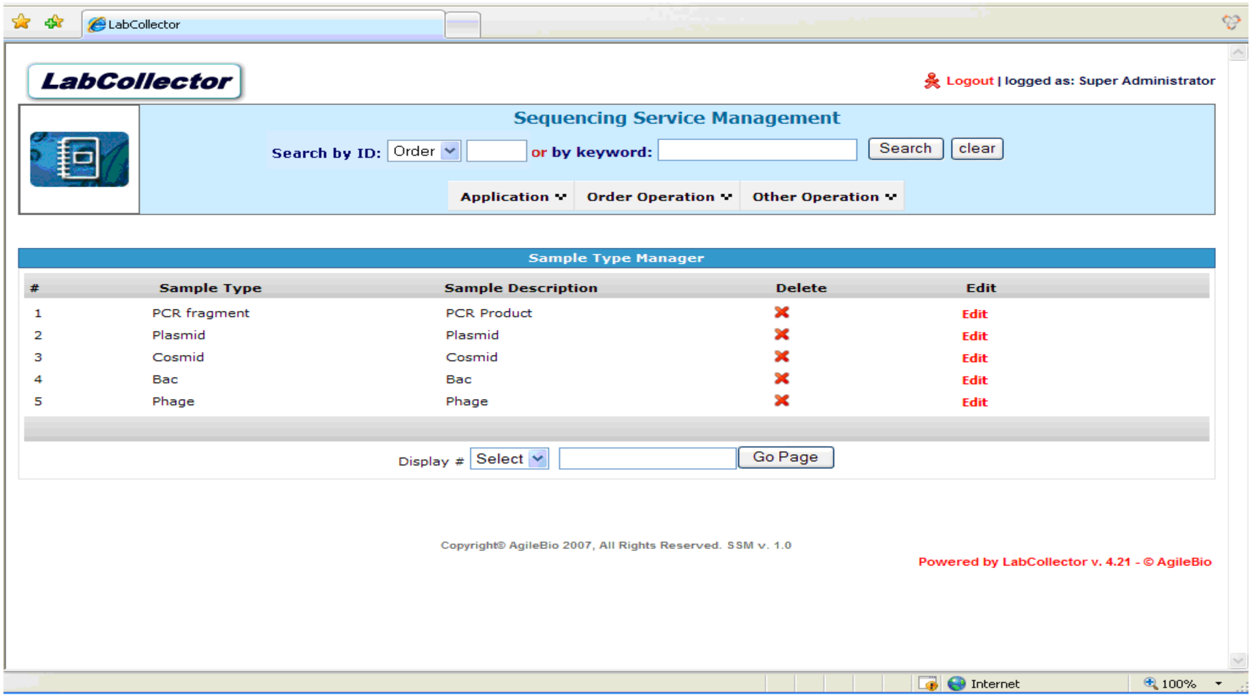


Fig no 3.22 (Sample Type Manager)

. The screen displays the following details:

- **Sample Type** – The name of the sample
- **Sample Description** – The description of the sample
- **Delete** – Icon provided to delete the individual sample type information from the list
- **Edit** – Link provided to modify the previously added information of the individual service, refer below for the details.

Edit

By clicking on ‘Edit’ link admin will able to go ‘Edit Sample Type’ (fig. 3.23).

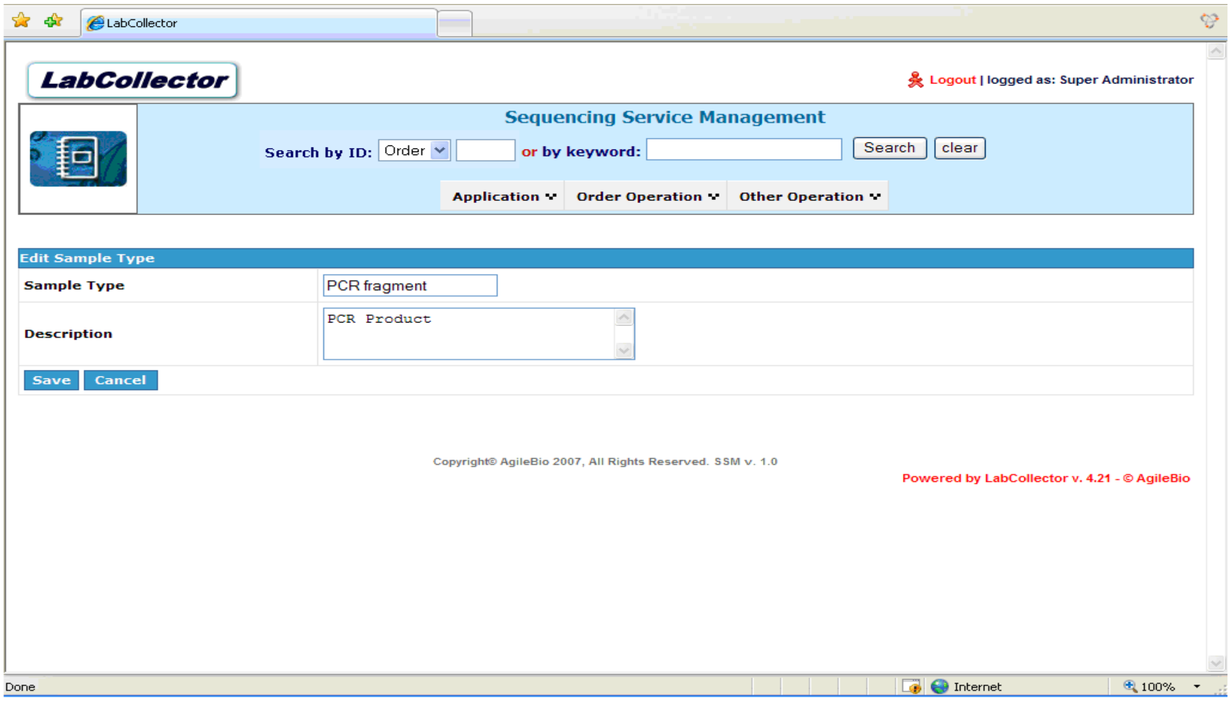


Fig no 3.23 (Edit Sample type)

The screen displays the following fields:

- **Sample type** – Name of the sample type
- **Description** – Description of the sample type
- **Save** – Button provided to save the changes
- **Cancel** – Button provided to cancel the operation

Admin can make the modifications and on hitting the ‘save’ button can save the modifications to the database.

3.8 PLATE

To add the plate, the admin can access the 'Add Plate' by hovering over the 'Other Operation' menu, select the option 'Plate' and on selecting the 'Add' option will display the following screen (fig no. 3.24). These plates will be visible to all the admin

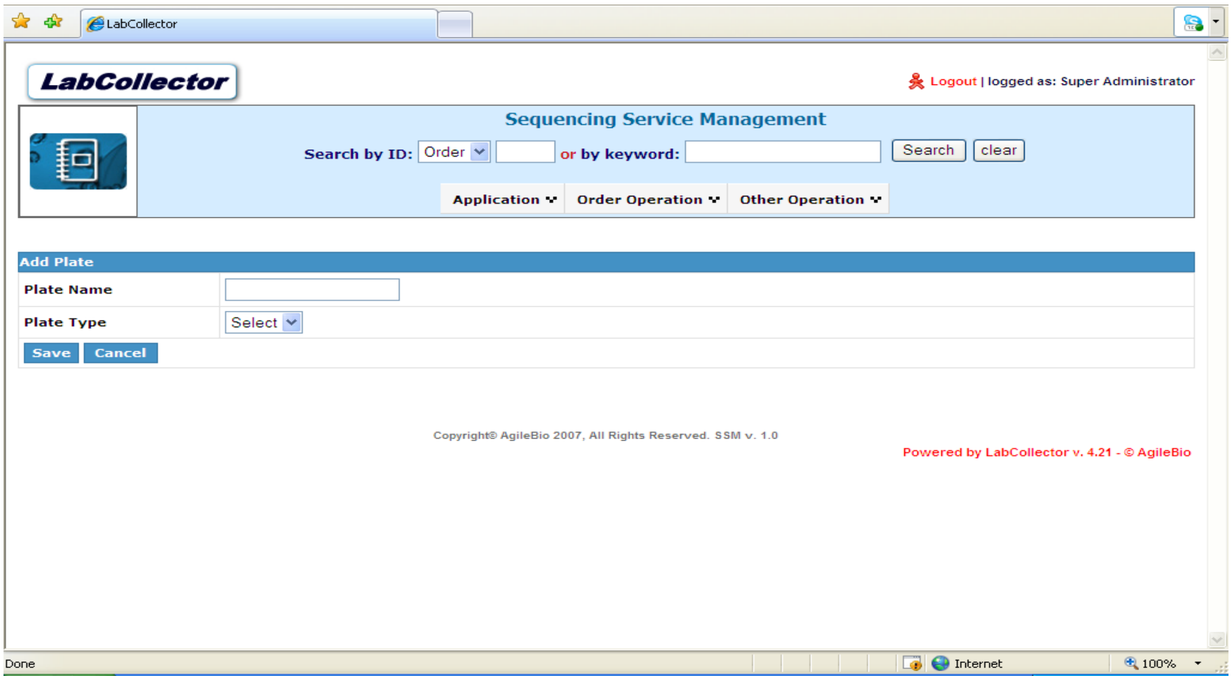


Fig no. 3.24 (Add plate)

The screen displays the following details

- **Plate Name** – The name of the plate
- **Plate Type** – The type of the plate, admin can select the type from the drop down list.
- **Save** – Button is provided to save the information
- **Cancel** – Button is provided to cancel the information

Hitting on the 'save' button the information will be store in the database.

To view the plates, the admin can access the 'Plate Manager' by hovering over the 'Other Operation' menu, select the 'Plate' option and on selecting the 'View' option will display the following screen (fig no. 3.25). This screen displays the list of plate added by admin

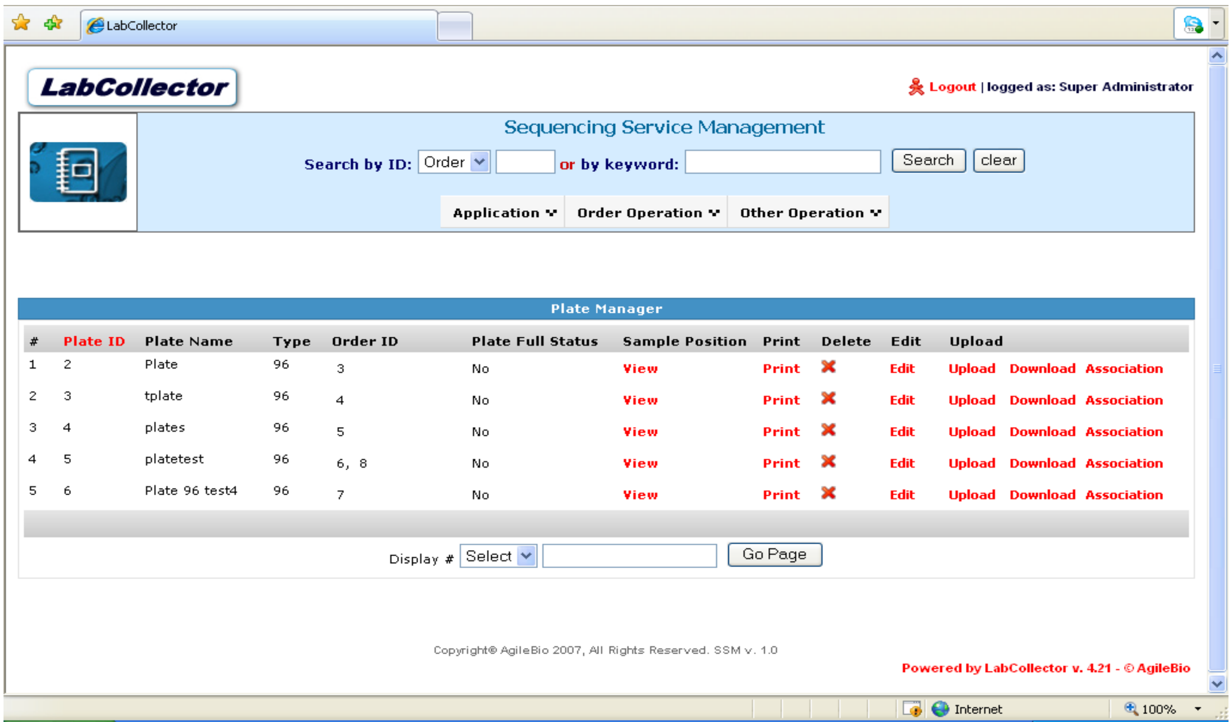


Fig no 3.25 (Plate Manager)

The screen displays the following details

- **Plate id** – The unique identification number provided by the system. A link is provided with the 'Plate Id', admin can sort the list of the plate by clicking on the link.
- **Plate Name** – The name of the plate
- **Type** – The type of the plate
- **Order ID**- The order ids associated with the plate
- **Plate Full Status** – The status of the plate either it is full or not
- **Sample position** – Application provides a link under this column to view the order/sample position in the plate, refer below for details.
- **Print** - This is used to print the sample details with plate/tube and well information of an individual plate. Refer below for the details
- **Delete** – Icon is provides to delete the plate from list if no order is associated with the plate.
- **Edit** – Link is provided to modify the plate information if no order is associated with the plate
- **Upload** – An 'Upload' link is provided under 'Upload' column to upload a zip file of the results against the plate.
- **Download** – Link is provided to download the uploaded zip file
- **Association** – A link is provided to associate the result files present in the uploaded zip, with the sample present in the plate. Refer below for detail.

By clicking on the ‘View’ link provided under the ‘View’ column, the application provides the following screen (fig no 3.26).

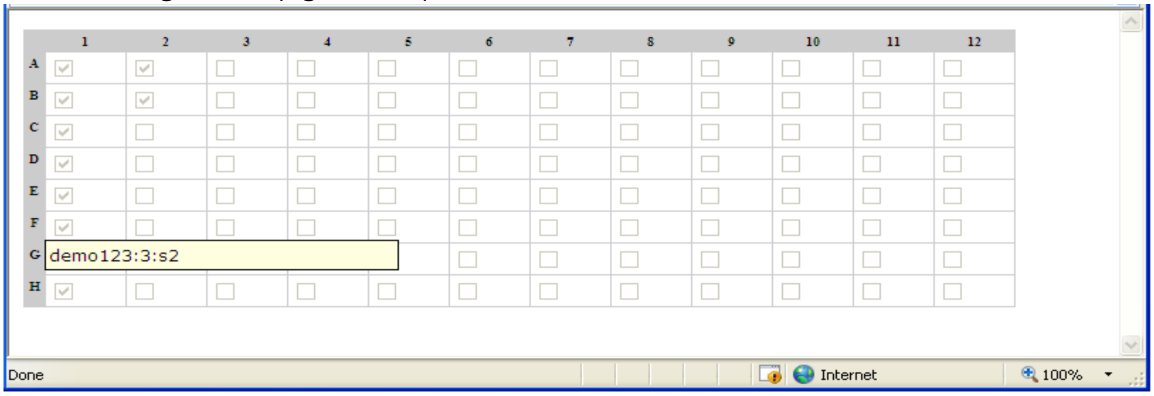
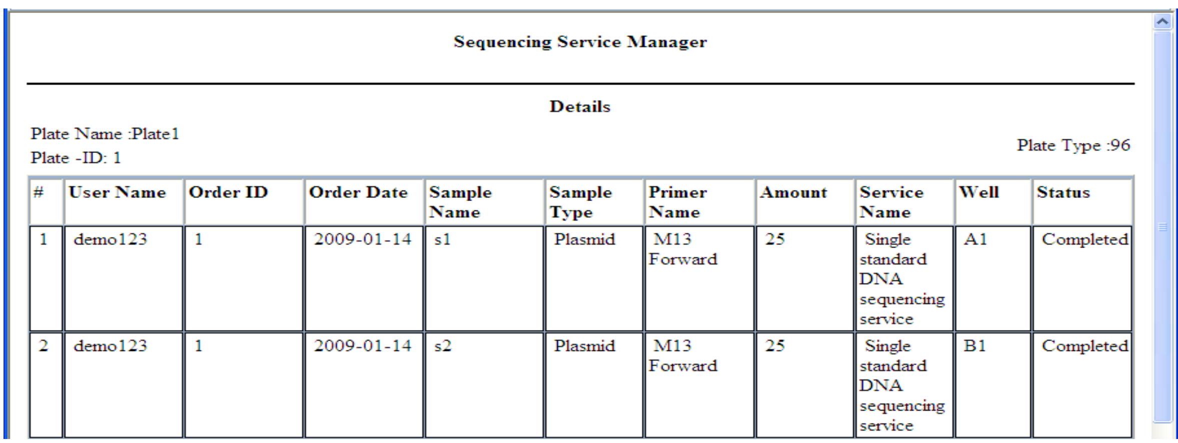


Fig no 3.26 (well with sample information)

In this screen admin will be able to view all the wells of the plate with the information whether they are filled or not. By hovering over any block of the well, the admin will be able to see the user name, order id and sample name separated by a colon (:).

By clicking on the ‘Print’ link provided under the column ‘Print’, the application provides a following screen (fig no 3.27).



Sequencing Service Manager

Details

Plate Name :Plate1
Plate -ID: 1
Plate Type :96

#	User Name	Order ID	Order Date	Sample Name	Sample Type	Primer Name	Amount	Service Name	Well	Status
1	demo123	1	2009-01-14	s1	Plasmid	M13 Forward	25	Single standard DNA sequencing service	A1	Completed
2	demo123	1	2009-01-14	s2	Plasmid	M13 Forward	25	Single standard DNA sequencing service	B1	Completed

Fig no 3.27 (Print)

This screen contains the sample details with plate/tube and well information of an individual plate. By clicking on the print button the admin will be able to print the information present on the screen.

By clicking on the ‘Association’ link, application provides following screen (fig no 3.28). This screen facilitates the admin to associate the result files with the respective sample and the order id.

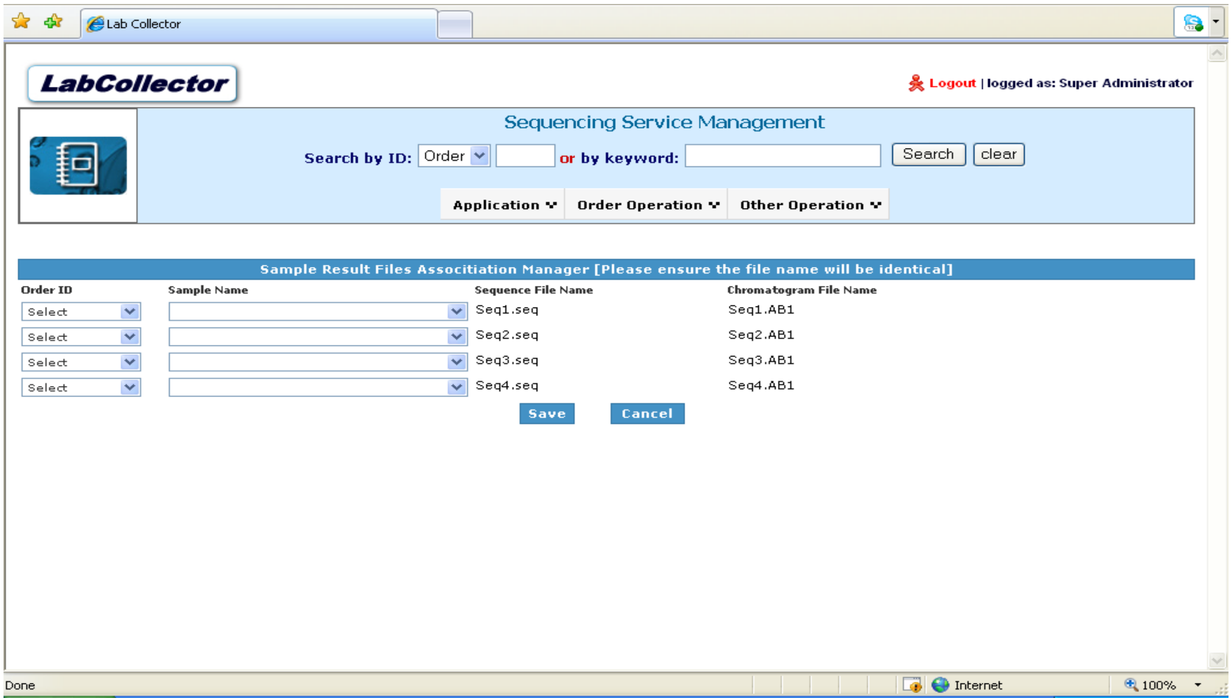


Fig no 3.28 (Association)

This screen displays following information

- **Order ID** – Admin can select the order id from the drop down
- **Sample name** – Admin can select the sample name from the drop down list
- **Sequence file Name** – The list of the name of the sequence files present in side the zip uploaded by the admin
- **Chromatogram File Name** – The list of the name of the chromatogram files present in side the zip uploaded by the admin

Admin can select the order id and sample name against the files. Hitting on the 'save' button the information will store in the database. If both the files (sequence and chromatogram) has been uploaded from this screen the 'status' of the sample will be

3.9 TUBE

To add the tube, the admin can access the 'Add Tube' by hovering over the 'Other Operation' menu, select the 'Tubes' option and on selecting the 'Add' option will display the following screen (fig no. 3.29).

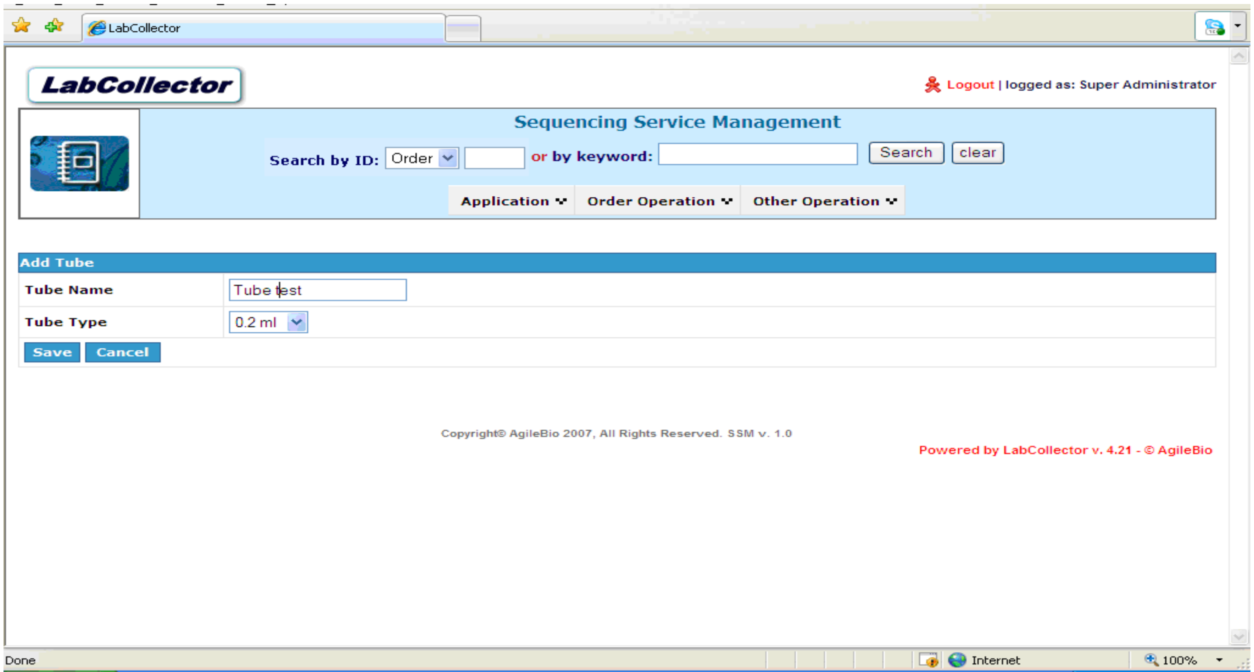


Fig no 3.29 (Add Tube)

This screen displays the following information:

- **Tube Name** – The name of the tube
- **Tube Type** – The type of the tube
- **Save** – Button provided to save the information
- **Cancel** – Button provided to cancel the operation

By hitting on 'save' button admin can save the information to the database.

To view the tubes, the admin can access the 'Tube Manager' by hovering over the 'Other Operation' menu, select the 'Tubes' option and on selecting the 'View' option will display the following screen (fig no. 3.30). This screen displays the list of the tube added by the admin.

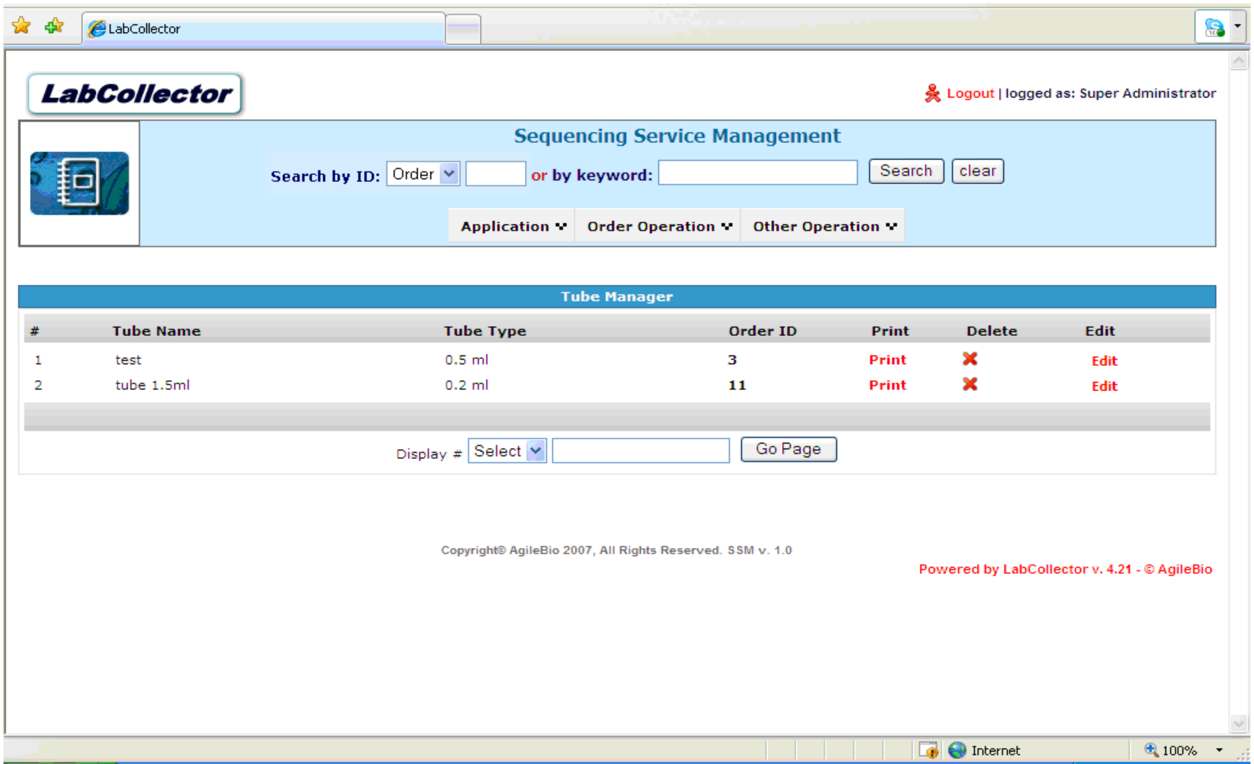


Fig no 3.30 (Tube Manager)

The screen displays the following details:

- **Tube Name** – The name of the tube
- **Tube Type** – The description of the tube
- **Order ID** – The id of the order associated with the individual tube
- **Print** – This is used to print the sample details with the tube information. Refer below for the details.
- **Delete** – To delete the individual tube information from the list, if it not associated with any order
- **Edit** – To modify the previous information of individual if it not associated with any order, detail is given below.

Edit

By clicking on the ‘Edit’ link admin will able to navigate to the ‘Edit Tube’ (fig. 3.31) screen.

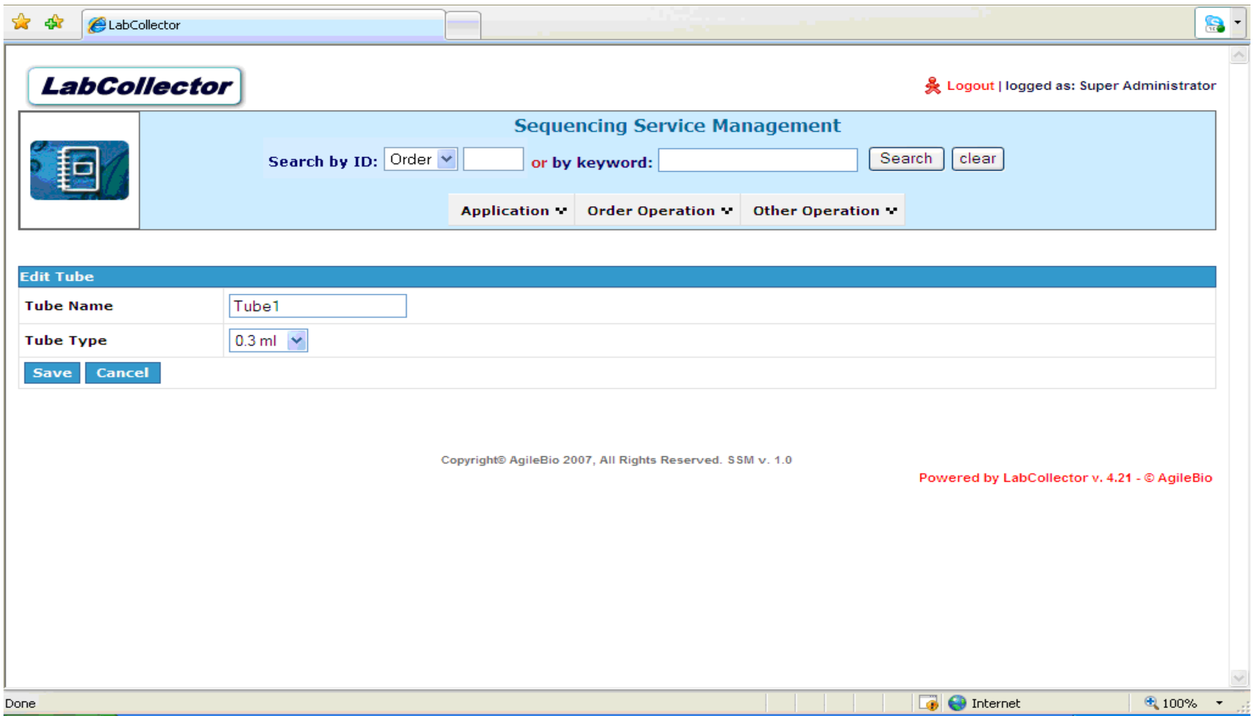


Fig no 3.31 (Edit Tube)

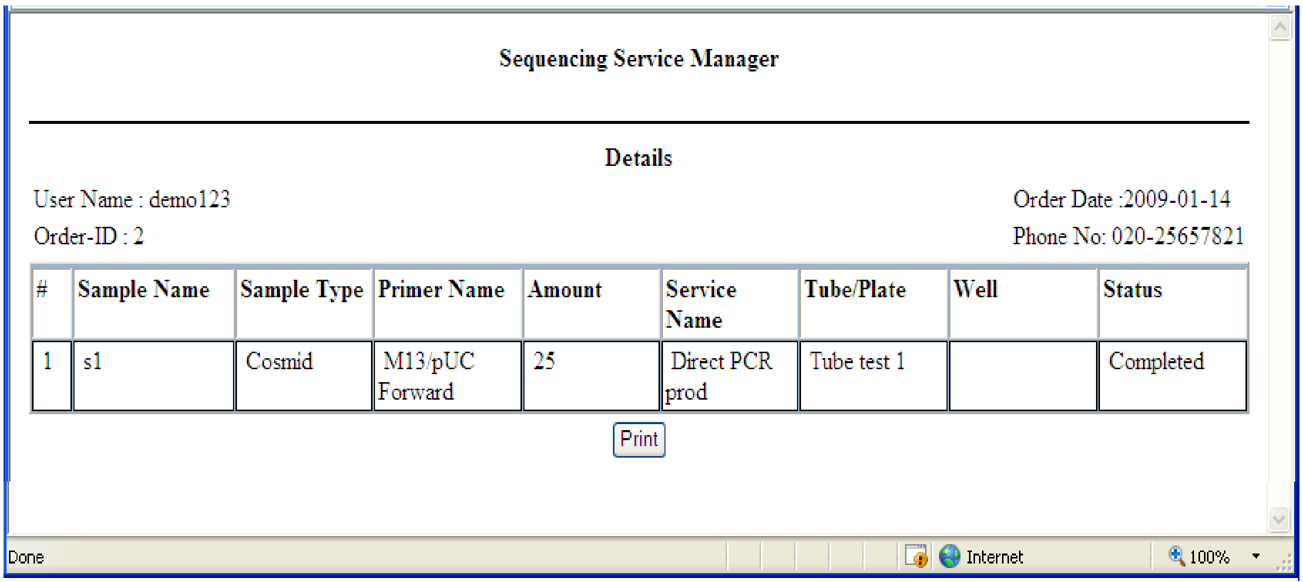
This screen displays the following fields:

- **Tube Name** – Name of the culture tube
- **Tube Type** – The type of culture tube
- **Save** – Button provided to save the changes
- **Cancel** – Button provided to cancel the operation

Admin can do the modifications and by hitting on the ‘save’ button and can save the modification to the database.

Print

By clicking on the ‘Print’ link the application displays the following screen (3.32).



Sequencing Service Manager

Details

User Name : demo123 Order Date :2009-01-14

Order-ID : 2 Phone No: 020-25657821

#	Sample Name	Sample Type	Primer Name	Amount	Service Name	Tube/Plate	Well	Status
1	s1	Cosmid	M13/pUC Forward	25	Direct PCR prod	Tube test 1		Completed

Print

Done Internet 100%

Fig no 3.32 (Print)

This screen has the following details:

- **User name** – The name of the user who placed the order
- **Order id** – The order id of the sample
- **Sample name** – The name of the sample
- **Sample type** – The sample type
- **Service Name** - The service name
- **Tube/plate** – Tube or plate name
- **Status** – The status of the sample
- **Print** – By hitting the print button , the admin will be able to print the details present on the screen

3.10 NAMING CONVENTION

Admin can change the naming convention of the result files (sequence and chromatogram). The names of the result files follow a specific naming convention. These naming conventions depend on the location where the sample is processed, in the plate or tube. This naming convention will be used as the prefix of the generated result files.

To change the naming convention for plate(for the samples which are processed inside the plate), the admin can access the 'Plate Naming Convention [Name prefix will be reflected in result files]' screen by hovering over the 'Other Operation' menu, select the 'Naming Convention' option and on selecting the 'Plate' option will display the following screen (fig no. 3.33)

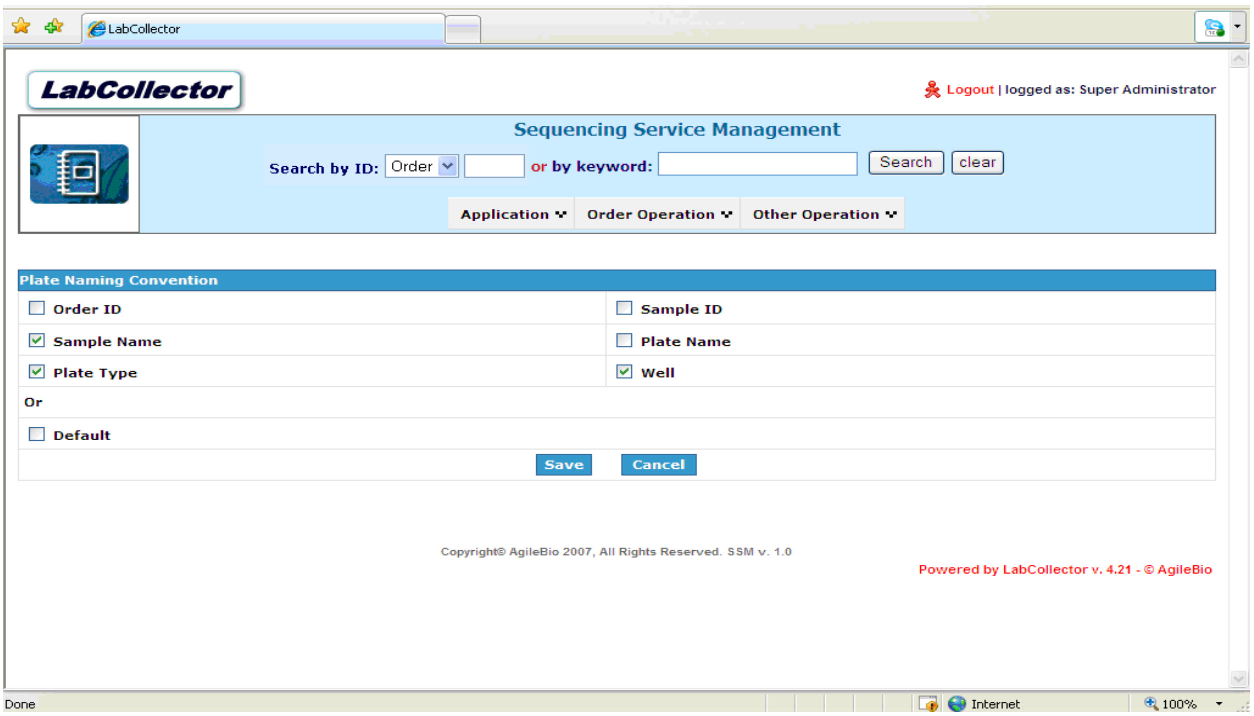


Fig No 3.33 (Plate Naming Convention)

This screen displays the following details

- **Order ID** – A unique identification number provided for an order.
- **Sample ID** – A unique identification number provided for the sample.
- **Sample Name** – The name of the sample
- **Plate name** – The plate name
- **Plate Type** – The plate type
- **Well** – The well position in the plate
- **Default** – A check box provided for selecting the default naming convention
- **Save** – Button provided to save the changes
- **Cancel** – Button provided to cancel the operation

By hitting on the save button admin can save the new naming convention to the database.

To change the naming convention for Tube, the admin can access the 'Tube Naming Convention [Name prefix will be reflected in result files]' by hovering over the 'Other Operation' menu, select the 'Naming Convention' option and on selecting the 'Tube' option will display the following screen (fig no. 3.34)

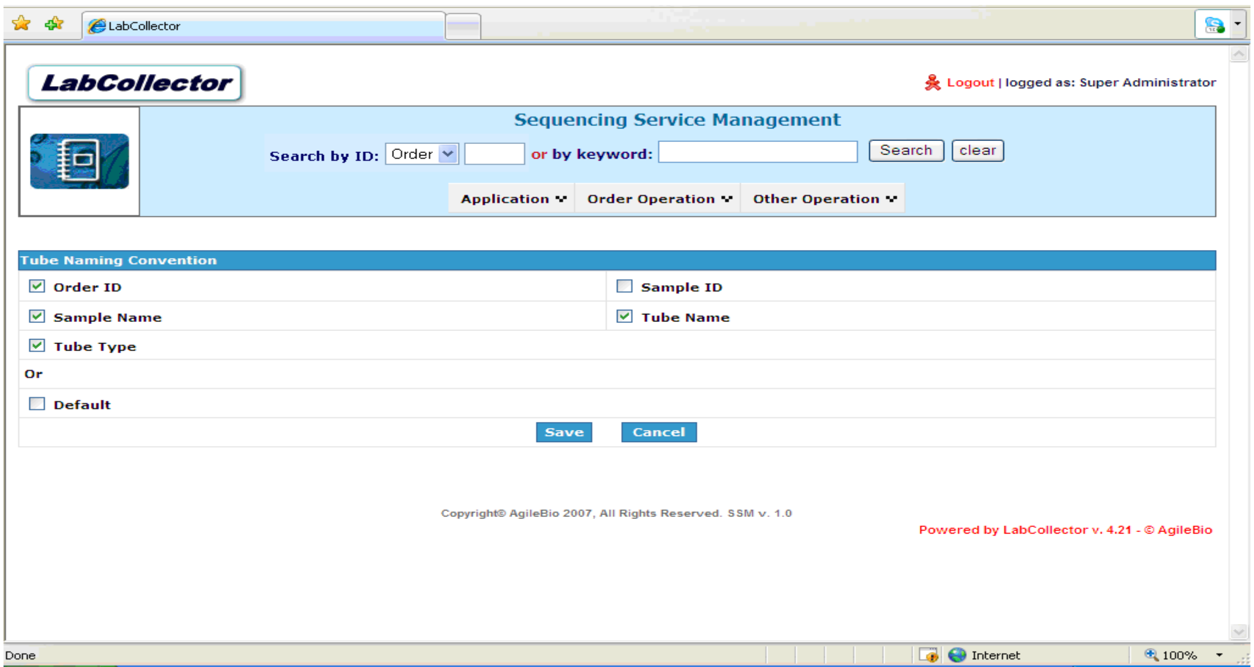


Fig No 3.34 (Tube Naming Convention)

This screen displays the following details

- **Order ID** – A unique identification number provided for an order.
- **Sample ID** – A unique identification number provided for the sample
- **Sample Name** – The name of the sample
- **Tube name** – The plate name
- **Tube Type** – The plate type
- **Default** – A check box provided for selecting the default naming convention
- **Save** – Button provided to save the changes
- **Cancel** – Button provided to cancel the operation

By hitting on the save button, the admin can save the new naming convention to the database

4. SEARCH

The application provides the facility to search for a sample from the existing list based on the id (order/plate) or using a keyword (any character of the sample name). This is a common functionality provided for both the type of users, which includes the 'Admin' and the 'User' respectively.

Search screen for the Admin

The search screen for the admin will appear as follows (fig no 4.1).

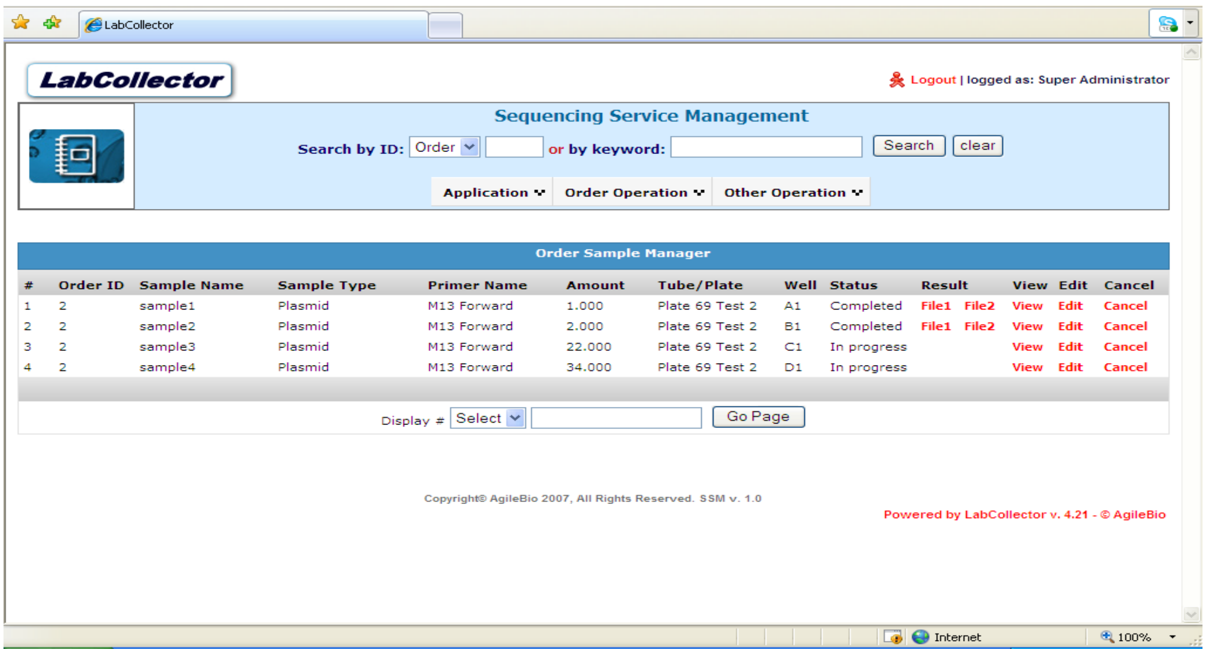


Fig no 4.1 (Search by ID)

Search by order id

To search for a sample using the 'Order Id', enter the order id of the sample to be searched in the search field, and select the 'Order' option from the drop down list and click on the search button. The application will display the searched result on the screen. In case of an invalid search, the application will generate the message 'No Record Found'.

Search by plate id

To search for a sample using the 'Plate Id', enter the plate id of the sample to be searched in the search field, and select the 'Plate' option from the drop down list and click on the search button. The application will display the searched result on the screen. In case of an invalid search, the application will generate the message 'No Record Found'.

This screen displays the following details of the search result:

- **Order ID** – A unique identification number provided for an order.

- **Sample Name** – The name of the sample
- **Sample Type** – The name of the sample type
- **Primer name** – The name of the primer
- **Amount** – The amount of the sample
- **Tube/Plate** – The name of the plate or tube
- **Well** – The position of the well if plate is selected
- **Status** – The status of the sample
- **Result** – The name of the result file if they are uploaded by the admin
- **View** – A link is provided to view the detailed information about the sample
- **Edit** – A link is provided to edit the previously entered details
- **Cancel** – A link is provided to cancel the sample if status of the sample is 'Assigned'

Search by Keyword

To search for a sample using the keyword, enter the keyword (any character of the sample name) to be searched in the search field and click on the search button. The application will display the searched result on the screen. In case of an invalid search, the application will generate the massage 'No Record Found'.

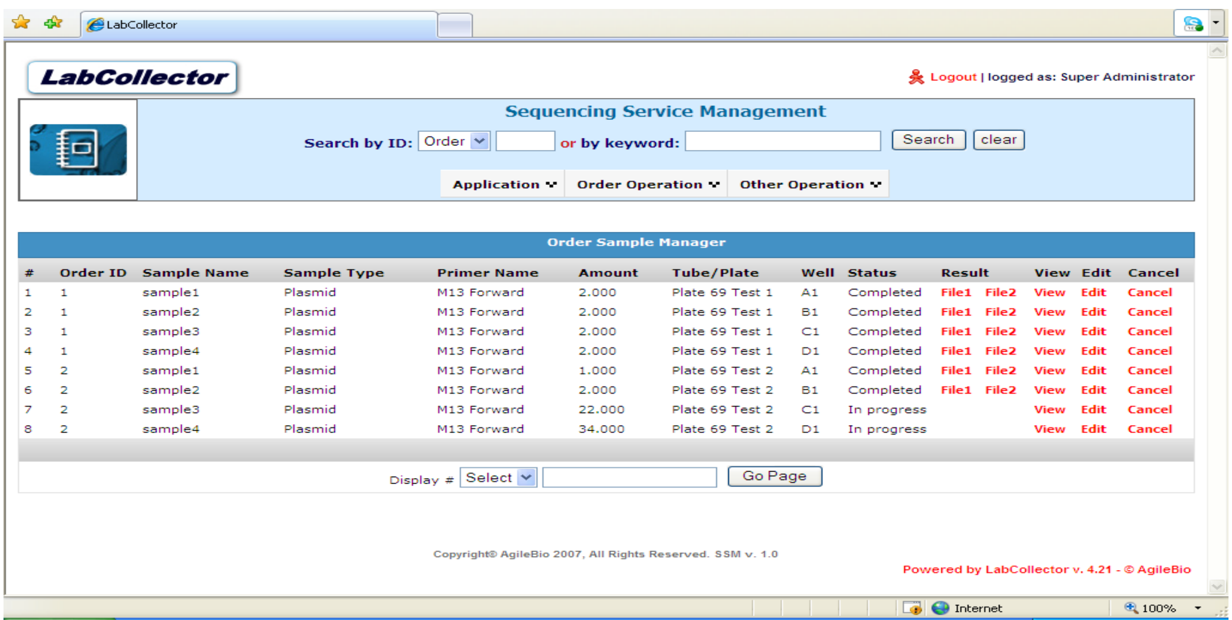


Fig no 4.2 (Search by keyword)

This screen displays the following details of the searched result

- **Order ID** – A unique identification number provided for an order.
- **Sample Name** – The name of the sample
- **Sample Type** – The name of the sample type

- **Primer name** – The name of the primer
- **Amount** – The amount of the sample
- **Tube/Plate** – The name of the plate or tube
- **Well** – The position of the well if plate is selected
- **Status** – The status of the sample
- **Result** – The name of the result file if they are uploaded by the admin
- **View** – A link is provided to view the detailed information about the sample
- **Edit** – A link is provided to edit the previously entered details
- **Cancel** – A link is provided to cancel the sample if status of the sample is 'Assigned'

Search screen for the User

The search screen for the user will appear as follows (fig no 4.3).

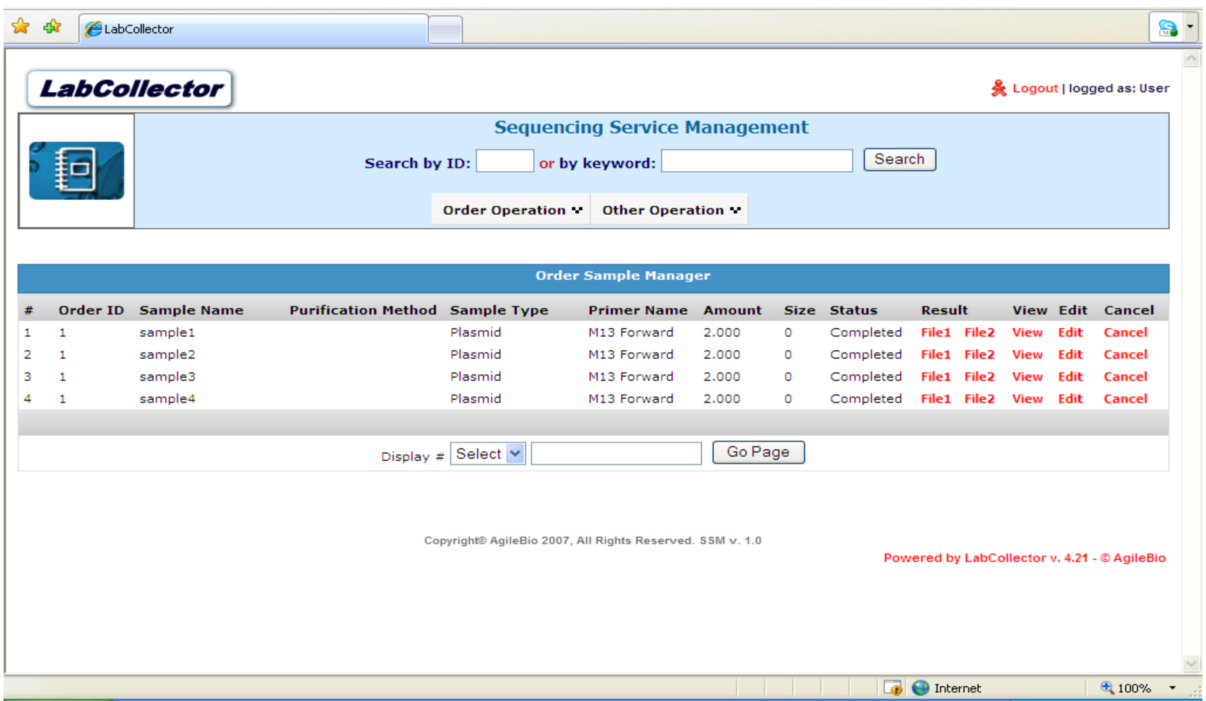


Fig no 4.3 (Search by ID)

Search by order id

To search for a sample using the 'Order Id', enter the order id of the sample to be searched in the search field and click on the search button. The application will display the searched result on the screen. In case of an invalid search, the application will generate the message 'No Record Found'.

This screen displays the following details of the search result:

- **Order ID** – A unique identification number provided for an order.

- **Sample Name** – The name of the sample
- **Sample Type** – The name of the sample type
- **Primer name** – The name of the primer
- **Amount** – The amount of the sample
- **Tube/Plate** – The name of the plate or tube
- **Well** – The position of the well if plate is selected
- **Status** – The status of the sample
- **Result** – The name of the result file if they are uploaded by the admin
- **View** – A link is provided to view the detailed information about the sample
- **Edit** – A link is provided to edit the previously entered details
- **Cancel** – A link is provided to cancel the sample if status of the sample is 'Assigned'

Search by Keyword

To search for a sample using the keyword, enter the keyword (any character of the sample name) to be searched in the search field and click on the search button. The application will display the searched result on the screen. In case of an invalid search, the application will generate the massage 'No Record Found'.

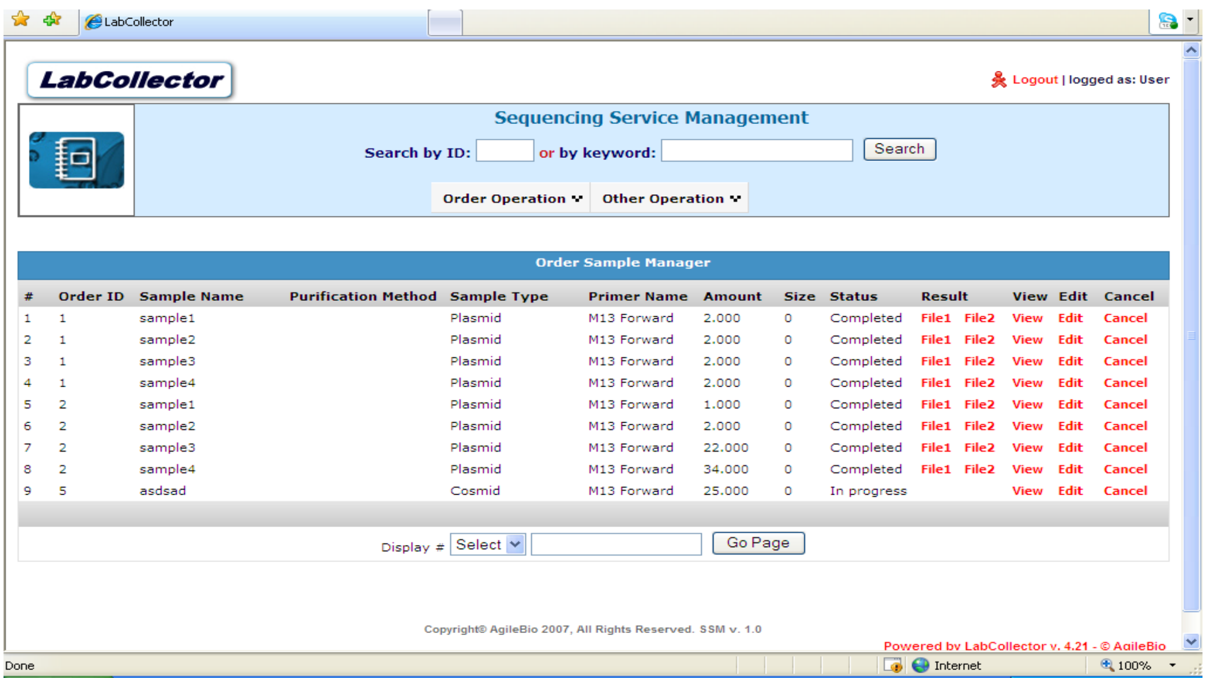


Fig no 4.3 (Search by keyword)

Note:

Application provides the facility to change the number of the records displayed on the screen. This can be achieved by selecting the required number of record from the drop down menu provided next to ‘Display #’ (fig 4.3). There is also a facility to navigate to a specific page by entering the page number in the text box provided just before the ‘Go page’ button and on clicking on the ‘Go page’ button will reveal the entered page.

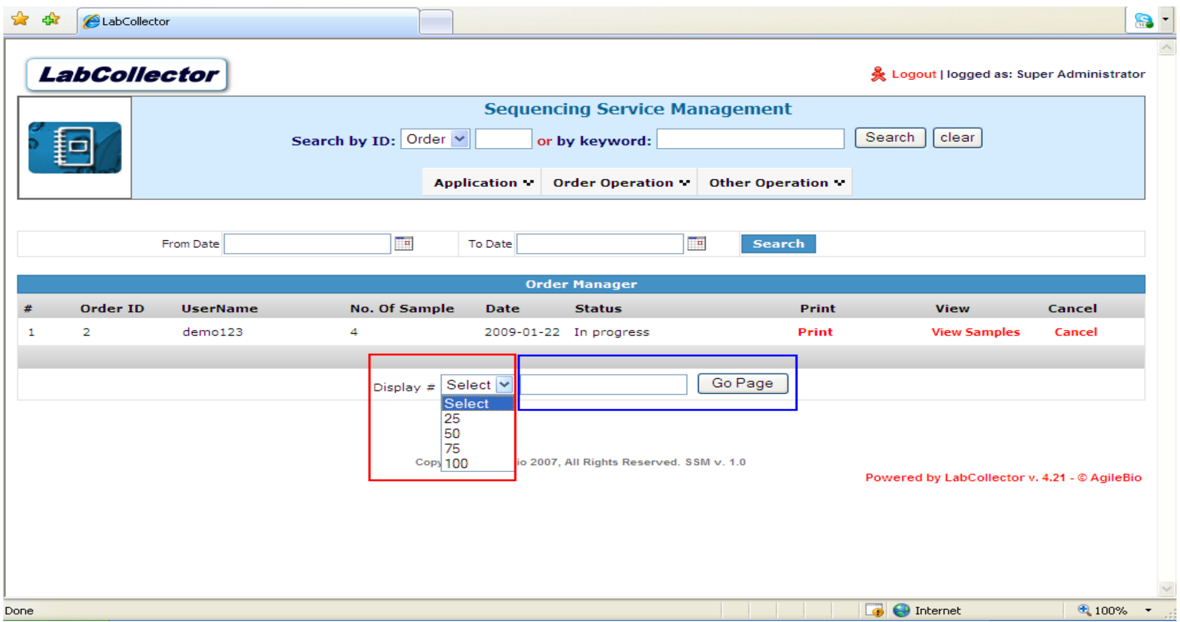


Fig no 4.4