Form Editor Used to Define Shapes in GENMMX Application

Gheorghe MARIAN
Nicolae Iulian ENESCU
Eugen DUMITRASCU
Computer and Communication Engineering Department
Faculty of Automation, Computers and Electronics
Bvd. Decebal, Nr. 107, 200440, Craiova, Dolj
ROMANIA

Marius MARIAN
Automatic Control Department
Faculty of Automation, Computers and Electronics
Bvd. Decebal, Nr. 107, 200440, Craiova, Dolj
ROMANIA

Abstract: - To realize the multimedia presentation for a product is necessary to know some programming languages that permit multimedia description (MACROMEDIA FLASH, JAVA, MICROSOFT VISUAL STUDIO, etc.). The application GENMMX created in C# language, is a generator for description the functionality of a product only by using mouse, without programming knowledges. The application generates a XML file that contains the description of a product. To create different types of shapes used to detail zones over product it is used the form editor detailed in the article.

Key-Words: - C#, .NET, form, editor, multimedia, XML

1 Introduction

Multimedia means: the capacity of a system to communicate/present the information through many simultaneous presentation environments, such as: text, graphics, photos, animation, sound, video clip, etc.

The implied compositions in multimedia applications are:

- *The text:* the traditional environment for communication/presentation of information. It often could be a slow or monotone tool, requiring enough attention and focus of user. For these reasons, in multimedia applications, it is followed to reduce as much more text as possible and focus it on simple and clear messages.
- *The images (graphics):* an image can be equivalent with many pages of text, and it has the advantage of sending instantaneously the information to user.
- *The animation elements:* are used when we want to capture the attention on a certain particular portion from a multimedia application, to add color and to loosen up the atmosphere, to demonstrate and to illustrate variant dynamic processes.
- *The sound:* is the oldest and subtlest of all communication environment. It is the most efficient tool to attract the user's attention. The music could be used to create a favorable atmosphere for presentation, to intensify the emotions or to illustrate and dignify a certain point of view.
- *Video productions:* are in fact the most representative and complete environment from all the presentation environment mentioned so far. It incorporates all described environments, based on dynamic imagines.
- *Interactivity:* is the facility through which the user can intervene and modify the flow of application depending on his desire. Thus, the execution of application is personalized for each user, eliminating for example, the parts that are not interesting.

There are programs with big complexity that permit assembling and execution of some multimedia applications like: Macromedia STUDIOMX 2004, ADOBE STUDIO, Windows Media Player etc.

2 GENMMX- Generator for multimedia presentations

We propose the following considerations to take into count all the implementations of the generator for multimedia presentation:

- transposition in multimedia presentation of the instructions of use, described in user manual of a product; that will be done in plane (2D);
- the whole functionality of the product is to be describe by files with a general format easy to interpret. For easiness, we use XML files;
- it is recommended to create, if possible, a general template for applying for all products irrespective of the category that it belongs. Otherwise, if it is not possible to use a template, it is recommended to define categories of templates that will be affiliate to products categories;
- a template, for description of functionality of a product. It is recommended to be divided into sections.

For example, in case of a template we can have:

- the section of the product,
- the section of the menus used in the presentation,
- the section used for detail and describe.

2.1 The general description of a components of an interface

The interface of the propose generator is presented in the Fig. 1.

The description of the components of interface:

- The workspace is represented in the template which is chosen for describe the product.
- Face1, Face2, ..., Face6 – represent the 6 faces of the product that will be described.
- The "Properties" zone is used to describe different proprieties of "Actions", "Controls", "Forms", and "States".
- The zone between faces and properties is reserved to describe the different forms, controls, actions and states that can be apply on a workspace.
- The template of presentation represents the structure used in the presentation of the product.

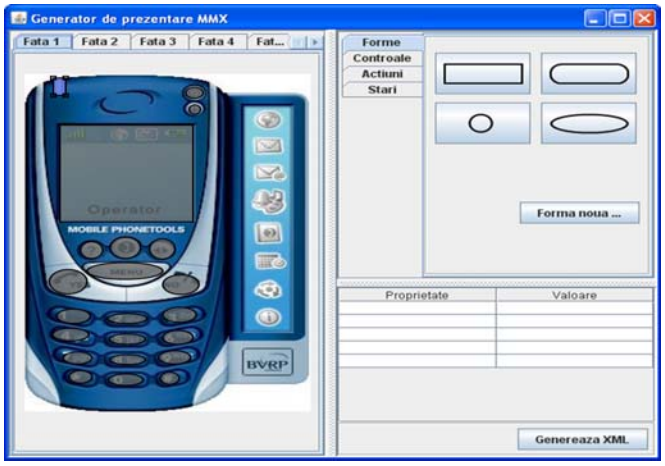

Fig. 1. Interface of generator

2.2 The detailed description of the interface's components

A template must contain many distinct sections like in Fig. 2.

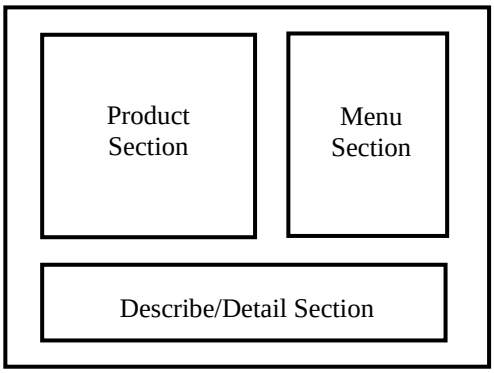

Fig. 2. Example of template for presentation

The minimum properties for a template are:

- name,
- number of sections,
- sections (description by points),
- background color,
- background image,
- border color,
- border size,
- font,
- size (width, length),
- vertical space between sections,
- horizontal space between sections.

Each used section inside template must be resized and has at least the following properties:

- name,
- background color,
- background image,
- border color,
- border size,

- font,
- position (x, y),
- size (width, length).

The forms are objects that can be applied on the workspace to delimit different presentation zones.
The forms can have following properties:

- identifier,
- relative coordinates given by the array of points {(x1, y1), (x2, y2), ..., (xn, yn)},
- the position given by points pair (x, y),
- background color (could be transparent),
- background image,
- border color,
- border thickness,
- scale factor.

Initial is available a set of default forms (hexagon, circle, square, triangle, etc,).
The Action is an event, which is started at the execution of some mouse operations or just by pressing key.
The action determines the modality through which it can be arrived from a state to another state inside the template sections.
The types of actions that can be applied are the following:

- mouse actions:
  - mouse over,
  - mouse scroll
- left button:
  - up,
  - down,
  - click
- right button:
  - up,
  - down,
  - click
- keys actions:
  - key up,
  - key down,
  - key press.

An action is generated using Action Editor and it has to contain the following properties:

- the identifier,
- the event which it produces,
- the zone over which it is applied,
- the state that can be applied,
- the state to pass after executing the action,
- the used sound.

The actions are recommended to be applied on a reserved product section.
The controls are objects that are applied outside the product section and can contain text and events. They are used to show the comments of a different menu used for realizing the presentation.
The controls that can be used are:

- buttons,
- labels,
- text boxes,
- check boxes,
- radio buttons.

The minimum properties of the controls are those from the forms, to which we add the following:

- text,
- event,
- state (active or non-active).

At the execution of the attached events of the controls it can be passed from a face to another face, from a state to another, it can be shown diverse text or it can be launched and listened sounds or movies.
The controls can be applied outside the reserved section of the product.
The state represents the description of the product at a given time.
By a state, we understand the modification of the initial image of a certain face of the product after an action or an event.
A state must contain at least the following properties:

- state identifier,
- state description,
- face to which it belongs,
- image,
- list of action that can be realized by the state,
- the forms applicable on state.

3 Form Editor Description

Using the form editor (Fig. 3), an user can define his shapes based on a set of points.

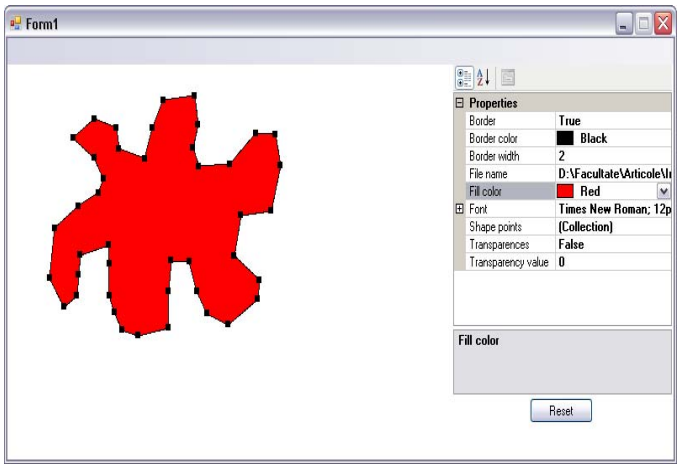

Fig. 3. Editor of forms

To define a shape it is necessary to describe the points using left button of mouse and set the properties from property window attached.
The properties which can be modified are:

- border width,

- border color,
- border visibility,
- fill color,
- transparency,
- points collections.

The result shape can be modified using the mouse or use the window from Fig. 4 which can be open by selecting the property named “shape points”.

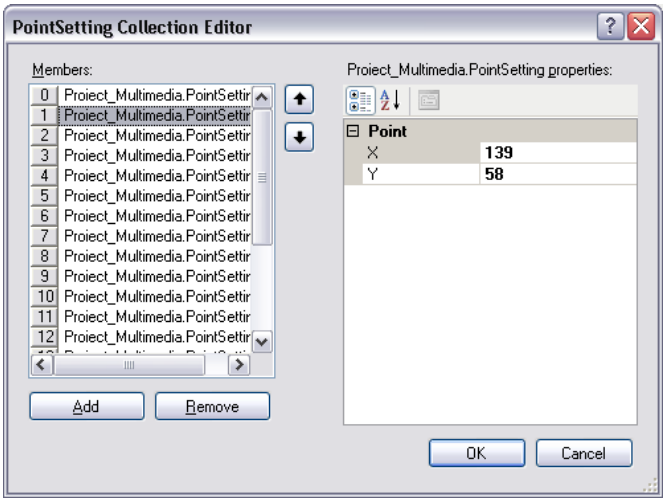

Fig. 4. Shape points editor

From shape points editor the user can delete, modify or add new points to the existing points which compose the form.
The shapes that are obtained using form editor are used for describe zones of product that can have actions or can delimit the buttons or other type of controls used by product.

4 XML description of the form

The result of GENMMX application will be a XML file according with product description realized by user. The tag elements associated with a shape in the XML file resulted are described in next sequence:

```
<Shapes>
  <Shape Type="User" Name="shape0" border="true"
         border_color="000000" border_width="2"
         fill_color="FF0000" transparency="false">
         <Point id="0" x="62" y="120" />
         <Point id="1" x="139" y="58" />
         <Point id="2" x="259" y="46" />
         <Point id="3" x="379" y="72" />
         <Point id="4" x="416" y="133" />
         ……
         <Point id="42" x="47" y="207" />
  </Shape>
</Shapes>
```

The sequences of code, in C#, used for describing forms for product defined in GENMMX are:

```
foreach (Shape shape in Shapes){
        xmlTextWriter.WriteStartElement("Shape");
        xmlTextWriter.WriteAttributeString("Type",
                        shape.TypeName());
        xmlTextWriter.WriteAttributeString("Name",
                        shape.Name);
        xmlTextWriter.WriteAttributeString("border",
                        shape.Border);
        xmlTextWriter.WriteAttributeString(
                "border_color", shape.Border_color);
        xmlTextWriter.WriteAttributeString(
                "border_width", shape.Border_Width);
        xmlTextWriter.WriteAttributeString(
                "fill_color", shape.Color);
        xmlTextWriter.WriteAttributeString(
                "transparency", shape.Transparency);
        foreach(Point point in shape.Points){
                xmlTextWriter.WriteStartElement(
                                "Point");
                xmlTextWriter.WriteAttributeString(
                                "id", point.ID);
                xmlTextWriter.WriteAttributeString(
                                "x", point.x);
                xmlTextWriter.WriteAttributeString(
                                "y", point.y);
                xmlTextWriter.WriteEndElement();
        }
        xmlTextWriter.WriteEndElement();
}
```

4 Conclusion

The realization of a generator for multimedia presentation of some categories of products will permit the description, in multimedia mode, of the functionality of the product from the user manual. This description will be accessible for a wide range of people.

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