UML Diagram

1) Problem Statement

We are attempting to develop a software that allows a user to generate UML diagrams that model their software and programs.

2) System Personnel

2.1) The users are Dr. Hutchens. He is a professor of computer science.

2.2) The system developers are Eric Dougherty, Kelsey Fulton, Ryan Peterson, Matthew McAnulty, and Timothy Kettering.

3) Operational Settings

3.1) Our target platforms are Windows, Mac OS X, and Linux.

3.2) The required software environment is the Java Runtime Environment 8.

4) Functional Requirements

4.1) Functional Description

4.1.1) The UML editor allows the user to create class boxes, remove class boxes, move class boxes, and create relations. The editor has a horizontal file menu, vertical context menu, and a workspace.

4.1.2) The UML editor, once opened, will allow the user to create a UML diagram. The window will display a horizontal file menu, a vertical context menu, and a large work space. The user can select a button from the context menu that allows them to create a class box. Once the box is created, the user has the option of moving the box in coordination with a display grid. The display grid becomes visible only when the user clicks to move the box. Once the user is done moving the box, the box will fit to the nearest location. The user can select two more options from the toolbar. They can delete the class boxes, and they can create relations. To delete a class box, the user must select the box and choose the delete option from the context menu. Once the user has two class boxes, they can create a relation between the class boxes using a button from the context menu.

4.2) User Interface

4.2.1) The user interface includes a window when the application is opened. The window includes a file menu bar, a context menu bar, and a workspace. Options will appear on the context menu bar once an object is selected.

4.2.2) The menus included are a file menu bar and a context menu bar. The file menu bar contains file, edit, preferences, and help selections. The context menu bar contains an add box, an add relation, and a delete box selection.

4.2.3) The UML editor has one window that appears when you open the application. The window contains a file menu bar, a context menu bar, and a workspace.

4.3) Use Cases

The Use Cases are basic at the moment and mostly center around the class boxes and the relational line creator. In the future more are planned and will include other key areas of importance to the project such as text and lines in the boxes, saving, opening, printing, arrowhead and text on the lines, etc.

5) Non-Functional Requirements

5.1) While important to the individual user, the data is not of great importance overall. Therefore, we chose not to emphasize reliability.

5.2) While we do not want any visible performance issues, we do not plan to take any special considerations into preventing performance issues.

5.3) We placed a high emphasis on usability so that the user felt that our program was simple to use and easy to understand.

5.4) We placed a high emphasis on portability so that the program was transferrable across Windows, Mac OS X, and Linux.

6) Future Enhancements

Future enhancements include the addition of being able to click and move the relationships around, arrow heads on the relationships, undo and redo buttons, saving and loading of diagrams, adding scroll bars to the workspace, the ability to select and delete relations, the ability to add text to the relations and inside the class boxes, standard toolbar and button designs, the minimization of unused pieces in the class box, four distinct sections in the class box, the binding of relation endpoints to the class box, and box placement boundaries.