

University of Science
FACULTY OF INFORMATION TECHNOLOGY

CS411 - Computer Graphics

Lab 03

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1 Draw basic shapes

I created each class for each shape.

Each class for each shape has different attributes. For example, to draw a rectangle, I need to pass 4 arguments for Rectangle class's constructor which are the coordinates of top left point, height and width. Or to draw a plus sign, I need to pass 3 arguments for Plus class's constructor which are the coordinates of center and the length. To draw each shape, I base on the attributes of each shape to formulate the formula.

2 Color shapes

I created a class named Painter that is responsible for coloring each shape. This class use Boundary Fill algorithm to color the shape.

3 Handle menu

I created a class named Menu to handle functions of the menu.

Menu class has the following attributes used for manage the drawing and coloring:

- curColor: current color which has just been chosen, default is white.
- currentShape: current shape which has just been chosen
- shapes: list of shapes chosen

I in turn create submenus for each type of shape such as triangle, quadrilateral, regular polygon,.... After creating for these submenus, I get its menu identifier which is later used for attaching them to the main menu. I also define a unique number for each shape, which is later passed to the callback function.

In the callback to be called when the menu item is selected, I do the following: I store the current shape which has just been selected and draw the picture.

All the shapes in my project can be drawn at one time on the screen because when allocating a new shape, I located a fixed position on the window for each shape.