# ICS 3U   The Paint Project

Design a simple paint program like windows Paint but with a little more style. Your program will allow the user to use the mouse to draw simple pictures and save them to file. You are encouraged to make your own creative design for the layout of your screen. E.g. In my paint the buttons on the left allow the user to select the tools, and the row on the bottom allows them to select the colours.
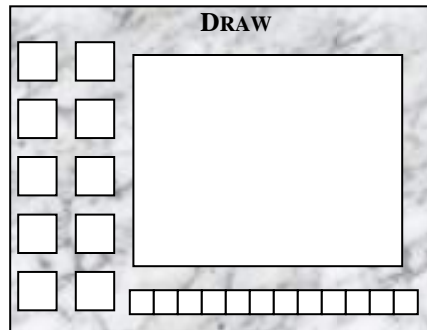
Basic Features

It is up to you to decide what the final version of this program will look and feel like but there are a number of features that you must include to allow for basic painting.

Pencil   - allow the user to draw lines that follow the mouse.
Shapes   - use the mouse to draw ovals, rectangles and lines, both filled and unfilled.
Eraser   - use the mouse to erase work that was done.
Stamp   - use the mouse to "stamp" on small bitmaps. You must include at least six different stamps.
Load/Save   - load bitmaps from a file that the user specifies and save the canvas to a file that the user specifies.
Pick colours   - click on a colour to change the current drawing colour. This will affect the pencil and shape tools.

Individual Features

This program is unlike the previous programs that you have done. This is a **real** program. You will be expected to do a lot of work. You will also be expected to hand in an individual program. It is extremely important that you understand your entire program. I will quiz you on it if I am not convinced that it is all yours. The description given above is a basis for your program. To get perfect you will have to advance this with extra features. The extras you add are up to you. Some suggestions are:

1.   Give the user some feedback as to which tool is selected like drawing a green highlight around the selected box.
2.   A spay paint effect.
3.   Anything else that is useful. For Example an intro screen to a paint program is not useful, so even though it may take a lot of work it would be worth **zero.**

Planning and comments

Because this is a large program it is important that you plan what you are doing on paper, use good variable names and add comments to clarify your code. Don't wait 'till the end to do this you will lose out on the advantage of the clarity it gives you.

Evaluation   **/60**

/5	Attractive Layout	-	Laying out tools with reasonable proportions, having a nice title, things lined-up correctly, good colour choices ….
/5	Select Tools	-	The if structure in your program that know which tool is picked
/5	Stamps pictures	-	Letting the user draw small bitmaps on the canvas. There should be at least 6 pictures, and ideally they should match some sort of theme.
/5	Comments	-	Must have good head comments, explain important variables, explain what each function does, and explain what blocks of complicated code do.
/2	Code Layout	-	group together code that performs similar operations.
/3	Variable names	-	Variables should have clear and meaningful names.
/3	Load/Save	-	Load the canvas from a bitmap file, Save canvas to a bitmap file. For full marks the user must enter the file names.
/5	Attention to Detail	-	Does it seem professional? Does the user have to do things in the order that you want them to or can they just sit down and start using it? Are things properly clipped to the canvas? Does the way you use the left and right mouse buttons seem obvious? What pixel location the mouse is at over the canvas?
/5	Freehand Draw	-	The basic pencil and eraser tools.
/2	Pick Colour	-	Allow the user to select what colour the pencil and shapes are drawn in. You also need to display which colour is currently selected in some sort of preview box.
/10	Basic shapes	-	Rectangle, Ellipse and line. Should allow the user to click and drag all three shapes. Should have options for filled and unfilled.
/10	Individual Features	-	Marks based on how hard/useful. e.g.

1-spray paint, 3-text tool, 3-highlight selected tool…