**Applied Maths and Graphics Functional Checklist for your Graphics Application**

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Please place an “x” in the **Exists**? column if the feature is included in your submission. If accessing the feature is not completely obvious, please add comments in the **Access Tips** column. Please do not edit the Mark category, Features or Conf columns

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| --- | --- | --- | --- | --- |
| Mark Category | Feature category: Images | Exists? | Access Tips | Conf |
| 3rd- Mid 2.2 | Load and save image from/to file using basic Processing | X | Just click the “Load IMG” button. |  |
| 3rd- Mid 2.2 | Convert a colour image to a black-and-white and greyscale versions of the image | X | First load an image, then select the "Image Manipulation" menu and from the dropdown select "Black&White", "Grey" or "Inverse."  If you don’t load a image and try it will return a message saying you must load a image |  |
| Mid 2.2-High 2.1 | Change contrast/brightness or any other aspect of the image using Point Functions | X | First, load an image, use the slider called “Brightness” & “Contrast.” |  |
| Mid 2.2-High 2.1 | Implement convolution filter to blur, sharpen and find edges | X | First load an image, then select the "Image Manipulation" menu and from the dropdown select "Blur", "Sharpen", "Edge" or "GaussianBlur." |  |
| 1st | Change Hue, Saturation using own RGB-HSV conversion | X | First load an image, use the slider called “RGB” to change the Hue and Saturation. |  |
|  | Feature category: Drawing Shapes |  |  |  |
| 3rd- Mid 2.2 | Drawing “dead” shapes (which cannot be further manipulated) via a single mouse click to place the shape. | X |  |  |
| 3rd- Mid 2.2 | Drawing “dead” shapes (which cannot be further manipulated) via interactively placing and dragging shapes to define their size | X |  |  |
| 3rd- Mid 2.2 | Marks will be awarded for additional types of “dead” shapes (lines, circles, rectangles, triangles etc..) | X | By selecting draw rect, circle, line arc and polygon, you can draw rectangles, circles, lines, arcs and polygons. Which are saved for further manipulation. |  |
| Mid 2.2-High 2.1 | Drawing “live” shapes to the canvas (stored for further manipulation) | X | By selecting a shape button, you can drag the shape onto the canvas. |  |
| Mid 2.2-High 2.1 | “Live shapes” - Selecting | X | After drawing a shape, if you select the “select” radio button and click on a shape, the shape border will change colour, notifying you that the shape is selected. |  |
| Mid 2.2-High 2.1 | “Live shapes” - Deleting | X | After drawing a shape, you need to select the “select” radio button and click on the shape you want to remove from the scene. When you see the red border notifying you have chosen a shape if you click the “delete” button, the shape will be removed from the scene. (you might need to hover the mouse over the canvas after clicking delete) |  |
| Mid 2.2-High 2.1 | “Live shapes” - Set Fill colour | X | After drawing a shape and picking a colour from “colour Picker”, you need to select the “select” radio button and click on the shape you want to add the colour too. When you see the red border notifying you have selected the shape, you can now click the “fill” button. And then deselect the shape, and the colour should change. (you might need to hover the mouse over the canvas after clicking fill) |  |
| Mid 2.2-High 2.1 | “Live shapes” - Set Line colour | X | After drawing a line and picking a colour from “colour Picker”, you need to select the “select” radio button and click on the line you want to add the colour too. When you see the red border notifying you have selected the line, you can now click the “fill” button. And then deselect the line, and the colour should change. (you might need to hover the mouse over the canvas after clicking fill) |  |
| Mid 2.2-High 2.1 | “Live shapes” - Set Line weight | X | After drawing a line and selecting the line, use the slider called “line weight” after deselecting the line and see the results. |  |
| 1st | Moving a previously drawn shape with the mouse | X | After drawing a shape if you selected the “Move” radio button. If you click and drag the shape, it will move (shapes move on the negative axis) |  |
| 1st | Scale a drawn shape using a slider | X | After drawing a shape if you selected the “Move” radio button and click and drag the shape, the shape will move. |  |
| 1st | Draw an Arc with the mouse | X | If you select “draw arc” you will be able to draw an arc. You can also change the angle of the arc by selecting the arc and using the slider “Arc Angle”. You can also move arches (if moving arcs, you must select the original draw area of the arc, not the newest add part after using the slider) |  |
| 1st | Draw open polyline with mouse | X | When clicking the “draw Polygon” a second window will display allowing you to draw open polygons when clicking. |  |
| 1st | Draw and close a polyline with mouse, which then becomes a polygon that can be filled | X | When clicking the “draw Polygon” a second window will display allowing you to draw open polygons when clicking. Double click when you want to end the polygon, also, if you have picked any colour from “colour picker” before drawing a polygon. That colour will be set after closing the polygon. |  |
| 1st | Drawing Curves of any type | N | I tried but I could get it working unfortunately ☹ |  |
|  | Feature category: User Interface |  |  |  |
| 3rd- Mid 2.2 | Basic use of Graphical User Interface buttons to do various actions (process image, load file), adapted beyond the given examples. | X | I changed the menu, button and radio button to be similar sizes |  |
| Mid 2.2-High 2.1 | Good use of User Interface Elements. | X | I used a wide range of button, menus and sliders. |  |
| Mid 2.2-High 2.1 | Loading and saving image via user interface and file dialogues. | X | By clicking “save IMG” you can save manipulated images. |  |
| 1st | Use of sliders to alter image “live” | X | By selecting a shape, and using the slider “scale Shape,” you can scale the shape (sometimes you need to hover over the shape after using the slider to see the changes) |  |
| 1st | Use of own colour pickers to set line and fill colour of shapes. | X | By clicking “Colour Picker,” a second window will display giving you the option to pick any colour. After selecting a colour, you can close the colour picker window. You will also see your colour will be displayed on the main application in-between the “colour picker” & “fill” buttons. |  |
|  | Stretch Goals |  |  |  |
| 1st+ | Saving and re-loading of drawing data as separate file. |  |  |  |
| 1st+ | Further geometric manipulation of shape once drawn (rotation, shear, manipulation of curves) . |  |  |  |
| 1st+ | The use of “handles” on shapes |  |  |  |
| Others? | Scaling images. | X | When loading any size image into the canvas it will scale the image to the scales size |  |
| Others? |  |  |  |  |

**Overall mark:**

**Feedback Comments:**