**Applied Maths and Graphics Functional Checklist for your Graphics Application (year 2021-2022)**

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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 Conf column

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Rough Mark Category | Feature category: Images | Relevant Unit on NOW | Exists? | Access Tips | Conf |
| 3rd | Load and show image from file using basic Processing | 1,3 |  |  |  |
| 3rd- Mid 2.2 | Basic RGB manipulation of image – e.g. convert a colour image to a black-and-white or greyscale versions of the image | 1,2,3 |  |  |  |
| Mid 2.2- High 2.1 | Implement separate input and output image, so images can be manipulated and returned to their original state | 3 |  |  |  |
| Mid 2.2-High 2.1 | Implement own Point Functions such as brighten/contrast/invert to manipulate image. More marks for using LUTs. | 4 |  |  |  |
| Low 2.1-Low 1st | Implement own convolution filters to blur, sharpen and find edges | 6 |  |  |  |
| Low 1st- Mid 1st | Implement image as a “live shape” object (Can have multiple images, each can be placed, selected for process, moved and deleted) | 9 |  |  |  |
|  | Feature category: Drawing Shapes |  |  |  |  |
| 3rd- Mid 2.2 | Drawing a single shape or “dead” shapes (which cannot be further manipulated) via a single mouse click to place the shape. | 1, 7 |  |  |  |
| Mid2.2-High2.1 | Dragging shapes to their correct size upon creation | 8 | x | The user can click and drag using the buttons to draw a specific shape. |  |
| Mid 2.2-High 2.1 | Implementing a “Drawing List” to show many shapes simultaneously.  I.e. Achieve “live shapes”. More marks for different shape types. | 8 | x | I have a drawing list class which displays all the different shapes. The Drawing List consists of a Rectangle, Ellipse and Line. |  |
| Mid 2.2-High 2.1 | “Live shapes” – Selecting and Deleting | 8 | X | To select and delete a Live Shape, the user must press on the “select” button. Once a shape is selected, it will appear red. Pressing on the “Backspace” key will delete the selected image. |  |
| Mid 2.1-Low 1st | “Live shapes” - Set Fill colour, line colour and/or line-weight. More marks for ability to set each shape to a different colour/line weight. | Self-directed |  |  |  |
| 1st | “Live shapes” - Moving a previously drawn shape with the mouse | Self-directed |  |  |  |
| 1st | Draw open polyline with mouse | Self-directed |  |  |  |
| Low 1st – Mid 1st | Draw and close a polyline with mouse which then becomes a polygon that can be filled | Self-directed |  |  |  |
| 1st – Mid 1st | Drawing Bezier or Catmull-Rom Curves of any type with some degree of control | Self-directed |  |  |  |
|  | Feature category: User Interface |  |  |  |  |
| 3rd- Mid 2.2 | Basic use of Graphical User Interface buttons to do various actions (process image), mainly adapted from the given examples. | 5 |  |  |  |
| Mid 2.2-High 2.1 | Loading and saving image via user interface and file dialogues. | 5 |  |  |  |
| Mid 2.2-1st | Sophisticated use of User Interface Elements showing independent design beyond those of the given examples. Ease of use taken into consideration. | 5,9 + Self-directed |  |  |  |
| 1st | Use of own colour picker to set line and fill colour of shapes. | 9 + Self-directed |  |  |  |
|  | Stretch Goals  These are only suggestions… add your own if you think they are sufficiently advanced features |  |  |  |  |
| 1st+ | Extra Image processing operations outside of taught content – e.g. Change Hue, Saturation of image using own RGB-HSV conversion. | Self-directed |  |  |  |
| 1st+ | Drawing - The use of “handles” on shapes to scale | Self-directed |  |  |  |
| 1st + | Saving the state of the drawing/images for later reload. | Self-directed |  |  |  |
| Others?  You suggest them. |  | Self-directed |  |  |  |

**For tutor use only**

**Overall mark:**

**Feedback Comments:**