Hands-on Experiment

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Hands-on Experiment

- Practice using multi-dim arrays through simple image processing tasks.

RGB-colored Pixels

Red Component: 0 - 255
Green Component: 0 - 255
Blue Component: 0 - 255

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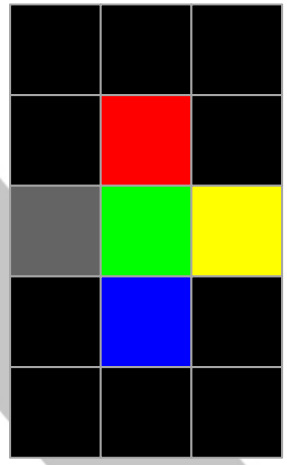
- An image of `w` pixel-wide and `h` pixel-high is represented using an `int[w][h][3]` array.
- where
  - The int value at `[i][j][0]` is the "Red" component of the pixel at `(i,j)`.
  - The int value at `[i][j][1]` is the "Green" component of the pixel at `(i,j)`.
  - The int value at `[i][j][2]` is the "Blue" component of the pixel at `(i,j)`.



rgb
0 0 0
0 0 0
255 255 0
0 0 0
0 0 0
0 0 0
0 0 0
100 100 100
0 0 0
0 0 0
0 0 0
255 0 0
0 255 0
0 0 255
0 0 0

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- Given with:

Java101ImageUtil

```
static int [ ][ ][ ] getRGBArrayFromFile()
static void showViewer(int [ ][ ][ ] rgb,String title)
static void showViewer(
                        int [ ][ ][ ] rgb1,
                        int [ ][ ][ ] rgb2,
                        String title)
static void showViewer(int [ ][ ][ ][ ] rgbs,String title)
```

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```
static int [ ][ ][ ] getRGBArrayFromFile()
```

Once called, the method show a file chooser dialog box for the user to pick an image file of either the .jpg or .gif format. The method tries to open the file and returns the 3D array containing the RGB values of the pixels in the image. It returns null if the user clicks the cancel button of the dialog box.

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```
static void showViewer(
            int [ ][ ][ ] rgb,String title)
```

The method shows a GUI window with the specified `title` and a panel hosting an images whose pixels are corresponding to the RGB values in `rgb`.

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```
static void showViewer(
                int [ ][ ][ ] rgb1,
                int [ ][ ][ ] rgb2,
                title)
```

The method shows a GUI window with the specified `title` and two panels hosting images. The first panel shows an image corresponding to the RGB values in `rgb1` while the other panel shows an image corresponding to the RGB values in `rgb2`.

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```
static void showViewer(
    int [ ][ ][ ][ ] rgbs,String title)
```

The method shows a GUI window with the specified `title` and a series of panels hosting images each of which is corresponding to the RGB values in `rgbs[i]`, where `i` is from `0` to `rgbs.length()`.

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