Assignment 3
IMAGE PROCESSING
version 0.1
(*full assignment description to be released on 4 December 2017*)

Specification

Write a C++ program that opens an image file, loads it into a data structure, and converts it into 3 new PNG image files.

User interface. Ask the user for a single PNG file name (`file_name`).

```
Image Processing Software

Specify the name of a PNG file that you would like to process.
>
```

Read the PNG header file and store its information in your program.

Read the PNG image data and store it into a 5-dimensional array. The first two dimensions should refer to the pixel's row and column. The last 3 dimensions represent a red, green, and blue value.

Save 3 new PNG image files as the file. Images 1, 2, and 3 should be the red, green, and blue channels of the image, respectively.

PNG data format

The details of the PNG data format are standardised and can be found at:

https://www.w3.org/TR/2003/REC-PNG-20031110/

Assume that all the data you are working with has a bit depth of 8-bit, is in true colour, has no compression, no filter, and no interlacing.

Submission Procedure

Go to the Programming II Blackboard page and select the "Assignments" folder. Submit only one file labelled '`img_p.cpp`' through the "Assignment 3 – Submission Portal". **The submission deadline is 11:59 PM on 11 December 2017**. Submissions are NOT possible after this deadline.