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Image Processing:

Conversion to grayscale and noise reduction using Gaussian blur method.

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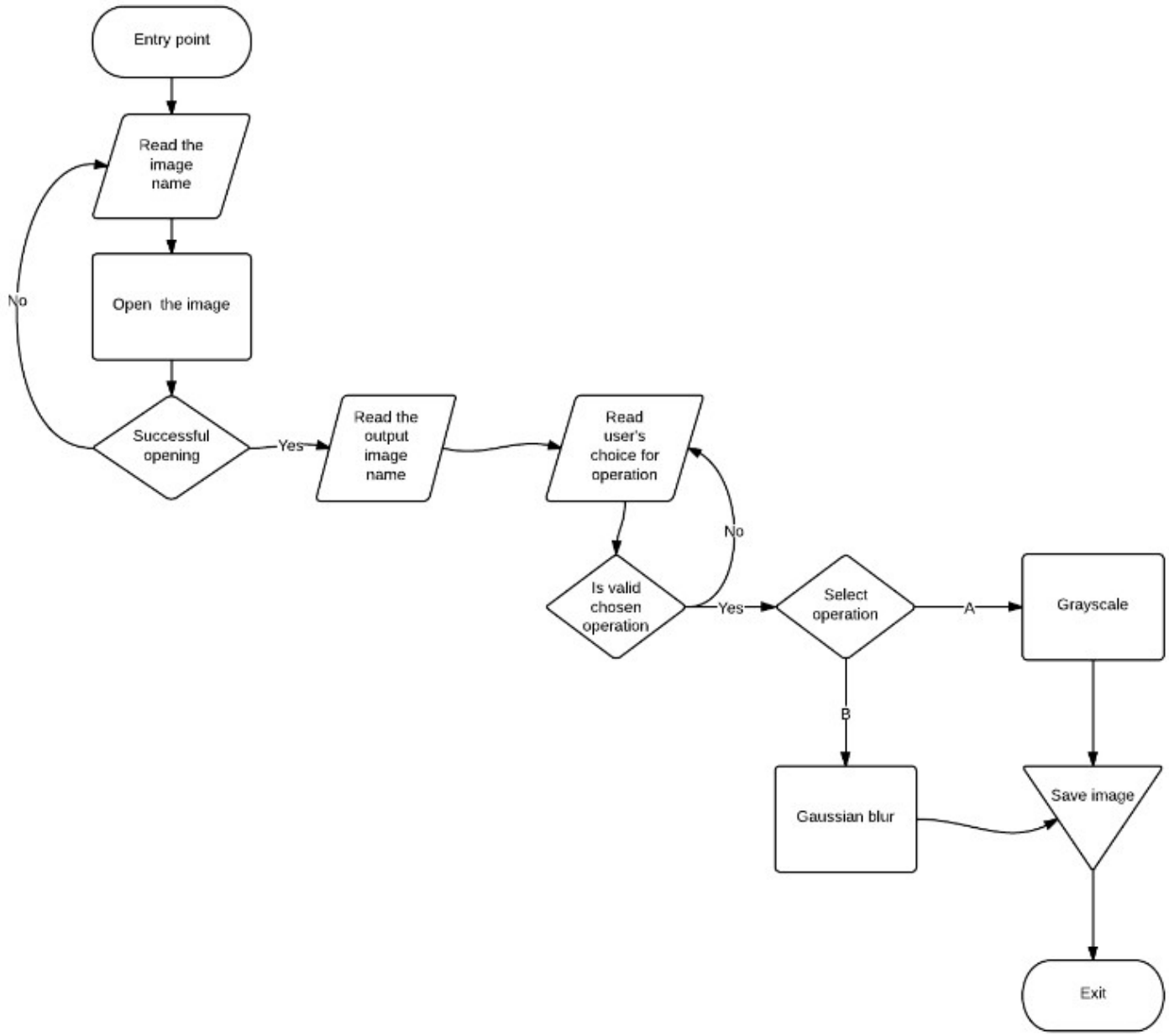
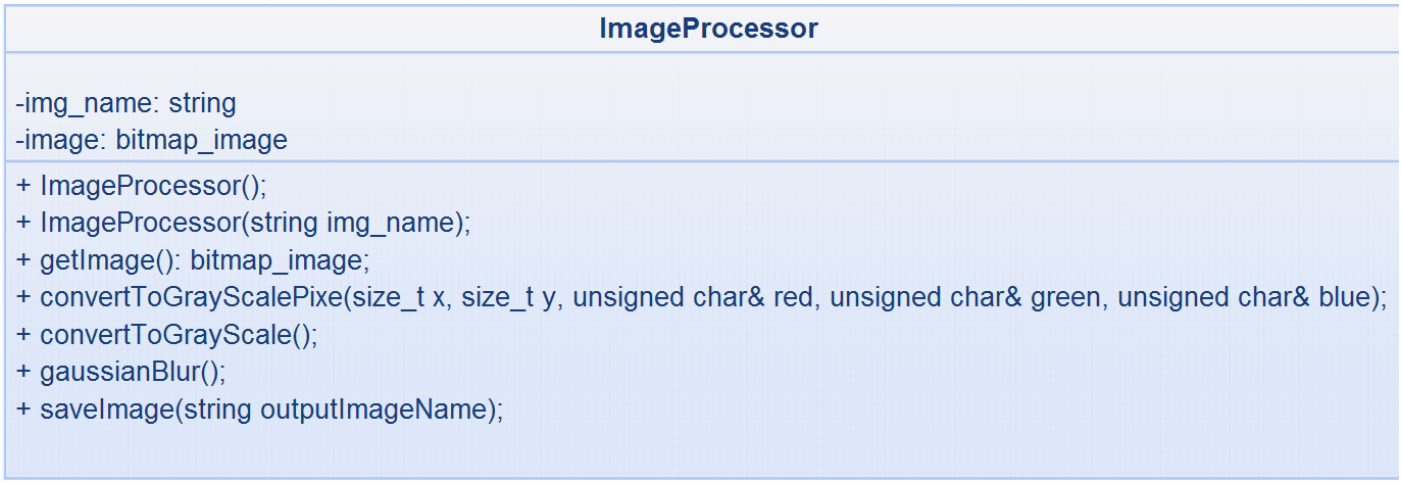
1. Task:

Write a program which:
1) Opens color images.
2) Converts the image into the gray scale.
3) Reduces the noise using Gaussian blur method
4) Saves the new image

2. Flowchart



3. Class ImageProcessor



The class ImageProcessor gives us the functionality to process an image. There are three functionalities provided by the class:

1. **Data storage provided by the private fields of the class**
   - A string img_name for the name of the currently processed image
   - An object of type bitmap_image called image
2. **An access to the**
   - Object image
3. **An ability to**
   - Convert a color bit into gray scale
     void grayScale(size_t x, size_t y,unsigned char& red,unsigned char& green,unsigned char& blue);
   - Convert image into the gray scale
     void convertToGrayScale();
   - Apply the Gaussian blur method for noise reduction
     void gaussianBlur();
   - Save the new changed image
     void saveImage(string outputImage);

Technical information: The class ImageProcessor is declared in the header file ImageProcessor.h and is implemented in the source code file ImageProcessor.cpp