**Lab 8**

**Speech and Image Processing**

Group assignment up to 3 students per group.

Using MATLAB or Octave, implement flood fill mechanism for colouring an image. For an example, see images 1 and 2 below.

**Part (a)** 2 marks

Create an RGB image of 400 x 600 pixels using Paint or Pinta (Linux), similar to image 1. Name it blob.bmp

**Part (b)** 2 marks

Read this image in MATLAB and convert it into an array of 600 x 400 x 3 double precision floating point numbers using double() function

**Part (c)** 6 marks

Implement flood fill mechanism, so that each blob in the original image is coloured with a random colour, like in image 2 below. Save it as blob2.bmp.

**Hint:**

This functionality cannot be achieved through 2 simple nested for loops. Try to think of some graph based, breadth first, or dynamic programming based algorithm, for example.

For colouring a blob: we start from one pixel, check its neighbours whether they have the same colour; if yes then colour them too and check the neighbours’ neighbouring pixels and so on.

**Deliverables:**

* MATLAB code
* Images blob.bmp and blob2.bmp (these images should be unique for each group)

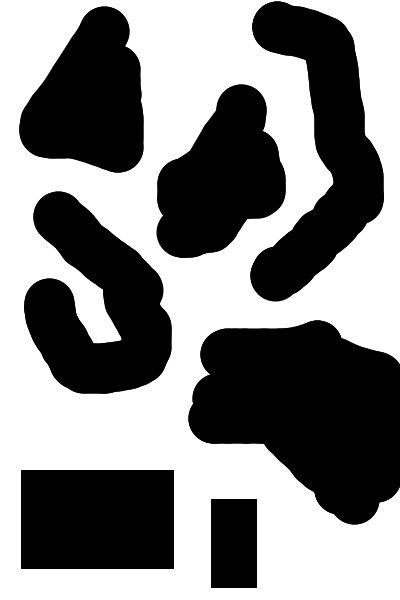


Image 1: Input image blob.bmp created by Pinta or any other image editor

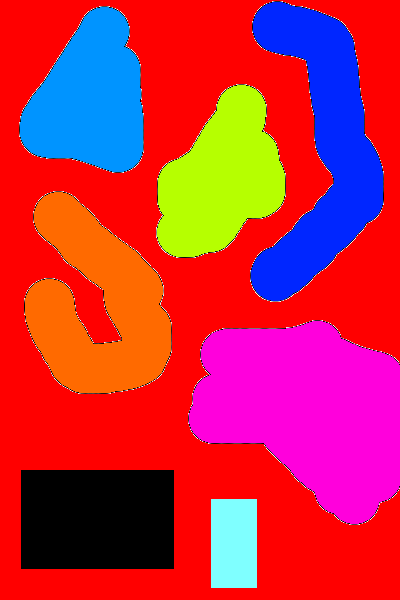


Image 2: Output image blob2.bmp created by our flood fill mechanism.