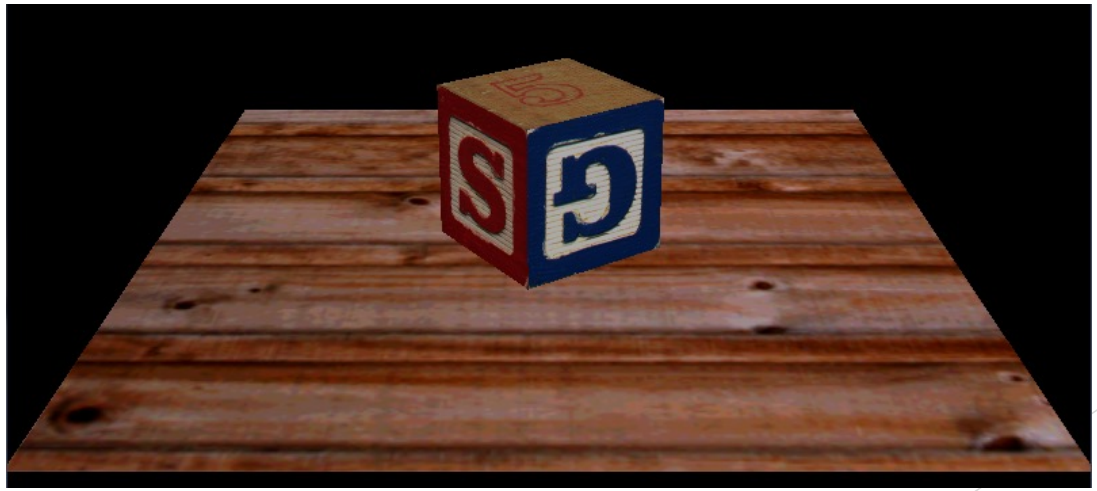
Lab 07
Texture

Render a cube with textures

- Load images with OpenCV.
- An example code and images are provided
  - This example program renders a cube and a plane with textures (as pictures shown next page)
  - You can ignore the plane (comment out the codes of planes)
- Re-write the program, load the image with OpenCV instead.



Read image using OpenCV example

```
cv::Mat image = cv::imread("textures/trashbin.png");
  //cv::Mat flipped;
  //cv::flip(image, flipped, 0);
  //image = flipped;
  if(image.empty()){
      std::cout << "image empty" << std::endl;
  }else{
      cv::flip(image, image, 0);
      glGenTextures(1, &textureTrash);
      glBindTexture(GL_TEXTURE_2D, textureTrash);

      glTexParameteri(GL_TEXTURE_2D, GL_TEXTURE_MIN_FILTER, GL_NEAREST);
      glTexParameteri(GL_TEXTURE_2D, GL_TEXTURE_MAG_FILTER, GL_LINEAR);

        // Set texture clamping method
      glTexParameteri(GL_TEXTURE_2D, GL_TEXTURE_WRAP_S, GL_CLAMP);
      glTexParameteri(GL_TEXTURE_2D, GL_TEXTURE_WRAP_T, GL_CLAMP);


      glTexImage2D(GL_TEXTURE_2D,     // Type of texture
                   0,                   // Pyramid level (for mip-mapping) - 0 is t
                   GL_RGB,              // Internal colour format to convert to
                   image.cols,            // Image width  i.e. 640 for Kinect in st
                   image.rows,            // Image height i.e. 480 for Kinect in st
                   0,                   // Border width in pixels (can either be 1
                   GL_BGR, // Input image format (i.e. GL_RGB, GL_RGBA, GL_BGR et
                   GL_UNSIGNED_BYTE,  // Image data type
                   image.ptr());        // The actual image data itself

      glGenerateMipmap(GL_TEXTURE_2D);
  }
```

https://stackoverflow.com/questions/16809833/opencv-image-loading-for-opengl-texture