This code is developed by **Morteza Jalalat**.

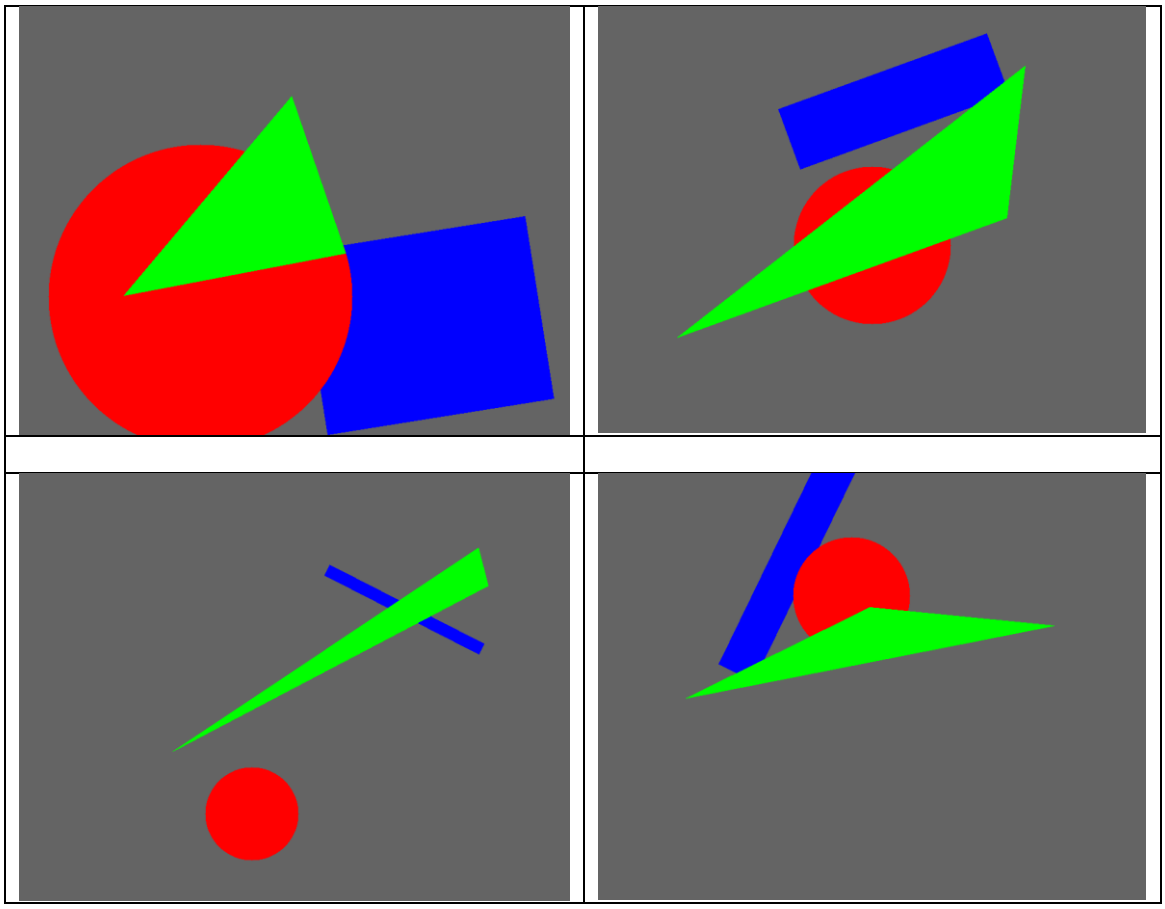
This source code is part of a big project, which has been developed to generate synthetic data of three geometric shapes with different sizes and location in an image. The purpose is preparing enough data for training a Keras-RetinaNet on this dataset for detection and recognition of shapes.

This source code reaps the benefits of **OpenCV** library in **C++** language using **Microsoft Visual Studio 2013** to create random shapes.

Pre-Built Execution:

For running this source code, just simply double click on **DatasetCreation.exe** file in the **x64-PreBuilt** folder, the process of creating and saving shape images and corresponding .csv files will start. This code is developed to run on **Windows x64**. For further information, please refer to the **"usage"** section in this text.

Some samples created by the algorithm is shown in the following:



Please refer to the comments put inside the source code to see how random shapes of different size and locations are created.

Generally, the source code consists of two main sections:

1) a C++ class named CShapeCreator, responsible for creating random shapes.

2) a source.cpp file, making an object from CShapeCreator class and sets the required parameters.

Usage:

By running DatasetCreation.exe file in the x64-PreBuilt folder, the process of creating and saving shape images and corresponding .csv files will start.

Note: If you do not have Visual Studio 2013 installed previously, please install the proper redistribution file before you proceed.

The procedure has two stages:

1) first train shapes are created

2) then, test shapes are created.

The default values are as the following:

- The path into which the created images should be placed:

  * train_path = "Images/train/";

  * test_path = "Images/test/";

  * The corresponding .csv files will be created in the current folder

- The number of images and their sizes:

  * the total number of train images:30000

  * the size of train images (700,700)

  Note: in practice the size of images selected for training is much less than the above mentioned size

  * the total number of test images: 2000

  * the size of train images (900,700)

After showing these two messages on the shell window, the procedure ends and the is ready for being used.

"Train dataset has been prepared!";

"Test dataset has been prepared!";