# FaceRecognition Toy Coding Example

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Explanation:
This application will simply perform face recognition by using a neural network architecture called FaceNet. You are asked to use this network in order to extract features (embeddings) from the face image then perform the recognition task by using these features.

Simple steps of the application can be defined as:
1. Register button shall register a given face image to the image database
2. Recognize button shall query the given face among the facial database and return a result. Result is whether an id of already registered face or -1 in case no face is matched to given face.
3. Given original image and normalized face image shall be rendered on the GUI
4. Application shall work both with still images and images that are captured from a webcam.

Requirements:
1. You need to prepare a GUI and this GUI simply consists of Register and Recognize buttons.
2. Facial features shall be extracted by using the FaceNet. There are some implementations of FaceNet in the internet. In this assignment OpenFace will be used (https://cmusatyalab.github.io/openface/). However you are not allowed to use face detection and alignment parts of the specified library. You only allowed to use Torch implementation of FaceNet. For face detection OpenCV shall be used. For fiducial points extraction dlib shall be used. For each library you need python bindings.
3. Following pipeline shall be implemented in order to perform recognition task:
   Face Detection → Face Normalization → Feature Extraction → Recognition or Registration
4. Design of GUI and actual recognition logic shall be separated.
5. A test code (independent from GUI) shall also be implemented. Test code measures the accuracy of the used network. You are asked to measure the performance of network by using LFW dataset (http://vis-www.cs.umass.edu/lfw/).