PROJECT TITLE

Software Requirement Specifications (SRS)

Version 1.0

B.Tech(C.S.E) (ECS 791)

Degree

BACHELOR OF TECHNOLOGY (CSE)

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Revision History

Author/ Changes made by	Date	Reason For Changes	Version
<Project Team Code>	DD-MM-YY	initial draft	1.0 draft 1
<Project Team Code>	DD-MM-YY	baseline following changes after inspection	1.0 approved

Approved by:

Project Guide Name:

Mr.Shobhit Kumar

Associated professor (CCSIT)

Signature:

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- ## Introduction

Face Recognition is a task that humans perform routinely and effortlessly in our daily lives. Wide availability of powerful and low-cost desktop and embedded computing systems has created an enormous interest in automatic processing of digital images in variety of applications, including biometric authentication, surveillance, human computer interaction, and multimedia management. Research and development in automatic face recognition follows

naturally. The first face recognition system was developed by **Takeo Kanade** in his Ph.D thesis work[18] in 1973.There was a dormant period in automatic face recognition until the work by Sirovich and Kirby[19, 38] on a low dimensional face representation, derived using the Karhunen-Loeve transform of Principal Component Analysis(PCA).

- **Purpose**

  In this Face recognition project we provide the information to the system and waiting for the response of the system to give the correct information which we provide to the system for provided objects or humans in the project. In this project system will identifying for the questioning and give the correct response for the identifying the objects and for humans also.

- **Scope of the Work**

This project's aim is to automate the system, calculating the fare, collecting fare, collecting all necessary information of the client and then serve the client. The data used by the system is stored in a database that will be the centre of all information held clients and employees and the base for the remainder of the process after the initial application has been made. This enables things to be simplified and considerably quickened, making the jobs of the people involved easier. It supports the current process but centralizes it and makes it possible for decisions to be made earlier and easier and learner way.

- User Revenue Enhancement.

- **Definitions, Acronyms, and Abbreviations**

Provide the definitions of all terms, acronyms, and abbreviations required to properly interpret the SRS.Contents taken from Global Change Acronyms and Abbreviation. Can't find an acronym you're looking for in our listing? This information may be provided by reference to one or more appendices in the SRS or by reference to documents. This information may be provided by reference.

- **References**

  - www.google.com
  - **https://www.slideshare.net**

- ## Overall Description

Face recognition is a category of biometric software that uses an individual's face features mathematically and stores the data as a face print. The software uses deep learning algorithms to compare a live capture or digital image to the stored face print in order to verify an individual's identity.

High-quality cameras in mobile devices have made face recognition a viable option for authentication as well as identification. Apple's I Phone X, for example, includes Face ID technology that lets users unlock their phones with a face print mapped by the phone's camera. The phone's software, which is designed with 3-D modeling to resist being spoofed by photos or masks, captures and compares over 30,000 variables.

Apple encrypts and store face print data in the cloud, but authentication takes place directly on the device. Face book uses face recognition software to tag individuals in photographs. Each time an individual is tagged in a photograph, the software stores mapping information about that person's face characteristics. Once enough data has been collected, the software can use that information to identify a specific individual's face when it appears in a new photograph.

- **User Characteristics**

  - Face recognition technology is the least intrusive and fastest biometric technology.
  - It works with the Face recognition solutions most obvious individual identifier – the human face.
  - Face recognition analyzes the characteristics of a person's image input through a digital video camera.
  - It measures the overall face structure, including distance between eyes, nose, and mouth and jaw edges.
  - Each face has numerous, distinguishable landmarks, the different peak and valleys that makeup facial features.
  - Each human face has approximately 80 nodal points. Some of these measured by the face recognition technology are:-
    - Distance between the eyes.
    - Width of the nose.
    - Depth of the eye sockets.
    - The shape of the check bones.
    - The length of the jaw lines.

- **General Constraints**

There are several factors limit the effectiveness of face recognition technology:-

- IMAGE QUALITY:-
  Image quality effects how well face recognition algorithms work. The image quality of scanning video is quite low compared with that of a digital camera. These values are equivalent to 2MP and 0.9MP, respectively while in an inexpensive digital camera attains 15MP. The diiference is quite noticeable.
    - IMAGE SIZE:-

      When a face-detection algorithm finds a face in an image or in a still from a video capture, the relative size of that face compared with the enrolled image size effects how will the face is recognized.

    - FACE ANGLE:-
      The relative angle of the target's face influences recognition score profoundly. When a face is enrolled in the recognition software, usually multiple angles are used profile, frontal and 45 degree are common).the more direct the image and the higher its resolution, the higher the score of any resulting matches.
    - PROCESSING AND STORAGE:-
      Even though high-definition video is quite low in resolution when compared with digital camera images, it still occupies significant amounts of disk space. Processing every frame of video is an enormous undertaking, so usually only a fraction (10 percent to 20 percent) is actually run through a recognition system.

- **Assumptions and Dependencies**

- Assumption is defined as the act of talking on new responsibilities. An Assumption is a fulfillment of the duties of another person who has been fired from your company. An Assumption is anything you think to be true there is no guarantying.

- Dependencies are the relationship of the preceding to the succeeding task. Task may have multiple preceding tasks and multiple succeeding tasks. The most common dependency relationship is a finish-to-start relationship. Task P (predecessor) must be finish before task S (successor) can start.

- **Specific Requirements**

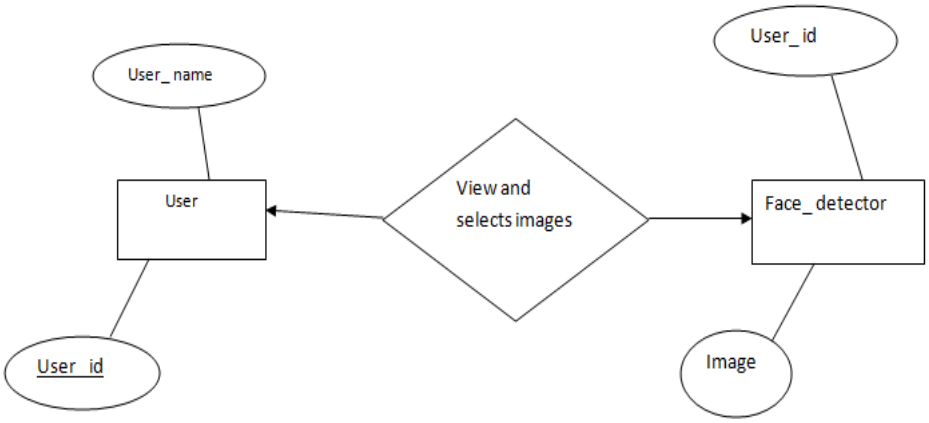
The smart surveillance engine (SSE), deep learning engine(DLE)and middleware for large scale surveillance(MILS) components must meet the minimum hardware and software system requirements. The DLE server must be registered. The face images that are enrolled in the watch list database must be in .jpg file format, less than 4MB and of sufficient quality. Ensure that the image contains a frontal view of the face, good lighting and at least 80 pixels between the eyes. You must have the appropriate access to enroll people in the watch list and to search again in the watch list.

There are some specific requirements which are used in the face recognition:-

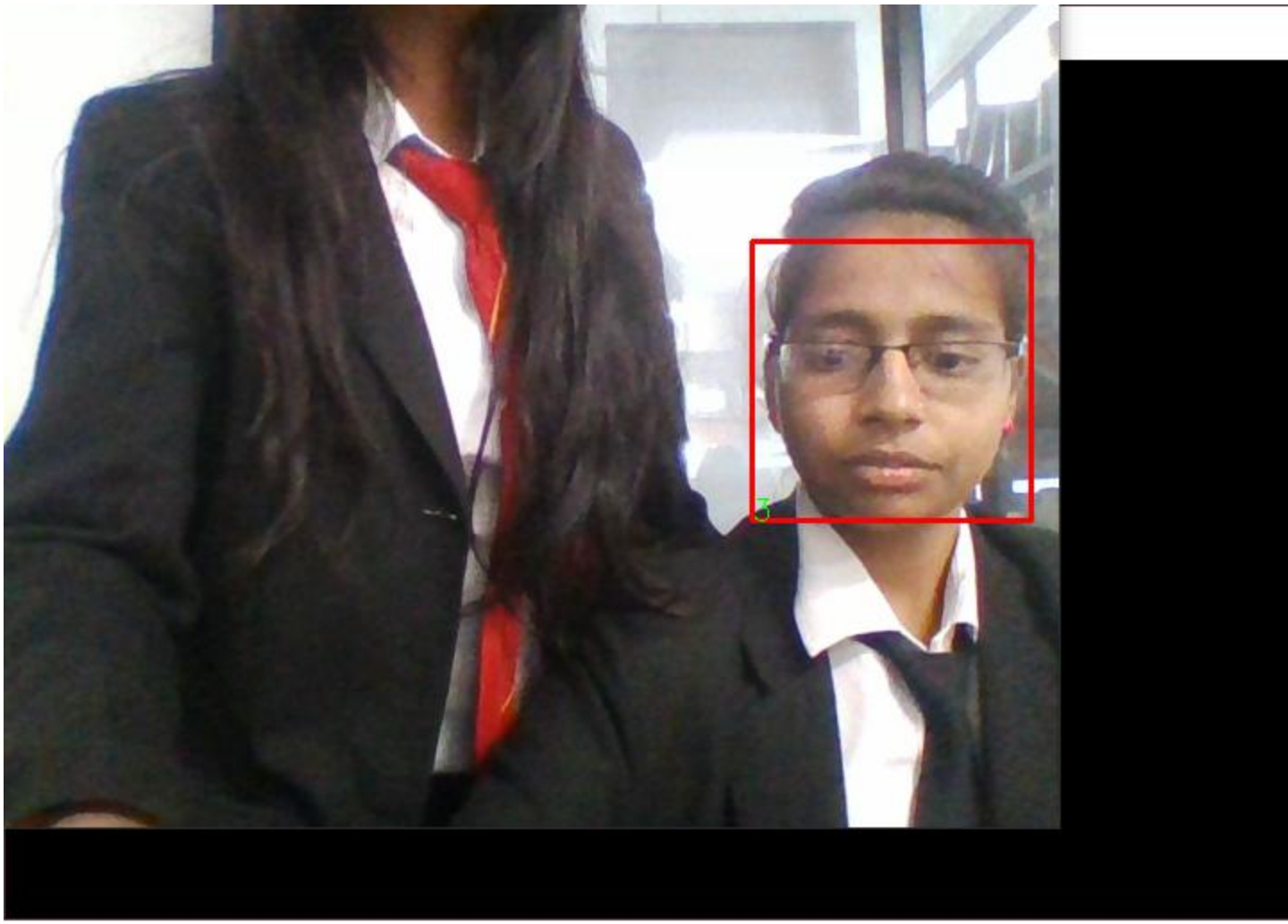
- Lighting
- Pose
- Camera type
- Camera position
- Distance from camera
- Camera focus
- Image/video resolution
- Use case
- Speed
- Security
- Location

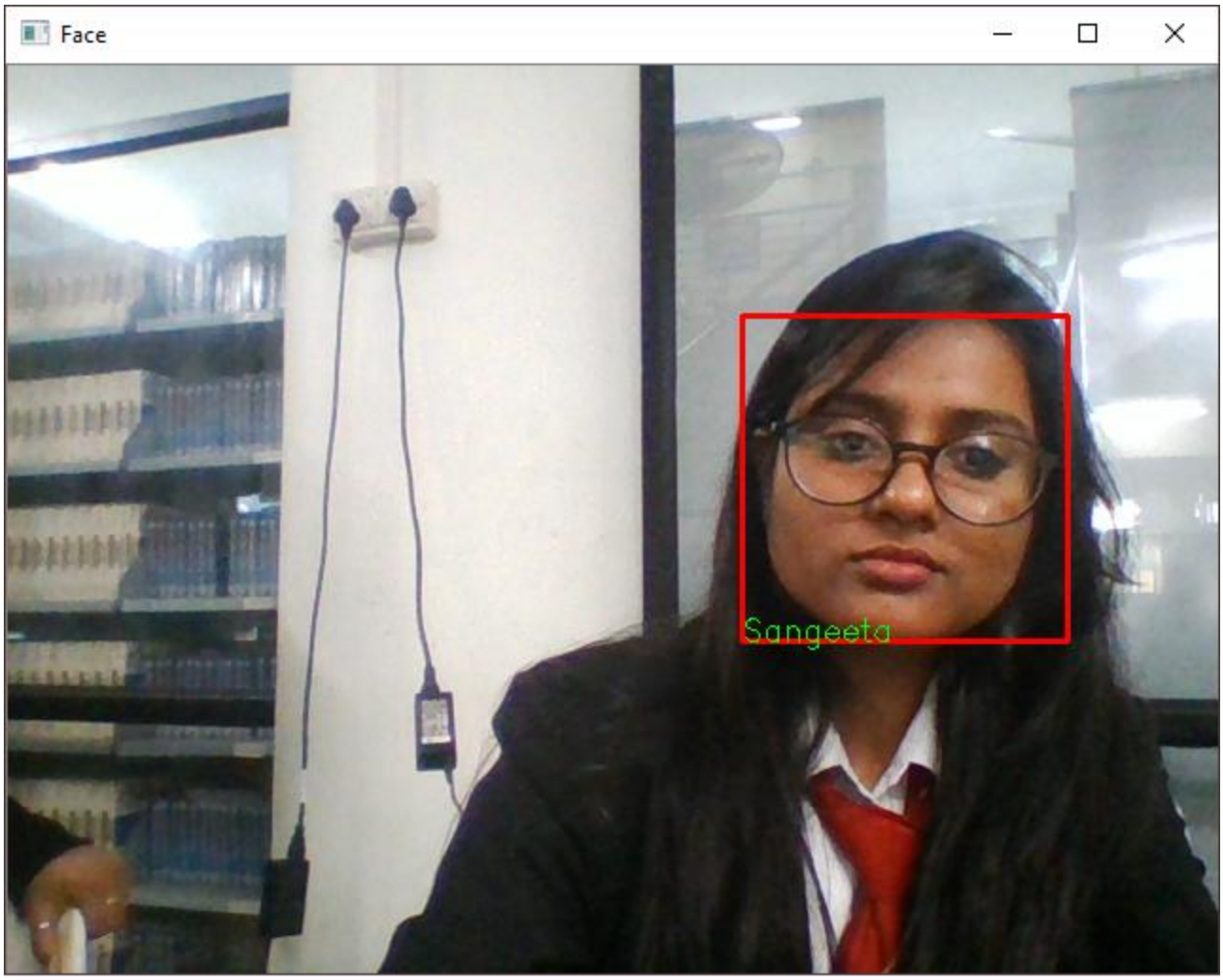
Appendix A
Data Flow Diagram (DFD)
(Mandatory)

Appendix B
Entity-Relationship Diagram (ERD)
(Mandatory)



Appendix E
Screen Shots

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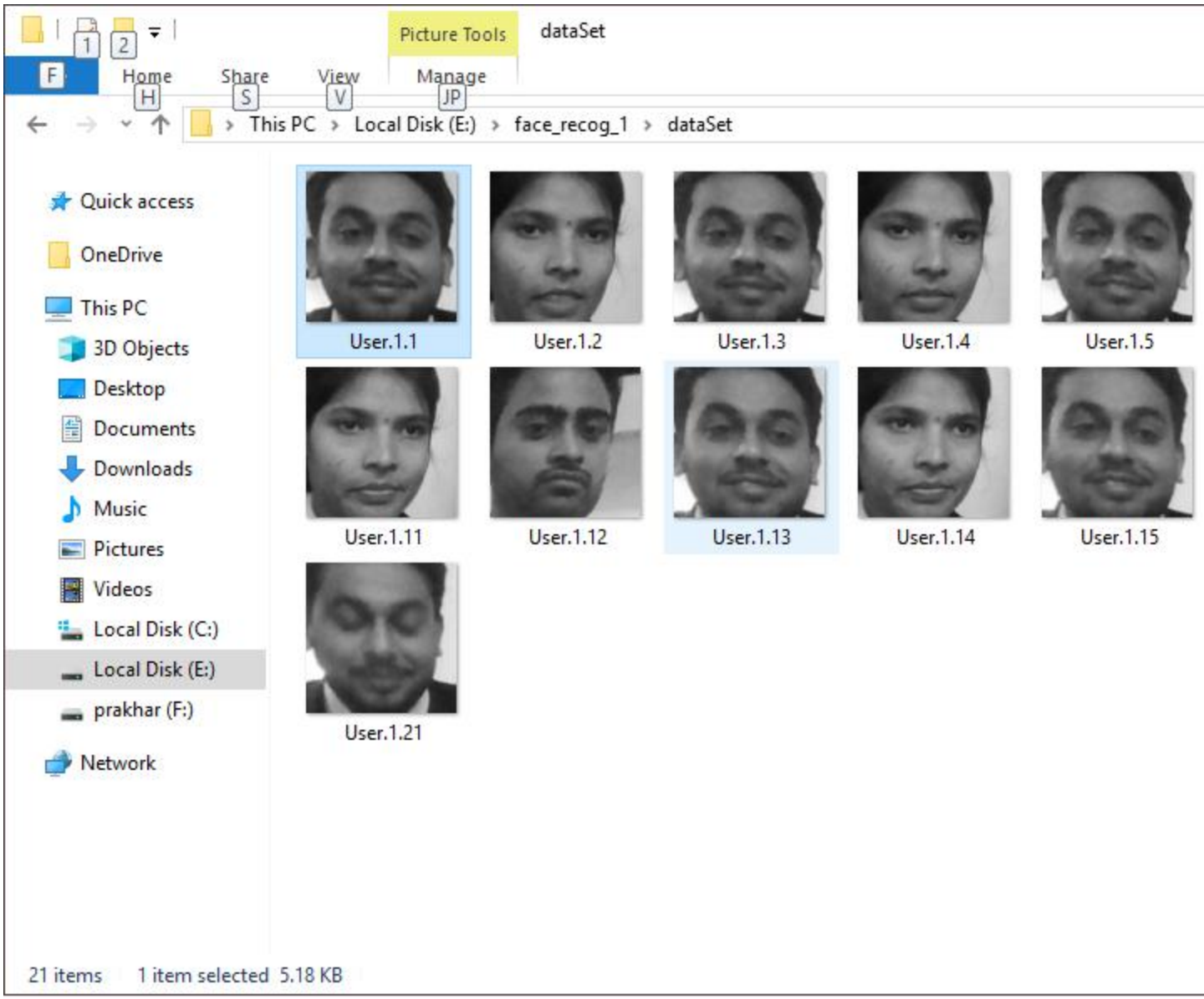
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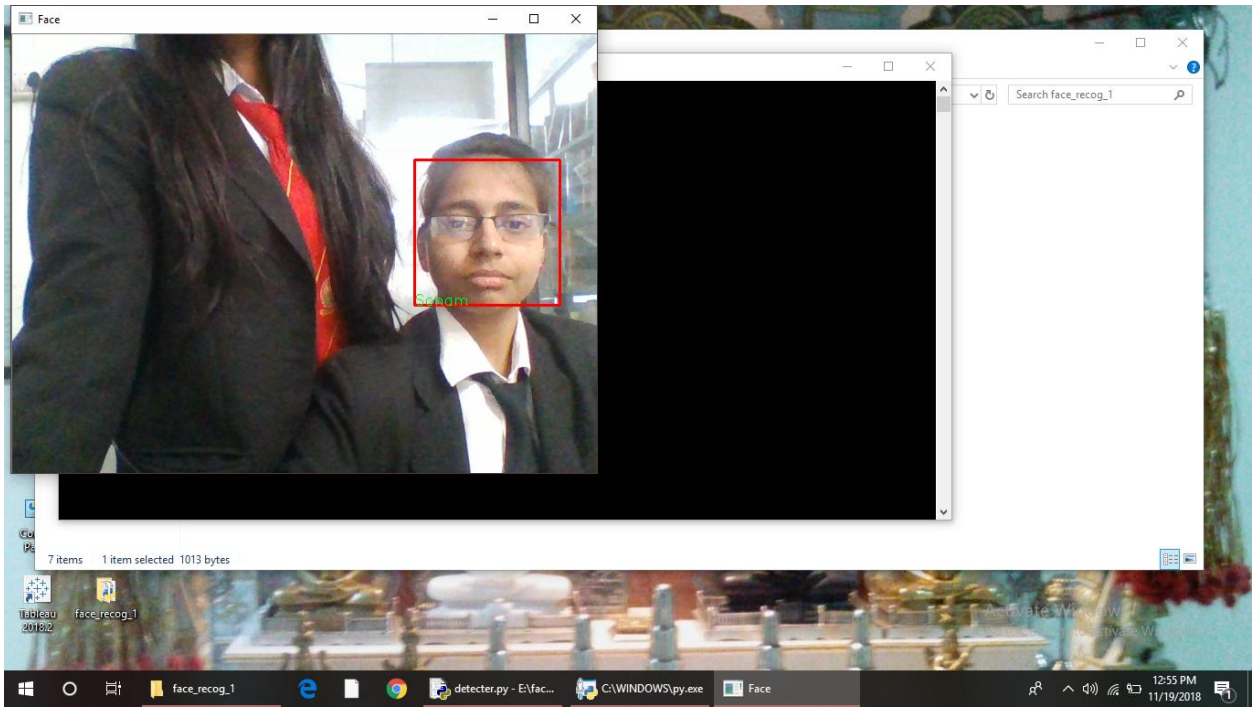
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THANKS