CSE299 Junior Design Project Plan

NORTH SOUTH UNIVERSITY

Course Code: CSE299

Section: 04

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Bitbucket Repository Name: CSE299.4_RedForce

Bitbucket Link: https://rafsan_kabir@bitbucket.org/rafsan_kabir/cse299.4_redforce.git

Project Description

The application being designed and implemented is a security-based software, and we have termed the project's name (in development) "RedForce". The application being implemented is a web-application, and we will be using Django web framework as our backend development ground. The main focus of the application is security; and to ensure this, we will incorporate a Face-Recognition System along with Face Anti-Spoofing technology in our application. The working of our project is described below.

The application will allow a user to login using Google Sign-In. New users will need to provide relevant information and complete the face registration setup before they can head to the main page of the app. To register user's face, user must be equipped with an integrated camera or must use an external webcam- should they want to proceed further into the application. During face registration, the implemented face anti-spoofing technology will ensure a real human is on the client end. Once a face is registered, the face-recognition system will match the registered face and if matched, users will be forwarded to the main site. Existing users will only need to follow through face-recognition system, and does not require to provide redundant information. Once logged in, user's will be able to upload files from their computer to the website and uploading will also require face-recognition security check. Once a file is uploaded, the application will immediately encrypt the file, and send it to Google Drive. Users can only see an encrypted file from Google Drive end, and they cannot decrypt from Drive's end. The user will also be able to view the file only through our app, and upon selecting a particular file, it will be decrypted from the app's end and allow users to view it. Viewing also requires face-recognition security check. The user can also delete the file (after necessary security check), and the file will be deleted from both the app and from Google Drive. The app will have additional security features such as reverification for long durations of inactivity. Lastly, the user will be able to logout of the app.

Tech-stack

Frontend

- HTML, CSS, Bootstrap, JavaScript

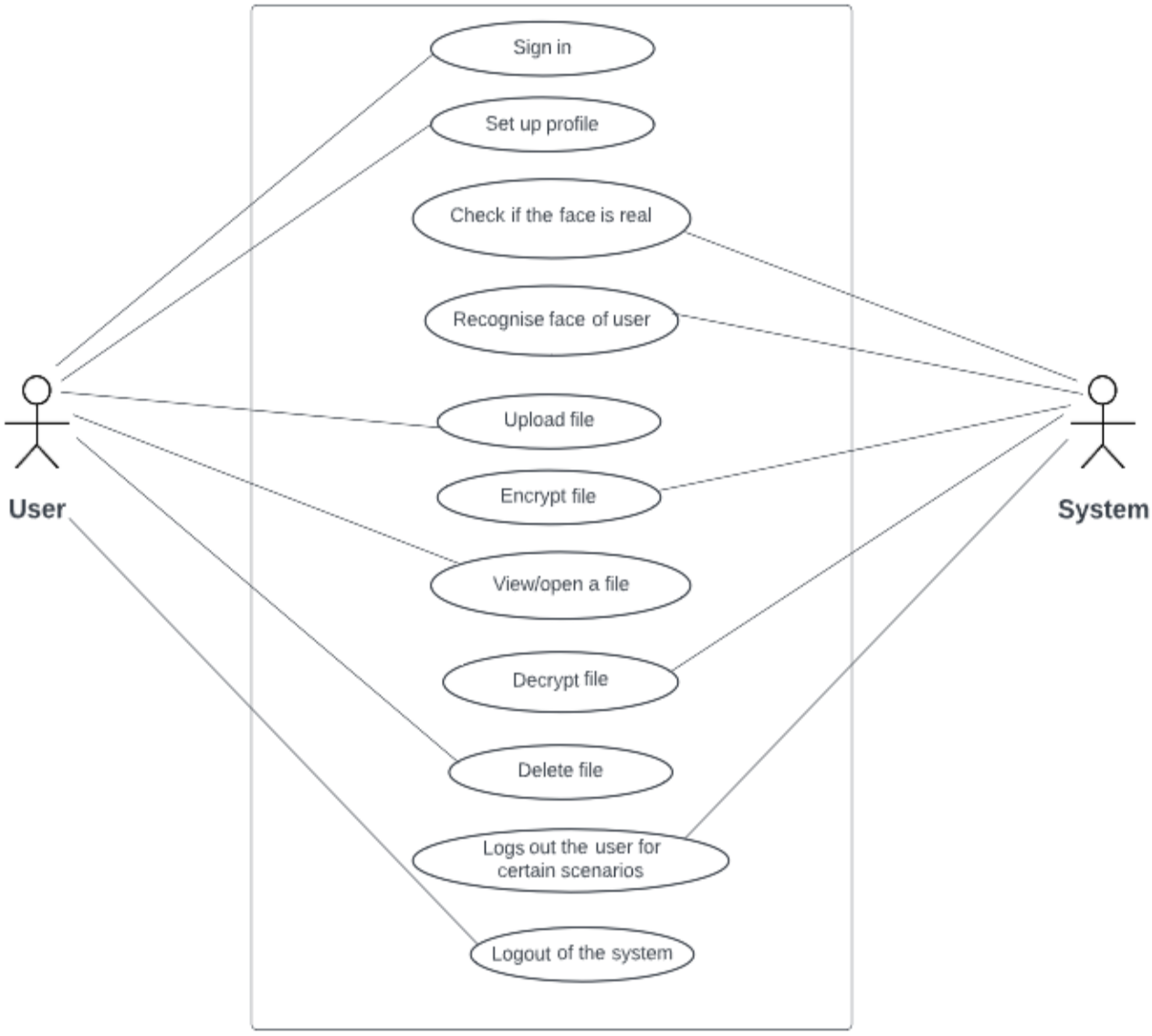
Backend

- Django Web Framework

Database

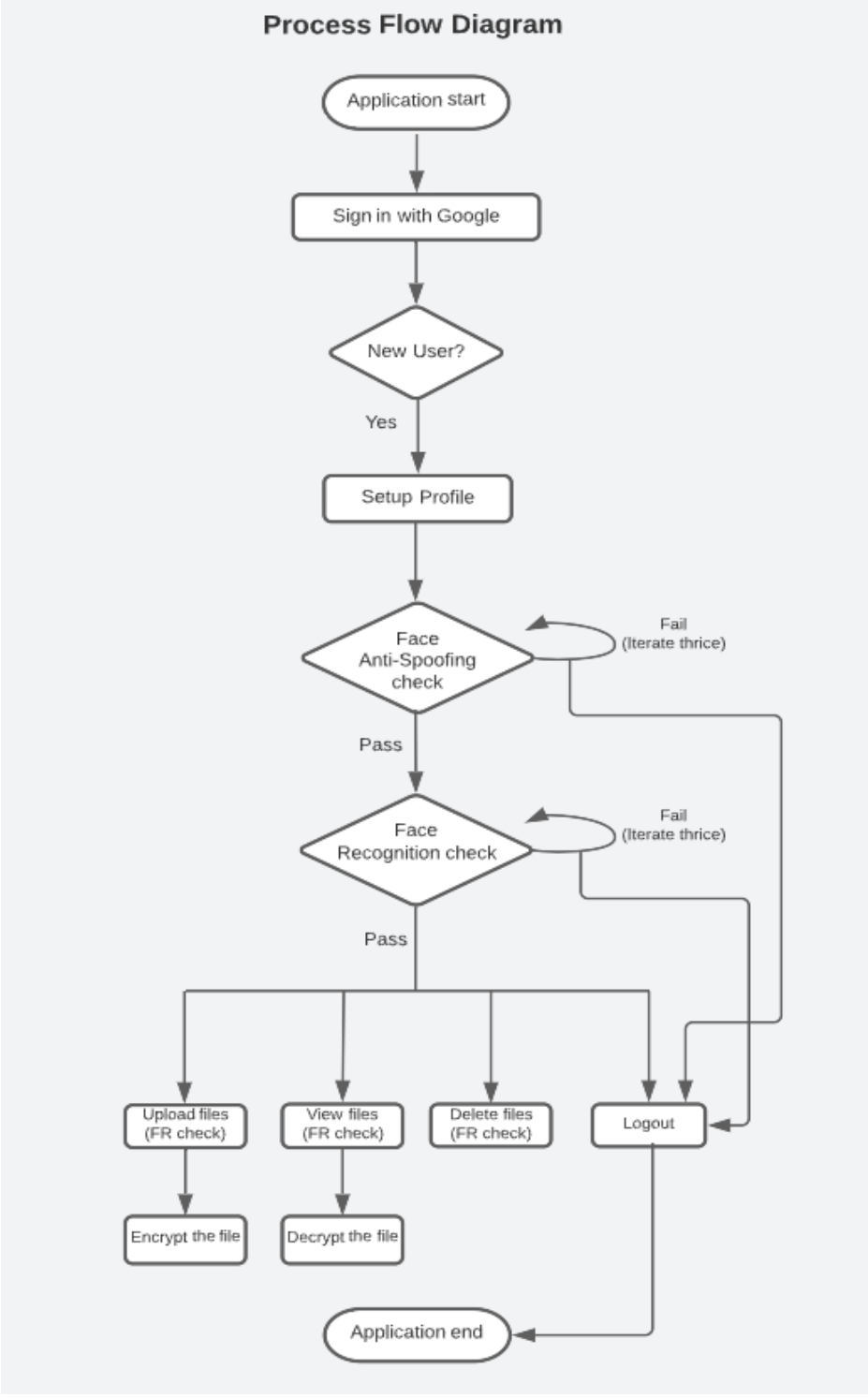
- SQLite DB

Use Case Diagram



Use Case Diagram

Process Flow Diagram



Delivery Goals

Week 1

- Sign in with Google
- Set up profile using face recognition

Week 2

- Face Anti-spoofing

Week 3

- Upload files to Google Drive
- Encrypt the uploaded files

Week 4

- Open files using pdf/doc viewer
- Decrypt the files
- Delete files from the app

Week 5

- Implement all edge-case validations