1. **Introduction:**

   To transmit the student data to the Central Server for obtaining an authentication key to unlock the door for valid students.

2. **Scope:** Applicable for the Twinkle Door Access System

3. **The folder where the program resides and how to execute them from the start:**

   In Local Server (Raspberry Pi, IP addr: 10.32.26.20):

   Location: /home/pi/Desktop/Integrate_DB_UDP/Multiuser
   Name of the file: Data_Store_DB_v3.py
   Dependent file: Data_Connct_Cent_Serv.py

   How to execute the program:

   - Open the terminal.
   - Change the directory by typing:
     "cd /home/pi/Desktop/Integrate_DB_UDP/Multiuser"
   - To run the program type:
     "python3 Data_Store_DB_v3.py."

   In Central Server (Raspberry Pi, IP addr:10.32.26.70)

   Location: /home/pi/Desktop/Integrate_DB_UDP/
   Name of the file: Data_Store_DB_v2.py

   How to execute the program:

   - Open the terminal.
   - Change the directory by typing:
     "cd /home/pi/Desktop/Integrate_DB_UDP/"
   - To run the program type:
     "python3 Data_Store_DB_v2.py."

4. **Guide to install the program and configure various parameters:** The program is a self-written script.

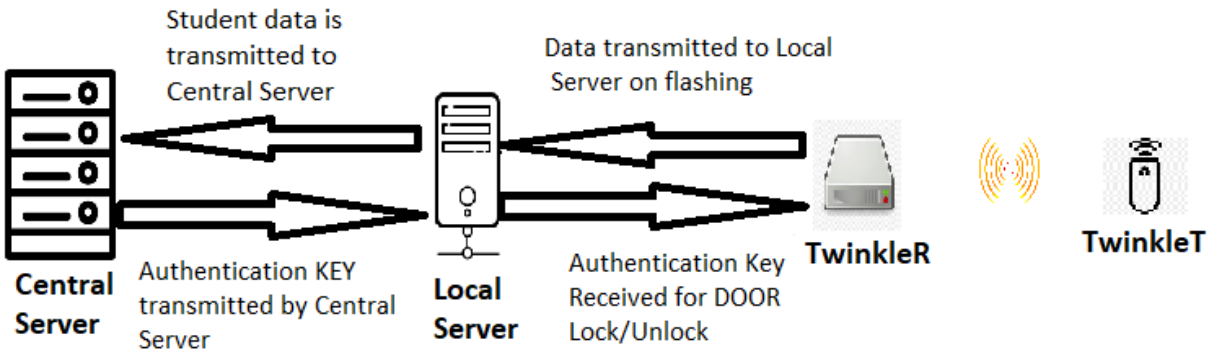
Parameters to be configured:

- In the Central Server:
    1. In the program Data_Store_DB_v2.py, update the parameter: "list_valid_twinklet_for_twinkler1"
       Every student has a unique TwinkleT ID, on updating the above parameter with the TwinkleT ID, only the valid students will get the authentication.
    2. In the program Data_Store_DB_v2.py, update the port number in the main function accordingly.

- In the Local Server:
    1. In the program Data_Connct_Cent_Serv.py:
       In the function client_program ():
       Update the Central Server's IP address and port number accordingly.

NOTE: The port number in "Data_Store_DB_v3.py" of Central Server and port number in "Data_Connct_Cent_Serv.py" of Local Server has to be same.

5. **Detailed Description with diagrams:**

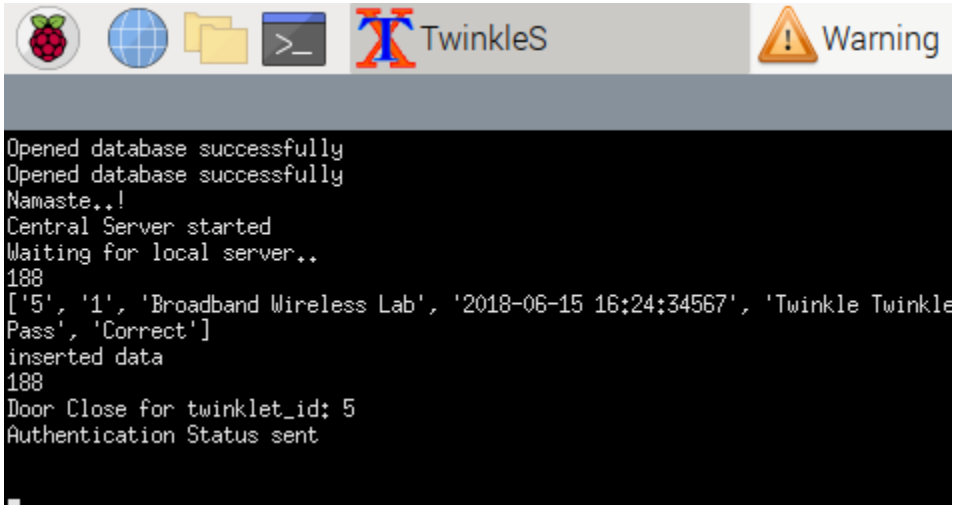


- On student flashing the device (TwinkleT) to the TwinkleR, the data is transmitted to the Local Server.
- Local Server in turn transmits this data to the Central Server.

- On receiving this data, the Central Server reviews the TwinkleT ID and if the ID is included in the valid list of TwinkleT's, an "Open" Key is transmitted to the Local Server.
- The Local Server transmits it to the TwinkleR, for unlocking the door.

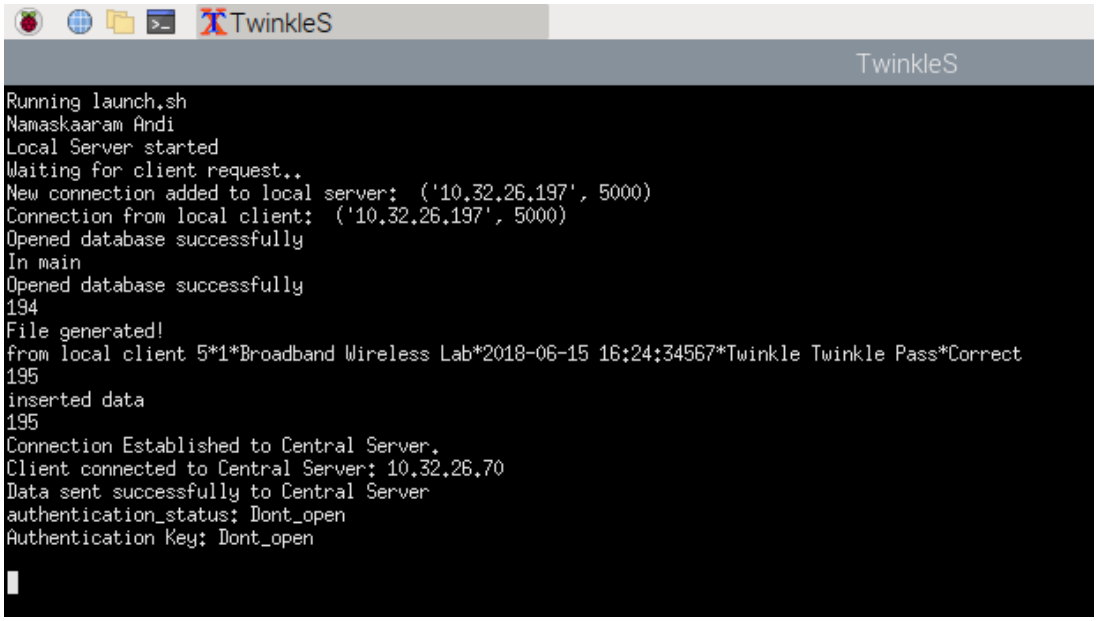
Screenshots:

Central Server: Terminal view on reception of Students data:

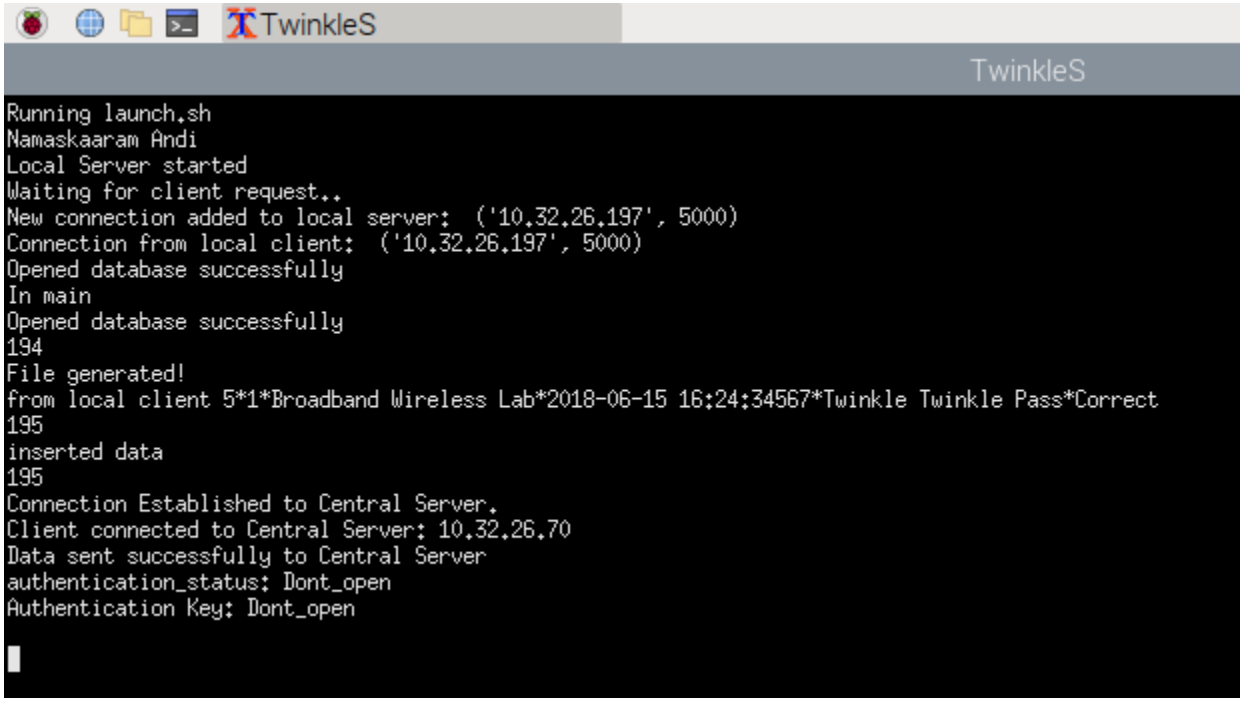


Local Server:

- Terminal view when a valid student flashes the TwinkleT:



- Terminal view when an invalid student flashes the TwinkleT:



6. **Details about any scripts or 3rd party programs:**
   No third-party program is implemented here

7. **Platforms required for running the programs (PC/RPi ...):**
   Raspberry Pi, Windows with Visual Studio, PyCharm, Linux Systems.