**ABOUT THE PROJECT:**

This project is “Automated access control using Facial Recognition, Bluetooth and Gesture “. This project is primely developed to make the whole locking/unlocking system autonomous and less cumbersome.

**MATERIALS USED:**

* Arduino Uno
* Bluetooth Module HC-05
* MPU 6050
* OpenCV
* Python
* Windows Platform
* LEDs, Resistors
* Camera
* Android device

**HOW THE PROJECT WORKS?**

Firstly, we start the project by connecting the Arduino Board to the power supply and the external power supply to the devices. Then we upload the Arduino code to the northern we run the python script for the facial recognition part. But before running the script we must generate facial datasets for the algorithm to recognize. We create the data set by running the createdata.py script. But before running the algorithm we must create a folder inside the dataset folder. After running the Createdata.py script the facial data will automatically get stored. Once the data has been stored the face\_recognize.py script can recognize the face. After running the script, we can access the lock by using gestures, this is done by using the MPU6050 with sends gestures data to the Arduino board. We can also lock unlock by using an android app that I created. We need to send the password through the app by the Bluetooth module to the Arduino board.

**RESULT:**

Once all the program gets run, we can lock unlock the device if we provide the proper inputs to the algorithm.

-