

Introduction:

This project involves the use of various tools of image processing to recognize faces and develop an efficient attendance recording system. Opencv library is used with Python to develop the project on Ubuntu platform.

Tools used:

- **Opencv:** Opencv is a powerful and platform independent library for Computer vision related applications spanning very basic tasks like pre-image processing, color conversions to high level algorithms like feature extraction, machine learning etc. It is a free software and provides a rich Application Programming Interface for C, C++ and Python.
- **Numpy:** numpy is a fundamental package for scientific computing with Python. Most important use of numpy for this project is that it contains a powerful N-dimensional array objects. We use 2 dimensional arrays provided by numpy to hold image data.
- **Python:** Python is used to write all the programs and it uses the installed opencv and numpy packages.
- **IDLE:** IDLE is an integrated development environment for Python.
- **Matplotlib:** Matplotlib is a python 2D plotting library which produces publication quality figures in a variety of hardcopy formats and interactive environments across platforms.

Installation and setup:

- **Installing opencv:**
 - Download the opencv_latest.sh script file from the github repository. The link is given below
<https://github.com/jayrambhia/Install-OpenCV/tree/master/Ubuntu>
 - Save the file as opencv.sh

- Navigate to the directory containing this file and change the permissions of the file and give it execution permission

```
chmod +x opencv.sh
```

- Run the script file

```
./opencv.sh
```

- **Installing numpy:**

- Run the command

```
sudo apt-get install python-numpy
```

- **Install matplotlib:**

- Run the command

```
sudo apt-get install python-matplotlib
```

- **Install IDLE:**

- Run the command

```
sudo apt-get install IDLE
```