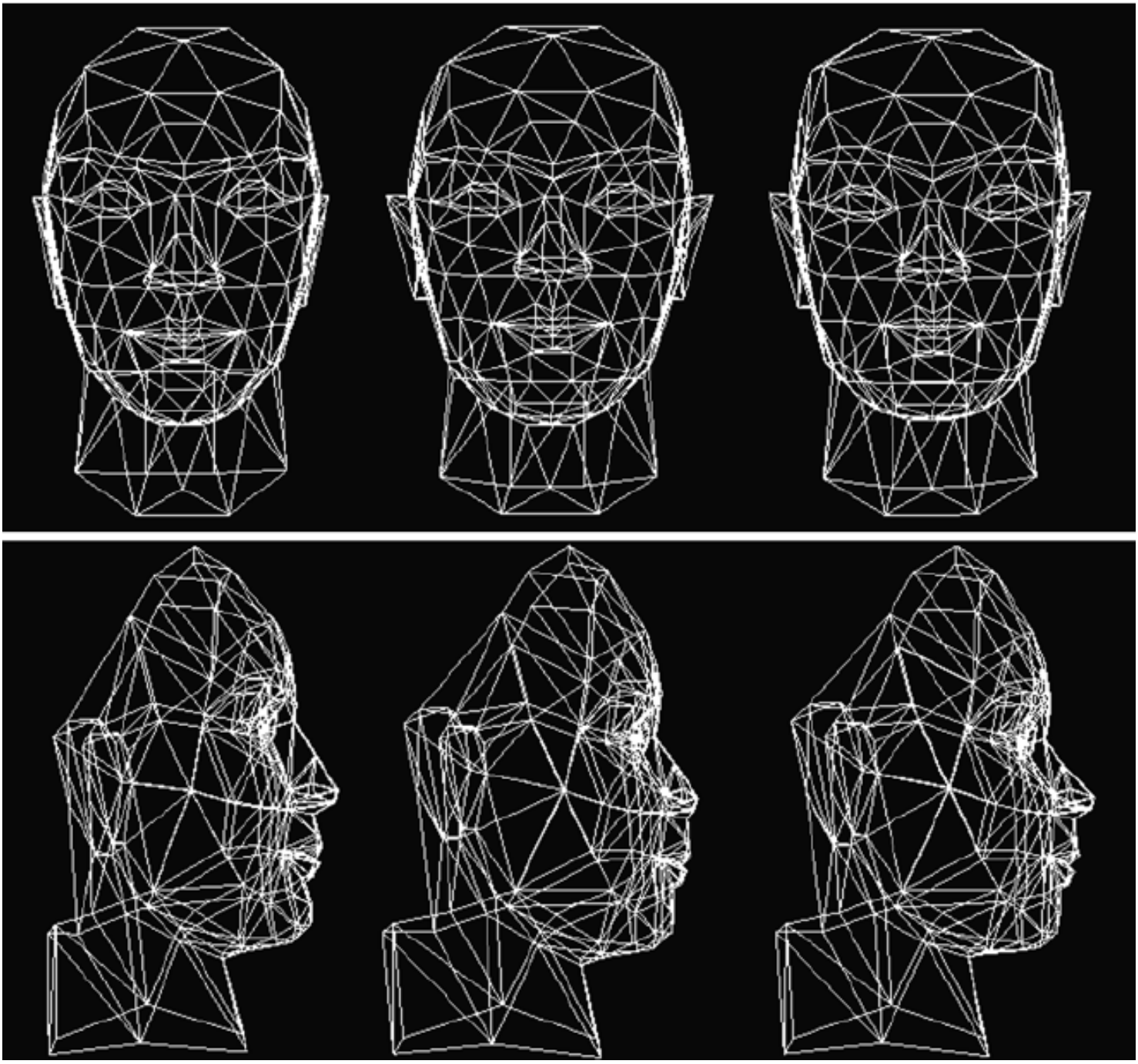

Smart Attendance System (SASY)

USING FACIAL MESH

Table of Contents

Table of Contents.....ii
Revision History ii
1. Introduction.....1
1.1 Purpose….....1
1.2 Intended Audience….....1
1.3 Project Scope….....1
1.4 References….....1
2. Overall Description.....2
2.1 Product Perspective.....2
2.2 Project Plan.....2
2.3 Product Features.....2
2.4 User Classes and Characteristics.....2
2.5 Operating Environment.....3
3. System Features.....4
3.1 Adding a New student…….4
3.2 Use the system to attend to classes……..4
4. External Interface Requirements.....5
4.1 Software Interfaces.....5
Appendix A: Use Case model.....5
References 5

1. Introduction

1.1 PURPOSE

The main purpose of this specification is to help people who will work on this system to maintain the objectives and get started working in this project. This specification will direct people who will work on this project step by step through the process until they finish it successfully. This statement will describe specific details into every step of this project that workers will immediately locate the needs of this system to understand the purpose of doing any of the following steps into the system.

1.2 INTENDED AUDIENCE

The audience of this system will be:
1. Students
2. Faculty members
3. Registration office.

This project will be managed by registration office, created and developed by the IT staff and other specialized people in the technology, such as programming, web design and others.

1.3 PROJECT SCOPE

The scope of the system is to have a high-tech environment. That means by using the automatic attendance system, the data will transferred to the technical environment that they already have the canvas system to help them manage the courses they have in the whole semester. This system will add some features in the automatic attendance system to Canvas by using fingerprint device in every classroom at Gautam Buddha University.

That will help the community use the technology in effective ways:
1. Make the attendee process easier and effective.
2. Help faculty in the attendance process every time.
3. Manage and organize the attendance page through Canvas.

1.4 REFERENCES

DLIB library page, medium.com, Google, geeksforgeeks, stack overflow, etc.

2. Overall Description

2.1 Product Perspective

At Gautam Buddha University, instructors manually take attendance in every class each day. They spend time to do that during class time. The Automatic Attendance System will help them do this process in an easy way. The main scope of this project is to make attendance process more organized in every class. This project will help instructors take the attendance automatically without spending plenty time during the class. It will provide the instructor who is/isn't present an early-warning of high levels of non-attendance through the site. There are also many benefits for students: they can manage their attendance, absences, and late walk-ins by checking the site. They will also know the current grade in their reports. It makes it easier to have a clear picture of every student's attendance throughout the academic year.

Definitions:

Users: This means students who will get the most benefits of the system.

Faculty: Also, who has the top priority to get benefit from the system and they are the target actors of the system.

The Registration Office: This is for the system management, and it will be presented by the employees.

2.2 Project Plan

This project has six phases to be completed within the time line. They are initiating, project plan, components, process model, testing, and feedback. The expected time for the project will take around two days.

2.3 Product Features

The features of this project is to mark the attendance of the students present in the class by simply just taking the pictures of the students that are present in the class. The model is trained by just a bare minimum of a single photo of a student

2.4 User Classes and Characteristics

There are three types of user classes in this community:
1) Students
2) Faculty
3) Registration Office

2.5 Operating Environment

The operating environment that we need is just a basic laptop with a camera/webcam.

The current system work is already in existence. However, we need some system requirements:

1) Web camera
2) Python with few basic libraries
3) Photos of the students

3. System Features

3.1 ADDING A NEW STUDENT:

Function: Sign up a new student to the system.
Priority: Top (Required for first release)
Requirements: To add a new user to the system, you just have to add 1 image of the student in the image folder

3.2 USE THE SYSTEM TO ATTEND TO CLASSES

Function: Attend to classes
Priority: Top (Required for every class attended)
Requirements: The model works in a systematic manner, it has 3 steps:

- First in order to train the model we require 1 photograph of each student.
- Secondly, the model shall be trained via hog method in which it will utilize dlibl library extensively.
- At last it would detect and mark the attendance of students at in go.

4. External Interface Requirements

4.1 Software Interfaces

The system will use:
1) PYQT designer
2) Python compiler
3) Excel to create a csv file and then to create xlsx file

Appendix A: Use Case model

Develop a system that can help the Gautam Buddha university community to take the attendance automatically the target actors are:
1. Students
2. Faculty
3. Registration Office

All the data will be gathered by the facial recognition using a camera.

References:

www.geeksforgeeks.com

www.stackoverflow.com

www.medium.com

www.pypi.org

www.google.com

www.dlib.net