National University of Computer & Emerging Sciences
Karachi Campus

[Online Student Report Management System]
Project Report
Programming Fundamentals
Section: 1E-BSCS

Group Members:
20K-0353 Mohsin Ali Mirza
20K-1054 Syed Muhammad Faheem
20K-0169 Ahmad Aleem

Project Report

Title

Online Student Report Management System (Mini Flex)

Introduction

- **Aim**

The aim of our project is to make the online report portals more optimized and along with more features as nearly in the mere future our whole educational system would be going online. On the other hand, famous online classes platforms don't have this facility to keep track of student records.

Background

- **Project Selection**

Due to the recent rapid growth in the online teaching industry, it has become vital for teachers to seek an alternative to access the student's performance. The existing softwares such as Zoom, or Google Classroom have proved to be an excellent alternative, but are only limited to broadcasting purposes. This project is similar to the flex portal which is the student records holder of our university.

Project Specification

In this project, we have made a complete and proper record of all the students present in a classroom which includes his/her personal data, sessional marks, attendance records,

teacher's comments etc. This data can be accessed and can be edited through a csv file which makes data handling easier. Moreover, there is a feature to keep track of your performance through graphs. Also, the software is user-friendly and interesting to use due to eye-catching text animations. Also, data security has been kept a priority here. This has been done by password randomization, masking and robot captcha.

- **Introduction Screen**

First comes the introduction screen which contains basic information of the project along with the names of the group members.

- **Selection of Portals**

The project consists of two portals.

1) **Student Portal: Here, the students can view their performance with the help of statistics and graphs.**
2) **Teacher Portal: Here, the teacher has the full control. He can add the students, delete students, edit their performance records etc.**

- **Student Portal including the login option and view mode**

Upon entering the student portal, it firstly asks you select the type of view mode and then asks you to login, then it asks the user to enter his credentials. If the credentials are correct then the program leads him towards his database.

- **Teacher Portal including different modes like add, edit, delete**

Upon entering the teacher's portal, the program asks to login, and then asks the user to enter his credentials. If the credentials are correct, it takes the user to the next screen which gives the user some crucial options which include adding a student, deleting a student, edit his records.

- **Animation and other features**

The program consists of some interesting, eye-catching visuals such as text animation and loading screen.

Problem Analysis

The main problem coming up front was that there wasn't a proper student report management system on the popular online classes tools such as Zoom and Google Meet and we thought that there is a need of a proper database holder which could cope up with the academic performances of the students taking online classes.

Solution Design

The solution design of the project is based on the following features:

- **Features**
  - **Proper Student Database**
  - **Text Animation**
  - **Students could analyze their performances through graphs**
  - **Filing done on .csv files**
  - **Students can view their separate personal performances**
  - **Uses captcha for human identification**

- **Only the teacher has the right to view, add and edit student data**
- **Randomization and masking of passwords for better security**

Implementation

We implemented all the possible features and techniques in C language to develop our project. Some of the implementations are as following:

- **Conditional Statements**
- **Loops**
- **Recursions**
- **Custom Libraries**
- **Functions/Nested Functions/Pass by value and reference**
- **Structures/Nested Structures**
- **Pointers**
- **Arrays/Strings**
- **Pre-defined Structures/Functions**
- **Filing on .csv files**

Project Breakdown Structure

- **Work Distribution**

The project was divided into three parts which were the skeleton of the project, database and filing and these all requirements were made possible due to the combined effort of all the group members.

- **Skeleton of the Project**

The first thing which was decided before starting the project was the number of screens, how the screens will switch, and the representation of the project.

- **Database**

Then, we moved towards to making a database of all the options we decided to put in. This part of the project took most of our time.

- **Filing**

In the end, the only thing which was left was filing. We didn't store our database on ordinary text files. Instead, we chose a more practical and easy to handle approach which was doing filing on csv files. It took a lot of research to accomplish this task.

Results

The above-described features are perfectly working and we assure you that there are no common bugs in this code.

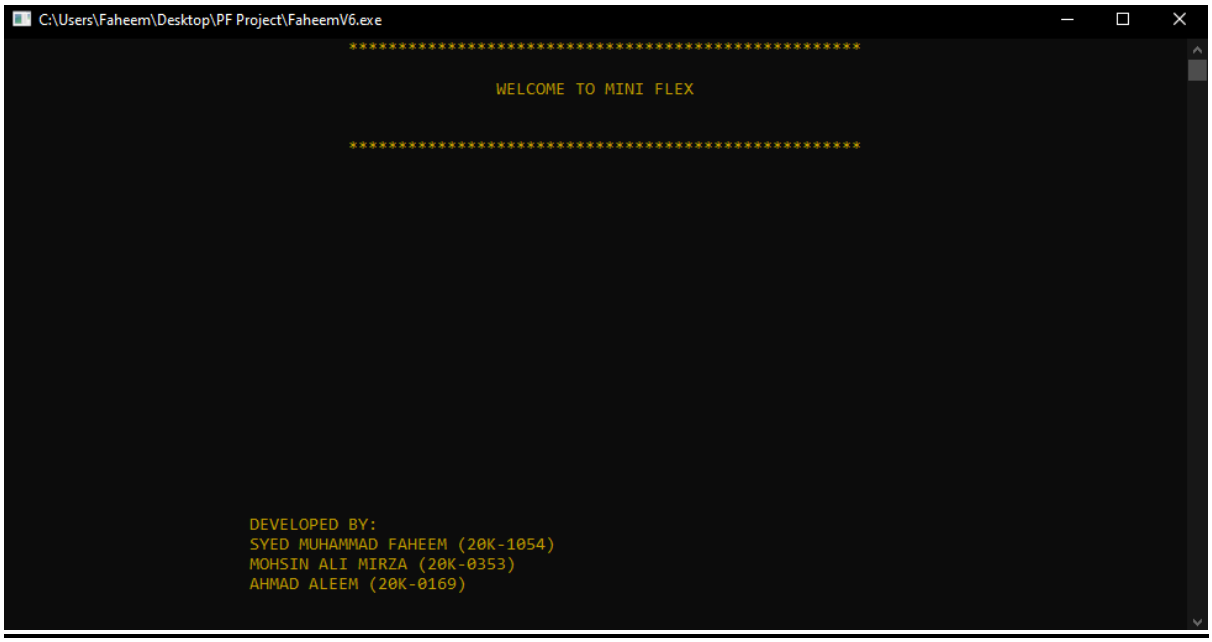
Conclusion

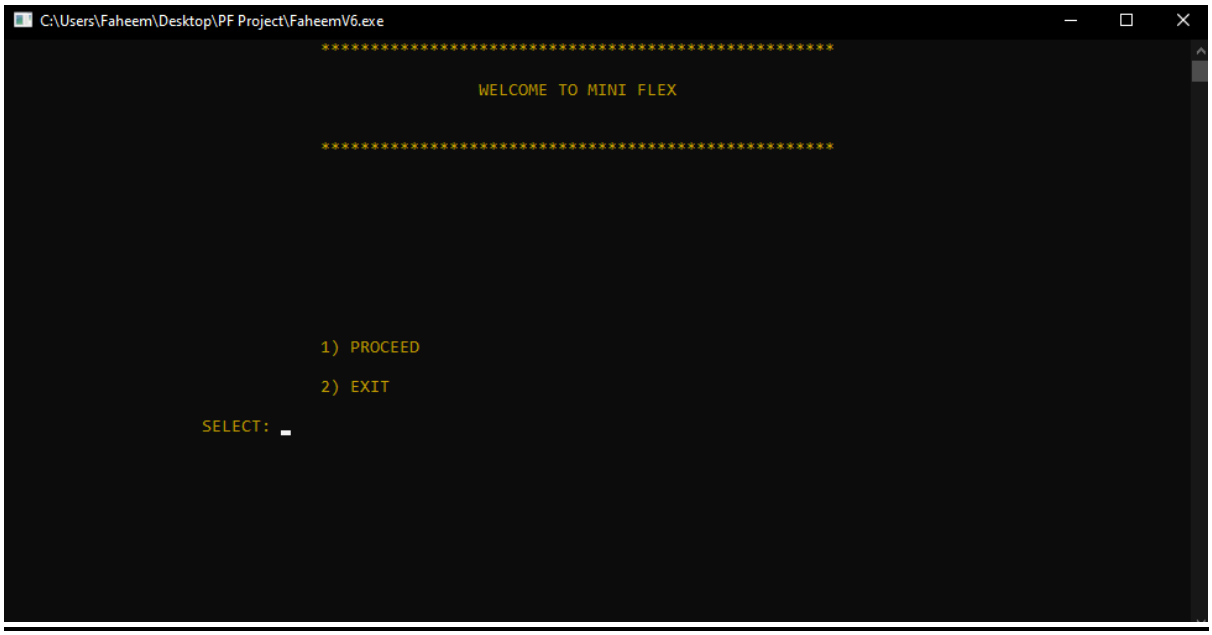
We succeeded in making a successful database for an online educational system. In conclusion, additional features can be added to this project such as registration of a new database, more aspects to monitor class performance of the students, arithmetic operations on student's marks of all sessionals can be implemented etc.

Snapshots of the Project

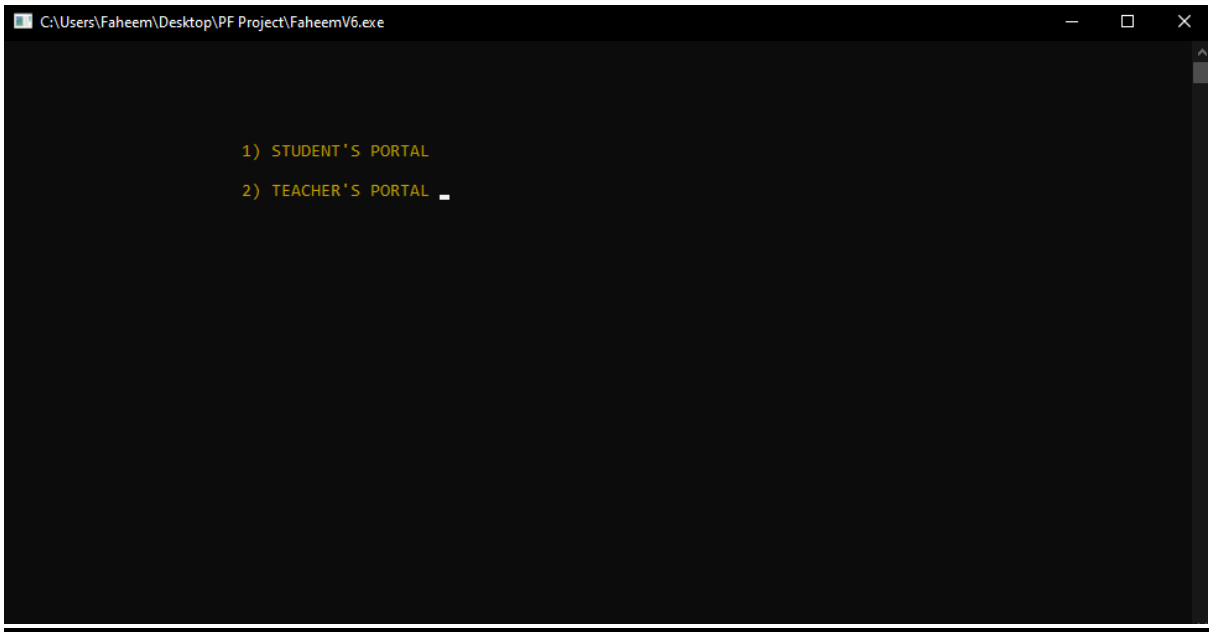
Some pictures of the output of our project are as following:

The INTRO SCREEN





The PORTALS



STUDENT PORTAL

TEACHERS PORTAL