Table of contents

Here we introduce:-

|  |
| --- |
| Topic: University system |
| Cover page:Project overview | Page1 |
| Table of contents:Topics and page number | Page2 |
| Project team:Who did what in the team | Page3 |
| Introduction and Abstraction:What is the project | Page4 |
| Content description:Person class (abstract class)Student classEmployee classManager classcourse classdepartment classuniversity classfaculty class | Page5 |

How to work together

First, there was coordination and understanding among the team members, which made it interesting to accomplish this work.

Sarah Omar:

I started opening the project with an abstract class called a person who have a virtual function which will have a different implementation in the subclasses, then I created four classes that inherit from the abstract class and they are called employee, instructor, student and a singleton class called manager, then we created two classes. Department and course class. The department class has two functions named details and add (class name) we pass the course class for these two functions.

Hadeer Badr:

I had already started working on my part of the project, so I created a faculty class that contains a vector from the previous classes, and also contains the same two functions details and add (class name) the details function. It reads from the file, and the add function writes in the file, and we repeated this function with four classes: student, employee, instructor and department class. I also created the university class, and it contains both functions for faculty.

 In the end, we worked together on the main function, so we created an object from each class and a set of choices. Each class represents a number from 1 to 6 that calls the function. For each class, to facilitate the selection process.

***The Introduction***

We started working on the idea of making a system for the university, so we worked with classes to take advantage of its advantages such as inheritance, the abstract class, etc... So we created a class for each object, so we started by creating an abstract class for a person and a group of classes that inherit from it, and they are the student, employee, manager, and instructor class, and we created the director class Singleton type to create only one object from this class, as well as a university and college class, and work on reading and writing from files.

***Abstraction***

We finished the project by making a well-functioning university system by working on all classes and linking them by inheritance, and also using an abstract class to implement a specific funk in each class, a different implementation, pass the classes to the function in the college class, and finish the project in the main funk by making choices through if else and executing the function for each class in specific choice.

Course class:

We created this class with its own attributes such as name and id and a different implementation of the detail function.

Department class:

This class contains a vector that carries an object from the course class and a function we pass the details to it in the course class, and it reads from the file and another function called an add\_class name that writes on the file.

University class:

These classes have a vector of faculty and a pointer from the manager class and a function we pass the details to it in the faculty class, and it reads from the file and another function called an add\_class name that writes on the file.

Faculty class:

This class has a vector of student, instructor,employee and department and a function for these classes. We pass the details to it in each class, and it reads from the file and another function called an add\_class name that writes on the file.

Main function:

So we created an object from each class and a set of choices. Each class represents a number from 1 to 6 that calls the function. For each class, to facilitate the selection process.