

M1I326580

23/24 A

PROGRAMMING FOR CYBER SECURITY AND NETWORKS 1

Final Coursework

This coursework is 100% of your module mark

This is an individual-based coursework

Submission deadline: 20/12/2023 at 23:59

Scenario:

As a Python developer, you are hired by an educational organisation to develop a self-service student registration program using Python 3.x.

This system shall include the following options:

- 1) Student registration
- 2) Module selection and verification
- 3) Student account top-up
- 4) Shopping (including printing and food)
- 5) Checking Balance
- 6) Edit information
- 7) Reporting

The program is always running, and students can register themselves in the system. To stop the program user shall enter "q" or "Q".

The program should save students' information in a CSV file and reload the CSV file if the program restarted.

Consider the following options (50 Points):

- You must use Object-oriented programming (OOP) **(20 Points)**
- Program structure, commenting, using meaningful names for variables and functions **(5 Points)**
- Exception handling **(5 Points)**
- Saving students' information in a CSV file and reading the file at the start of the program **(5 Points)**
- Video Presentation **(15 Points):**
 - Test run all the components of the program
 - Explain the code implementation for the different options.

Consider the following options (50 Points):

1) Student registration: (8 Points)

- Students must enter their information including name, last name, age, contact number, email address, and create a password. **(3 Points)**
- By default, the program must assign a unique student ID between 1 to 10000. **(2 Points)**
- The program should allocate 400 points to each registered student account automatically (students can use these points for shopping) **(1 Point)**
- The system must print the allocated student ID on the screen (Student uses his/her ID for access to the rest of system functions) **(1 Point)**
- The program must return to the main page. **(1 Point)**

2) Module selection and verification: (8 Points)

- The program must authenticate the student access using student ID and password. **(2 Points)**
- Students should be able to choose two different modules out of the following modules (more than two modules is not possible and editing modules is not possible): **(4 Points)**
 - Programming 1
 - Programming 2
 - Networking 1
 - Networking 2
- Students should be able to view their current selected modules. **(1 Points)**
- The program should allow the user to return to the main page. **(1 Point)**

3) Student account top-up: (6 Points)

- The program must authenticate the student access using student ID and password. **(1 Point)**
- Students should be able to deposit points in his/her point account. The program should confirm the requested points with the user before adding them into his/her account. **(4 Points)**
- The program must return to the main page. **(1 Point)**

4) Shopping (printing and food): (12 Points)

- The program must authenticate the student access using student ID and password. **(1 Point)**
- Students should be able to print and buy food from the system:
- Each page print (single or double) costs 1.25 points (Students can print as many as pages they want as long as they have enough points)
- Each food portion costs 7.5 points (Students can order as many as portions they like as long as they have enough points) **(8 Points)**
- The system should print the cost of total shopping and balance after shopping. It should generate a random number for the student as a coupon. **(2 Points)**
- The program should allow the user to return to the main page. **(1 Point)**

5) Checking Balance (3 Points)

- The program must authenticate the student access using student ID and password. **(1 Point)**
- The program should print the student balance on the screen and return to the main page. **(2 Points)**

6) Edit information: (8 Points)

- The system must authenticate the student access using student ID and password. **(1 Point)**
- The student must only have the options to edit the email address, phone number and the password. **(6 Points)**
- The program should allow the user to return to the main page. **(1 Point)**

7) Reporting: (5 Points)

- The system must authenticate the student access using student ID and password. **(1 Point)**
- The program should present all the information related to the authenticated student (Except password). **(4 Points)**

*******End of the Coursework*******