

Module 4

C, Objective C and SWIFT - MADP 401 (140 hours/7 weeks)

Project1: Basic Educational Portal

Due: 5:30pm, TUESDAY FEB 7th, 2017

Requirements

- The project can be done in groups of 2 students.

Attachments

- There are 4 text files in addition to this project description. The name of the files are as following. These files are sample files and you can use them while you are implementing this project.
 - Accounts.txt
 - Students.txt
 - Courses.txt
 - StudentsCourses.txt

Project Description

- In this project you are going to implement a basic educational portal. Through this portal the students can login to the portal through a login view and perform some actions that are available to them. In this section we describe the detail of the login feature and other functionalities available on the portal.

Login View: Once you run the program, the following view is shown to the user:

Please enter your account to login:

Username:

Password:

If the username and password were correct then the program prints the following message and keeps the message on screen for 2 seconds and then prints the main menu. If the username or password was wrong then the program informs the user using the following error message and asks the user to try again.

If username and password were correct:

Welcome to Cornerstone International College of Canada.

If the username or password was wrong:

Your account does not exist. Please try again!

Once the user successfully entered his/her username and password the program shows the above welcome message for 2 seconds and then prints the following main menu:

Select from the options:

—[1] Print my enrolment certificate

—[2] Print my courses

—[3] Print my transcript

—[4] Print my GPA

—[5] Print my ranking among all students in the college

—[6] List all available courses

—[7] List all students

—[8] Logout

—[9] Exit

Enter the number corresponding to each item to proceed:

The user enters a number between 1 and 9 every time to perform the corresponding functionality.

- Print my enrolment certificate: If the user entered '1', the program prints the following information from the user in the following format. And then prints the main menu again.

Dear Sir/Madam,

This is to certify that Mr. Peter Brown with student id 7813007 is a student at grade 1 at CICCC. He was admitted to our college in 2011 and has taken 1 course(s). Currently he resides at 850 West Vancouver, Vancouver.

If you have any question, please don't hesitate to contact us.

Thanks,
Williams,

- Print my courses: If the user entered '2', the program prints all the courses the student has taken in the following format. And then prints the above main menu again.

Hi Mr. Peter Brown,
You have taken the following courses:

- 1) **MADP101: Objective-C**
- 2) **MADP202: Project Management**
- 3) **MADP301: Java Programming**
- 4) **MADP401: Android Programming**

- Print my transcript: If the user entered '3', then the program prints the transcript of the user in the following format and then prints the above menu.

Hi Mr. Peter Brown,
Here is your transcript:

- 1) **MADP101: Objective-C: 80**
 - 2) **MADP202: Project Management: 45**
 - 3) **MADP301: Java Programming: 64**
 - 4) **MADP401: Android Programming: 70**
- YOUR GPA IS: 64.75**

- Print my GPA: If the user entered '4', then the program prints the gpa of the student in the following format and then prints the above main menu.

Hi Mr. Peter Brown,
Your GPA is 64.75

- Print my ranking among all students in the college: If the user enters '5', the program will find the rank of the student based on his/her gpa and print it and then print the above main menu.

Hi Mr. Peter Brown,
Your GPA is 64.75 and therefore your rank is 3.

- List all available courses: If the user entered '6', the program will print the list of all available courses in the college in the following format and then print the menu.



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The following courses are offered in CCCCC:

- 1) **MADP101: Objective-C**
 - 2) **MADP102: Object-Oriented Programming**
 - 3) **MADP201: Problem Solving**
 - 4) **MADP202: Project Management**
 - 5) **MADP301: Java Programming**
 - 6) **MADP302: Web Development**
 - 7) **MADP401: Android Programming**
 - 5) **MADP402: iOS Applications**
- List all students in the college: If the user enters '7', the program will print the list of all students in the college in the following format and then print the menu.
There are 4 students in CCCCC as following:
 - 1) **Peter Brown: 7813007**
 - 2) **Joseph Rod: 812345**
 - 3) **Cristina Li: 8012333**
 - 4) **Adams Wang: 7812999**
 - Logout: If the user entered '8', the program will print the login menu and let the user login again with the same or different account.
 - Exit: If the user entered '9', the program terminates.

Project Data

- The data you need for this project is stored in the 4 text files mentioned in the attachments part. Your program should use the data in these files to be able to do the other functionalities. You need to do self-study and learn how to read from a text file. You don't need to write to or edit the files.

Project Demo

- On the demo day (Tuesday), I will provide you with 4 files with the same name as sample files mentioned in the attachments section:
 - Accounts.txt
 - Students.txt
 - Courses.txt
 - StudentsCourses.txt



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- The format of data in these files will be exactly the same as the format of data in the sample files but the content will be different.
- You will use these new files to run and demo your program.

Evaluation

- The project will be marked out of 100.

Suggested Approach

- Read the project description very carefully.
- Divide the project into several smaller problems as much as you can. Each sub-problem should be small enough to be implemented using a function.
- Think about the functions you need to implement. What are the input and return type of those functions? What are the names of the functions?
- Write a function for each sub-problem.
- Think about how the functions should call each other in order to perform the functionalities required for this project.
- Think about the data structures you need for the project. For instance what arrays do you need? What struct do you need? What variables do you need?
- Use some sample code to understand how C will read from text files.

Bonus Problem (optional)

The bonus part challenges your program. 4 files with exact same names as sample files will be provided. But the data in the files might be not valid. For instance the student id for one student might be missing. We will use these files to run and demo your program and will see how your program will react to these situations.

A successful demo of the bonus part has 20% additional points.