

LAB211 Assignment

Type:
Code:
LOC:

Short Assignment
J1.S.P109
50

Title

Manage course information.

The program provides course information so students can prepare their study registration plans.

Background

Understanding encapsulation and inheritance in object-oriented programming.

Program Specifications

-
- Write a program to create a class called "Course" with attributes for course name, instructor, and credits. Create a subclass "OnlineCourse" that adds attributes for platform and duration. Create a subclass "OfflineCourse" that adds attributes for platform and duration.
- Class Course
 - o Attributes: course ID, course name and credits.
 - o Methods:
 - A constructor method without parameter: set all integer attributes is 0 and all string attributes are "".
 - InputAll() method allow user input value of all attributes in format. If data input is invalid, the program show error message.
 - course name and course ID are unique and not empty
 - credits is greater than 0
- Class OnlineCourse: it's parent class is Course
 - o Attributes: platform, instructors and note
 - o Methods:
 - A constructor method without parameter: set all integer attributes is 0, and all string attributes are "".
 - InputAll() method allow user input value of all attributes in format. If data input is invalid, the program show error message "Data input is invalid" immediately.
 - platform and note are not empty
- Class OfflineCourse: it's parent class is Course
 - o Attributes: begin, end, campus
 - o Methods:
 - A constructor method without parameter: set all integer attributes is 0, and all string attributes are "".
 - InputAll() method allow user input value of all attributes in format. If data input is invalid, the program show error message "Data input is invalid" immediately.
 - teacher name and campus is not empty
 - begin and end are future and begin before end

Function details:

1. Add online course/ offline course

2. Update course
3. Delete course
4. Print all online course / offline course
5. Print all course
6. Search information base on course name

Examples: (the blue text is data input)

```
*** Course Management ***
1. Add online course/ offline course
2. Update course
3. Delete course
4. Print all / online course / offline course
5. Search information base on course name
6. Exit
You choose: 1
*** Add new course ***
Online (O) or Offline (F): Online
Data input is invalid
Online (O) or Offline (F): O
Create new online course
Course ID:
Data input is invalid
Course ID: SWE201c
Course name: Software Development Lifecycle Specialization
Credits: 0
Data input is invalid
Credits: 2
Platform: Coursera
Instructors: Kevin Wendt and Praveen Mittal (University of Minnesota)
Note: 4 course series

*** Course Management ***
1. Add online course/ offline course
2. Update course
3. Delete course
4. Print all / online course / offline course
5. Search information base on course name
6. Exit
You choose: 1
*** Add new course ***
Online (O) or Offline (F): F
Create new offline course
Course ID: SWE201c
Data input is invalid, ID must be unique
Course ID: PRO192
Course name: Object Oriented Programming with Java
Credits: 3
Begin: 3/9/2024
End: 30/8/2024
Data input is invalid, end must be after begin
End: 30/11/2024
```

Campus: **CanTho**

*** Course Management ***

1. Add online course/ offline course
2. Update course
3. Delete course
4. Print all / online course / offline course
5. Search information base on course name
6. Exit

You choose: **2**

*** Update course ***

Course ID: **SWEc**

No data found, do you want to find again? (Y/N): **Y**

Course ID: **SWE201c**

*** Search results ***

Course ID: SWE201c

Course name: Software Development Lifecycle Specialization

Credits: 3

Platform: Coursera

Instructors: Kevin Wendt and Praveen Mittal (University of Minnesota)

Note: 4 course series

*** Updating ***

Note: Enter empty if you don't want to change it.

Course ID:

Course name:

Credits: **3**

Platform:

Instructors:

Note:

Updated successfully

*** Course Management ***

1. Add online course/ offline course
2. Update course
3. Delete course
4. Print all / online course / offline course
5. Search information base on course name
6. Exit

You choose: **3**

*** Delete course ***

Course ID: **SWEc**

No data found, do you want to find again? (Y/N): **N**

*** Course Management ***

1. Add online course/ offline course
2. Update course
3. Delete course
4. Print all / online course / offline course
5. Search information base on course name
6. Exit

```
You choose: 4
*** Print course ***
Do you want to print all (A), online course (O) or offline course (F): A
Course ID-Course name-Credits
SWE201c-Software Development Lifecycle Specialization-3
PRO192-Object Oriented Programming with Java-3

*** Course Management ***
1. Add online course/ offline course
2. Update course
3. Delete course
4. Print all / online course / offline course
5. Search information base on course name
6. Exit
You choose: 4
*** Print course ***
Do you want to print all (A), online course (O) or offline course (F): O
Course ID-Course name-Credits-Platform-Instructors-Note
SWE201c-Software Development Lifecycle Specialization-3-Coursera-Kevin Wendt and
Praveen Mittal (University of Minnesota)-4 course series

*** Course Management ***
1. Add online course/ offline course
2. Update course
3. Delete course
4. Print all / online course / offline course
5. Search information base on course name
6. Exit
You choose: 5
*** Searching ***
Course ID: SWEc
No data found, do you want to find again? (Y/N): Y
Course ID: SWE201c
*** Search results ***
Course ID: SWE201c
Course name: Software Development Lifecycle Specialization
Credits: 3
Platform: Coursera
Instructors: Kevin Wendt and Praveen Mittal (University of Minnesota)
Note: 4 course series

*** Course Management ***
1. Add online course/ offline course
2. Update course
3. Delete course
4. Print all / online course / offline course
5. Search information base on course name
6. Exit
You choose: 6
BYE AND SEE YOU NEXT TIME
```

Expectation of User interface:

No specific UI required. The program should run in the console.

Guidelines

(None)

Suggestion:

Use simple and clear code.