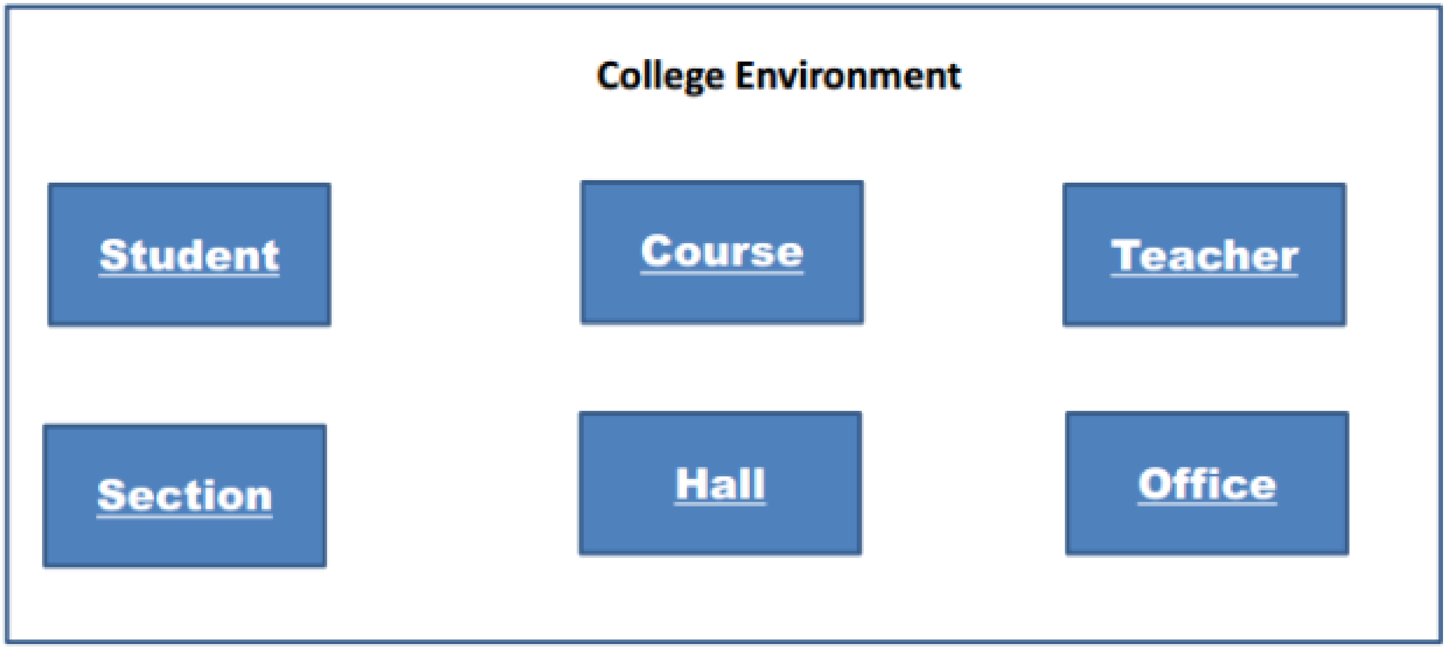
OBJECT-ORIENTED PROGRAMMING

LAB3 :OOP_CONCEPTS

OOP Concepts

Objects in College Management Program



OOP Concepts

Example1:

- Write a class named rectangle contains two properties(width and height) also the class should contain three method first for calculating the area of the rectangle second method calculate the perimeter of the rectangle and last one a print method that print the dimensions of the rectangle ,create two instance of the rectangle and invoke the methods.

OOP Concepts

Example2:

- Write a class named **Student** that has four fields: **name**, **age**, **dept**, and **level**.
- Overload the constructor .
- The default constructor should print this message **"Welcome"** and set these default values to the class fields: **"Unknown"**, **20**, **"CS"**, **1**
- And the parameterized constructor.
- The Get_Information is method print all information about student.
- Add new static field NumOfStudents.

OOP Concepts

Class Student

Data

1. student_name
2. student_ID
3. student_Age
4. student_Dept
5. student_Level

Operation()

1. Student()
2. Student(name,ID,age.dept,level)
3. Get_Information()

Student1

Data

1. student_name
2. student_ID
3. student_Age
4. student_Dept
5. student_Level

Operation()

1. Student()
2. Student(name,ID,age.dept,level)
3. Get_Information()

Student2

Data

1. student_name
2. student_ID
3. student_Age
4. student_Dept
5. student_Level

Operation()

1. Student()
2. Student(name,ID,age.dept,level)
3. Get_Information()

OOP Concepts

- في هذا المثال نحاول نطبق المفاهيم الأساسية بمعنى اول ننشأ الفصل من غير دالة بناءة ثم نعمل Defaultثم نضيف parameterizedثم نلغي الأثنين و ننشأ واحدة privateو ناكد ان المعالج لم يعطي لنا default
- نناقش الكلمة   this متى تكون مطلوبة و الى ماذا تشير
- نضيف حقل staticوهو عبارة عن عدد الطلاب الذين تم إنشاؤهم (نناقش عملية استخدامه)
- نحاول نطبق destructorsباستخدام GC.collector();

OOP Concepts

Exercise3.1

1. Write a class named **Employee** that has three fields: **name**, **salary**, and **address**.
2. The default constructor should print this message **"Welcome to our company"** and set these default values to the class fields: **"Unknown"**, **30000**, **"Mukalla”**
3. **Parameter constructor takes name of employee ,and set salary=40000,address=“Mukalla”**
4. **Method (print) to print information**

OOP Concepts

Exercise 3.2

1. Create a Console application;
2. Create a class named Client;
3. Add the following properties to your Client class : FirstName, LastName, Email, Address, PhoneNumber;
4. Create a parameter and a default constructor for the client class

Generic List<T> Collection Class in C#

- This Generic List<T> Collection Class represents a strongly typed list of objects which can be accessed by using the integer index which is starting from 0.
- It also provides lots of methods that can be used for searching, sorting, and manipulating the list of items
- Syntax

```
List<string> countries = new List<string>();
```

Generic List<T>Collection Class in C#

List<T> Class   Methods

- Add(T) This method is used to add an object at the end of the list. ...
- Clear() This method is used to remove all the elements from the list. ...
- Insert(Int32, T) This method is used to insert an element at the specified position in the list. ...
- RemoveAt(Int32) remove element by index
- Remove(T) remove specific element