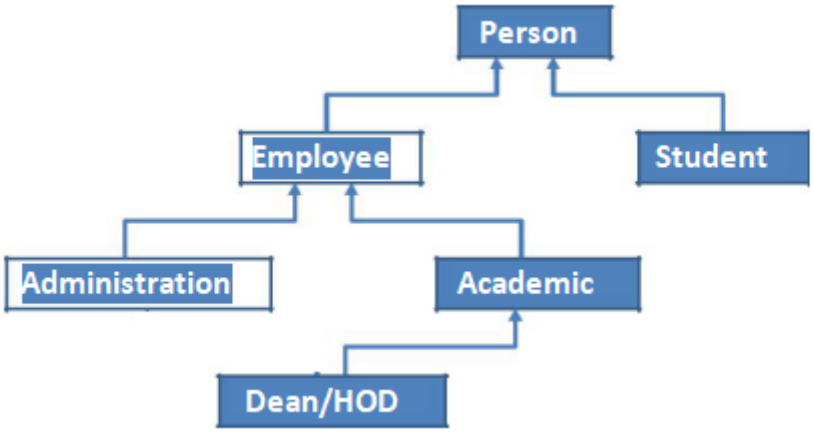
Object Oriented Paradigm
Lab 10
Topic(s): Inheritance (Public, Protected & Private), Object Slicing

IMPORTANT INSTRUCTIONS:
Please keep in mind the following points while coding. Violating any of these will result in credit deduction.

- There should be no memory leakage in your class. There should be no dangling pointers.
- Make functions, objects, variables as constant wherever possible.
- Create Default, Parameterized and Copy Constructor whether mentioned or not.
- Create Setters and Getters for all attributes.
- Follow the appropriate naming conventions as explained in class.
- Submit your files following the submission format explained in class.

Task 1:



Consider the following details of all classes for class hierarchy shown in above figure of this lab.

- Class ***Person*** holds
  - Two public attributes i.e. ***name*** and ***year_of_birth***
  - A ***two-argument constructor*** to initialize its data members with user-defined values
  - A function named ***display()*** to show the values of all attributes (including inherited attributes)

- Class ***Student*** (privately inherited from Person) has
  - Two Private attributes i.e. ***studentID*** and ***enrolledSemester***
  - A ***four-argument constructor*** to initialize its data members (including inherited data members)

- A function named ***display()*** to show the values of all attributes (including inherited attributes)

- Class ***Employee*** (publicly inherited from Person) contains
  - Five attributes i.e. ***employeeID***, ***joiningYear***, ***jobTitle*** (designation of an employee), ***courseID***, and ***courseTitle***
  - A function named ***display()*** to show the values of all attributes (including inherited attributes)

- Class ***Administration*** (privately inherited from Employee) has
  - A ***parameterized constructor*** to receive five arguments to initialize inherited attributes from class (Concerning ***courseID*** and ***courseTitle***, only ***null*** value is allowed to set for an admin officer)
  - Two functions i.e. ***setJobTitle(employee)*** and ***getJobTitle(employee)*** to set and get job title of an employee
  - A function named ***display()*** to show the values of all attributes (including inherited attributes)

- Class ***Academic*** (publicly inherited from Employee) has
  - A ***parameterized constructor*** to receive five arguments to initialize inherited attributes from class (Concerning ***employeeID***, ***joiningYear***, and ***jobTitle,*** only null value is allowed to set***)***
  - Two functions i.e. ***setCourseID()*** and ***setCourseTitle()***

- Only an instance of class ***DeanHOD*** should be able to modify values for ***employeeID, designation of an employee***, ***ID*** and ***name of a particular course***.

Implement all these classes and within the ***main*** function, create instances of all classes (except class ***Employee***) and test the described working of all these classes. Also implement a global printing function that ensures the object slicing for each class.