**Object Oriented Programming**

**Lab-14**

|  |  |
| --- | --- |
|  | |
| **Topic** | Diamond Problem |
| **Objective/**  **Outcome** | Making students familiarize with the concepts of Rules of Inheritance, Access Specifiers, Abstract Class and Polymorphism. |

**Note:**

1. Please do not use cin in setter and cout in getter
2. Comment your code
3. **Use meaningful variable names and follow the naming convention.**
4. Name of the program should be same as the task name. i.e. the first program should be

Task\_1.cpp

**Case Study On Diamond Problem**

Design and implement a class hierarchy for XYZ, Lahore Campus employees. We are interested in modelling only the managers and faculty. Director shall be treated as a Manager. The following information for each employee needs to be captured.

First Name, Middle Initial, last name, Department.

All of above are type string except Middle Initial that is of type character.

All Managers belong to certain Level which are numbered 3 through5. Director is both a faculty member as well as Manager, but does not belong to any level. Each Faculty member is either professor, Associate or Assistant Professor.

We are only interested in creating objects of different types of employees and a function that prints the relevant information for each employee.

For Manager the output of function should be of the form:

First Name, Middle initial, Last Name, Department Level for Director the output of function should be of the form:

First Name, Middle initial, Last Name , Department “Director” for Faculty the output of function should be of the form:

First Name, Middle initial, Last Name, Department Position

Note: Make UML diagram of the above problem on page by mentioning different classes inter related to each other. Also avoid from replication of data in the director class when you are going to print information. Find the solution of replication of data members.