

## Lab 10: Polymorphism

The Government is interested to create a **Directory** for peoples of Bangladesh. As Bangladesh is a large country here the government has decided to create **NationalDirectory** and **LocalDirectory** and **Profession** separately. Here all the classes will inherit information from class **Directory**. Your task is to write a program using OOP's inheritance and polymorphism concept for Government of Bangladesh. The government has already mentioned member data and member functions for each class with function's return type. See the table below:

Class	Member data (Protected)	Member function/method (Public)
Directory	<b><i>string personName;</i></b> <b><i>string dateOfBirth;</i></b>	<b><i>void setPersonInfo(string pn, string db)</i></b> { //complete the method to set name and dob. //No cout here } <b><i>virtual void displayInfo()</i></b> { //complete the method to show name and dob }
NationalDirectory	<b><i>int personAge;</i></b> <b><i>string personCity;</i></b>	<b><i>void setPersonAge(int age)</i></b> { //complete the method to set age. No cout } <b><i>void setPersonCity(string city)</i></b> { //complete the method to set city. No cout } <b><i>void displayInfo()</i></b> { //complete the method to sow age and city }
LocalDirectory	<b><i>string personAddress;</i></b> <b><i>string personTelNo;</i></b> <b><i>string personLocalArea;</i></b> <b><i>double zipCode;</i></b>	<b><i>void setPersonAddress(string address)</i></b> { //complete the method to set address. No //cout } <b><i>void setPersonTelNo(string telNo)</i></b> { //complete the method to set phone //number. No cout } <b><i>void setPersonLocalArea(string Larea)</i></b> {

		//complete the method to set area. No cout } <b><i>void setPersonZipcode(double zc)</i></b>
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		{ //complete the method to set post code. No //cout } <b><i>void displayInfo()</i></b> { //complete the method to show address, //phone number, local area and post code }
Profession	<b><i>string personProfession; string personInstitution; string personGrade; double personSalary;</i></b>	<b><i>void setPersonProfession(string prof)</i></b> { //complete the method to set profession. //No cout } <b><i>void setPersonInstitution(string inst)</i></b> { //complete the method to set institution. //No cout } <b><i>void setPersonGrade(string Pgrade)</i></b> { //complete the method to set pay grade. //No cout } <b><i>void setPersonSalary(double s)</i></b> { //complete the method to set salary. No //cout } <b><i>void DisplayInfo()</i></b> { //complete the method to show profession, organization, pay grade and salary }

**You are not allowed to use any constructor in the program.**

**You are not allowed to use any *cin***

In the *main()*,

1. create a pointer *\*person* with the reference of *directory* Class
2. Create an object *p* and point the pointer object towards *p*.
3. Access the *displayInfo()* method to show name and dob.
4. Next, create objects with reference to *NationalDirectory*, *LocalDirectory* and *Profession* class.
5. Point the pointer object towards these object and access *displayInfo()* methods in the derived classes using base class pointer . A sample output is show below:

```
Name = S Ahmed
DoB = 24/07/1968
Age = 45
City = Dhaka
Address = House-3,Road 18
Tel = 017542140
Local Area = Gulshan 2
Zip code = 1211
Profession = Lecturer
Institution = AIUB
Grade = Band-6
Salary = 50000
```