Return your answers in Tuubi before deadline!

1. **Single Inheritance** (https://www.tutorialcup.com/cplusplus/inheritance.htm#single-inheritance). Implement a base class **Staff** with two private properties **char name[50]** and **int code**. Furthermore class Staff contains two public methods **getdata** and **display**. Implement a derived class **Typist** which is public. This class contains one private property **int speed** and two public methods **getdata** and **display**. In base class method **getdata** asks **name** and **code** (figure 1). In derived class method **getdata** asks **speed** (figure 1). In base class method **display** prints **name** and **code** (figure 1). In derived class method **display** prints **speed** (figure 1). In main function you must create one **Typist** object. Then you have to asks name, code and speed with **getdata** methods. Furthermore you have to print name, code and speed with **display** methods. Sample print is in figure 1.

   theory:

Figure 1. Sample print in Dev C++ -program

2. **Multiple Inheritance**. Implement a class **Petrol** which inherits class **Fuel** and **Liquid**. In https://www.tutorialcup.com/cplusplus/inheritance.htm#multiple-inheritance you'll see the idea of **multiple Inheritance**. In class **Liquid** is one property **specific_gravity** and two methods. Input method request to give value of property **specific_gravity**. Output method prints a value of property **specific_gravity**. In class **Fuel** is one property **rate** and two methods. Input method request to give value of property **rate**. Output method prints a value of property **rate**. In class **Petrol** are two methods. Input method of class **Petrol** refers to input methods of both base classes. Furthermore Output method of class **Petrol** refers to output methods of both base classes. In main program you have to create one petrol object. Then you have to print text "Enter data" and refer to input method of **Petrol** class. In the end you have to print text "Displaying data" and refer to output method of **Petrol** class. Sample print is in figure 2.

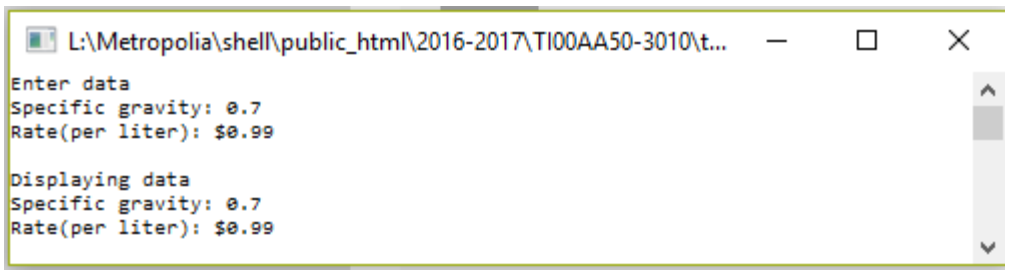

Figure 2. Sample print in Dev C++ -program

3. **Hierarchical inheritance** (https://www.tutorialcup.com/cplusplus/inheritance.htm#hierarchical-inheritance). Implement a base class **Person**, derived class **Student** and derived class **Employee**. The class **Person** contains properties **name**, **gender** and **age**. It contains also method **getdata** and **display**. Method **getdata** requests values of properties **name**, **gender** and **age** (figure 3, input 1 and input 2). Method **display** print values of properties **name**, **gender** and **age** (figure 3, output 1 and output 2). The class **Student** contains properties **institute** and **level**. It contains also method **getdata** and **display**. Method **getdata** requests values of properties **institute** and **level** (figure 3, input 1 and input 2). Method **display** print values of properties **institute** and **level** (figure 3, output 1 and output 2). The class **Employee** contains properties **company** and **salary**. It contains also method **getdata** and **display**. Method **getdata** requests values of properties **company** and **salary** (figure 3, input 1 and input 2). Method **display** print values of properties **company** and **salary** (figure 3, output 1 and output 2). In main program you have to create **Student** and **Employee** object. Then it prints text "Student" and text "Enter data" (figure 3). Furthermore you have to call method getdata of student and print text "Displaying data". After that you have to call method display of student. Then it prints text "Empolyee" and text "Enter data" (figure 3). Furthermore you have to call method getdata of employee and print text "Displaying data". After that you have to call method display of employee. Sample print is in figure 3.

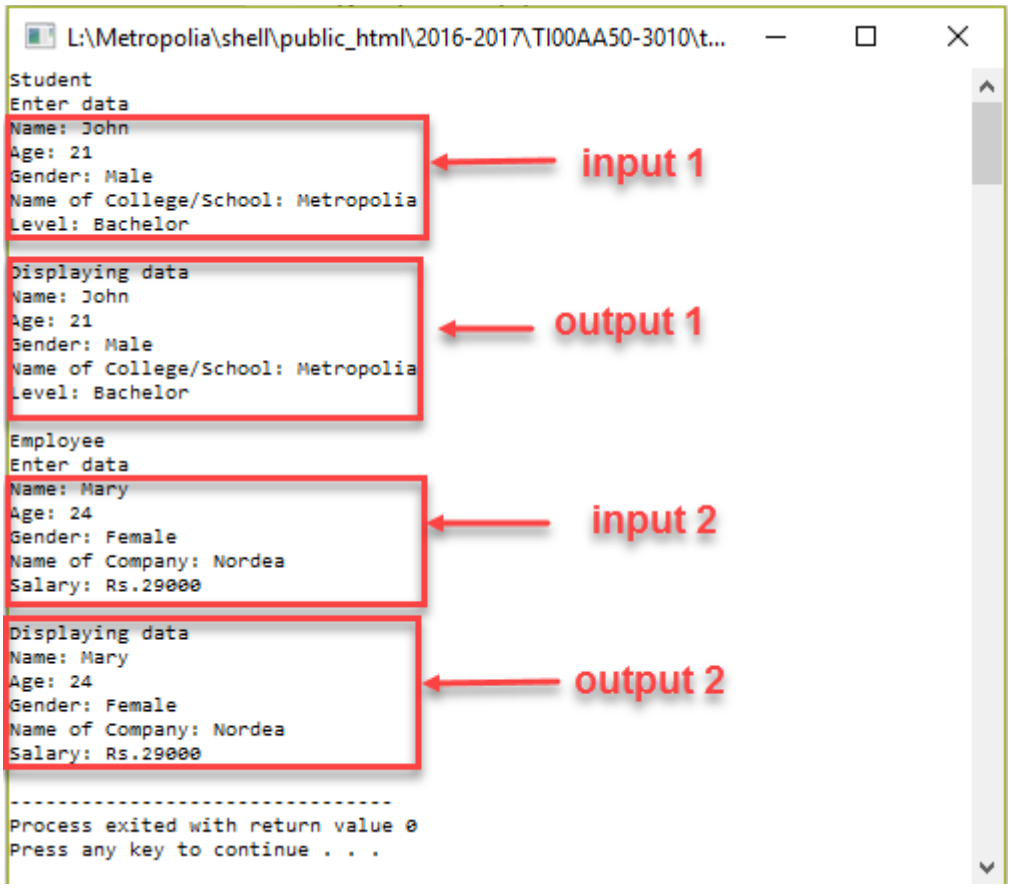

Figure 3. Sample print in Dev C++ -program

4. **Multilevel inheritance** (https://www.tutorialcup.com/cplusplus/inheritance.htm#multilevel-inheritance). Implement a base class **Farther** and derived class **Son** and further derived class **GrandSon**. The class **Farther** contains protected property **int a**. In no parametric constructor property **a** gets value 5. The derived class **Son** contains protected property **int b**. In no parametric constructor property **b** gets value 9. The class **GrandSon** contains protected property **int c**. In no parametric constructor property **c** gets sum of properties **a** and **b**. In the class **GrandSon** is method **show** which print the value of **c**. In main program you have to create one **GrandSon** object and print the value of **c** with **show** method. Sample print is in figure 4.

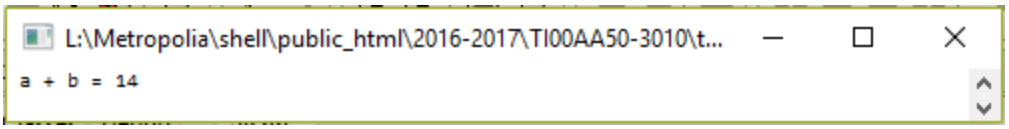

Figure 4. Sample print in Dev C++ -program

5. **Hybrid inheritance** (https://www.tutorialcup.com/cplusplus/inheritance.htm#hybrid-inheritance). Implement a base class **Item** and derived class **Sell** and further derived class **Bill**. There is also class **Discount** (figure 5). Class **Item** contains properties **product code**, **product name**, **cost price** and **quantity of hand**. It contains also methods **getProduct** and **Productdis**. Method **getProduct** requests values of properties. Method **Productdis** prints values of properties. Class **Sell** contains property **selling price**. One parametric method **getval** sets the value of property **selling price**. Method **showsp** prints the value of property **selling price**. Class **discount** contains property **discount**. One parametric method **getdis** sets the value of property **discount**. Class **bill** contains properties **quantity of purchase** and **total price**. One parametric method **calprice** gets the **quantity** and counts **total price**. It returns the **total price**. Method **showbill** prints the value of property **quantity**, **discount** and **total price**. In main program you have to create one bill object. The you have to call methods **getProduct** , **getval** , **getdis callprice**, **Productdis** and **showbill**. Sample print is in figure 6.

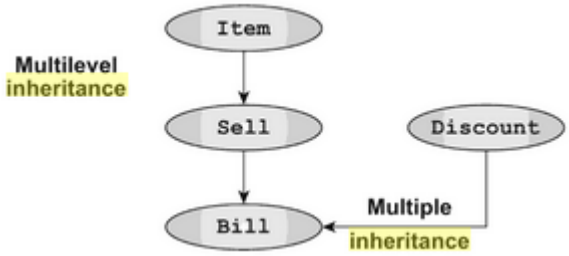

Figure 5. Hybrid inheritance

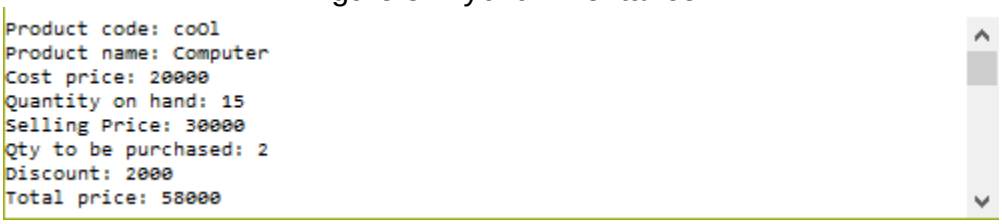

Figure 6. Sample print in Dev C++ -program