**Assignment-8**

1. Write a C++ program to implement pure virtual function with following details:

**Create A Base Class Temperature**

**Data members:**

Float temp;

Function members

void setTempData(float)

virtual void changetemp()

**Sub Class Fahrenheit (subclass of Temperature)**

**Data members:**

Float ctemp;

Function members

Override function changetemp() to convert Fahrenheit temperature into degree Celsius by using formula C=5/9\*(F-32) and display converted temperature

**Sub Class Celsius (subclass of Temperature)**

**Data members:**

Float ftemp;

Function members

Override function changetemp() to convert degree Celsius into Fahrenheit temperature by using formula F=9/5\*c+32 and display converted temperature

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| 2.Create a base class called **shape**. Use this class to store two **double** type values that could be used to compute the area of figures. Derive two specific classes called **triangle** and **rectangle** from base shape. Add to the base class , a member function **get\_data()** to initialize base class data members and another member function **display\_area()** to compute and display the area of figures. Make **display\_area()** as a **virtual function** and redefine this function in the derived class to suit their requirements. Using these three classes, design a program that will accept dimensions of a triangle or a rectangle interactively and display the area.  Remember the two values given as input will be treated as lengths of two sides in the case of rectangles and as base and height in the case of triangle and used as follows:  Area of rectangle = x \* y  Area of triangle = ½ \*x\*y |
| 3.Create a base class called **CAL\_AREA(Abstract).** Use this class to store float type values that could be used to compute the volume of figures. Derive two specific classes called **cone, hemisphere** and **cylinder** from the base **CAL\_AREA**. Add to the base class, a member function **getdata ( )** to initialize base class data members and another member function display **volume( )** to compute and display the volume of figures. Make display **volume ( )** as a pure virtual function and redefine this function in the derived classes to suit their requirements. Using these three classes, design a program that will accept dimensions of a cone, cylinder and hemisphere interactively and display the volumes. Remember values given as input will be and used as follows:  Volume of cone = (1/3)πr2h Volume of hemisphere = (2/3)πr3  Volume of cylinder = πr2h |
| 4. Implement a C++ program to demonstrate and understand Diamond problem.  (Virtual base Class) |