



FAST - National University of Computer & Emerging Sciences

Assignment 02

Teacher Name: **Sobia Iftikhar**

Course Name: **Object-Oriented Programing (oop)**

Date: **13-11-2020**

Section: **3C (F, G, SE)**

Course Code: **CS-217**

Roll no:

Instructions.

Points 70

- ✓ In case of copied Assignment from internet or from other student, marks will be zero.
- ✓ Write you're all the answer in this file and submit in pdf form.
- ✓ Late submission will not be entitled. In this case marks will be half.

Questions

Descriptive

1. Describe the polymorphism concept against inheritance with real time example.
2. How to perform override concept at compile give some short code.

Programs

3. Write a program that has an abstract base class named Quad. This class should have four member data variables (floats) representing side lengths and a pure virtual function Area. It should also have a method for setting the data variables. Derive a class Rectangle from Quad and override the Area method so that it returns the area of the Rectangle. Write a main function that creates a Rectangle and sets the side lengths. Also write a top-level function that will take a parameter of type Quad and return the value of the appropriate Area function.
4. Write a program using generic programing that perform temperature conversion and it gives the user the option to convert a value of temperature to Celsius and Fahrenheit scales of temperature.

```
Press 1 to convert Fahrenheit to Celsius
Press 2 to convert Celsius to Fahrenheit

Enter temperature in Fahrenheit: 70
In Celsius that's: 21.111111
```

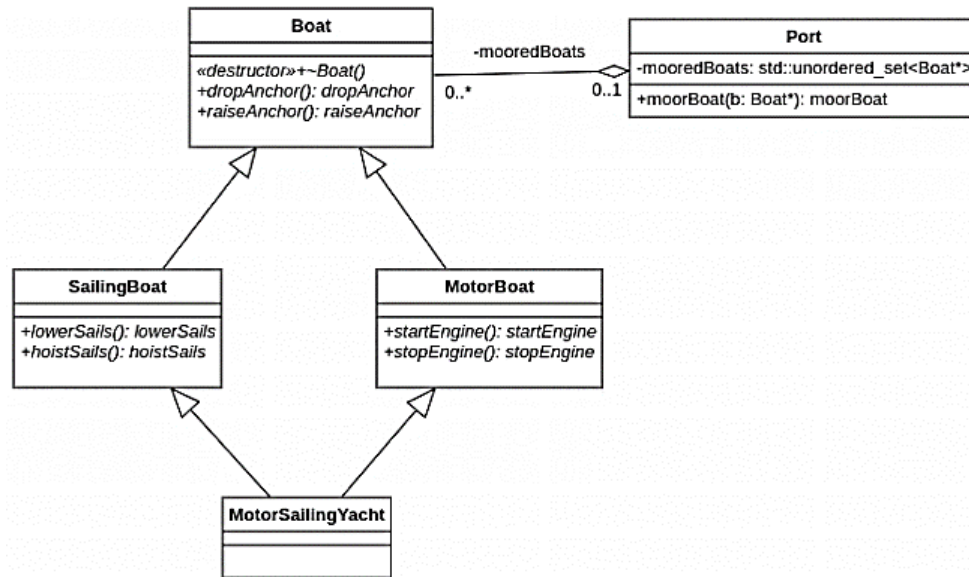
5. Implement the abstract class for a TC Machine that will deliver Tea and Coffee. There is Common methods milk, hot water and sugar will be defined and provided by abstract class and an abstract method addSachets () will be introduced in the abstract class itself and will be implemented by derived classes e.g. Tea and coffee etc. **So, they can add tea or coffee depends upon their choice.**



Output:

```
Preparing Tea...  
  Add Hot Water  
  Add Milk  
  Add Sugar  
  Add Tea  
Preparing Coffee...  
  Add Hot Water  
  Add Milk  
  Add Sugar  
  Add Coffee
```

6. Complete following diagram using Diamond approach.



7. A class with name of Circle is to be defined as illustrated in the class diagram. Implement this concept into basic oop without inheritance.

