

Department of Computer Science  
Semester Assignment Spring 2020

Name: Muhammad Bilal Khan

ID:12945

Semester: 8<sup>th</sup>

Subject: Object Oriented Programming

Time: 48hrs (9:00 am Monday (20<sup>th</sup> April) to 9:00 am Wednesday (22<sup>nd</sup> April))

BS (CS,SE)

Instructor: M.Ayub Khan

There are total **3** questions in this paper.

Max Marks: 30

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**Note:**

*At the top of the answer sheet there must be the ID, Name and semester of the concerned Student.*

*Students must have to provide the output of their respective programs. Students have same answers or programs will be considered fail. Programs in Python or codes should be explained clearly.*

*As this paper is online so incase of any ambiguity my Whatsapp no. is 034499121116.*

**Each question carry equal marks.  
Please answer briefly.**

**Q1. What is Class and role of object in a Class, explain in detail with the help of a suitable program ?**

Ans: **Class:** Class is a entity which determines the behavior of the object and what will that object contain. It's a blue print for building specific type of object.

**Syntax:** class (class name) {  
    Field;  
    Method;  
}

**Object:** object determines the behavior of the class when we send a message to an object we are asking the object to execute its method. In simple words object is the instance of the class.

```
public class Car {  
    public Car(String name) {  
        System.out.println("Passed Name is :" + name );  
    }  
  
    public static void main(String []args) {  
        // Following statement would create an object myCar  
        Car myCar = new Car( "Bugatti" );  
    }  
}
```

The above program will output car name:Bugatti

The role of object in this class is to pass the car name to the class so in general object pass the value to the class as we can see in the above code.

**Q2. Write a program about table printing which takes input from the user on the basis of OOP and explain in detail.**

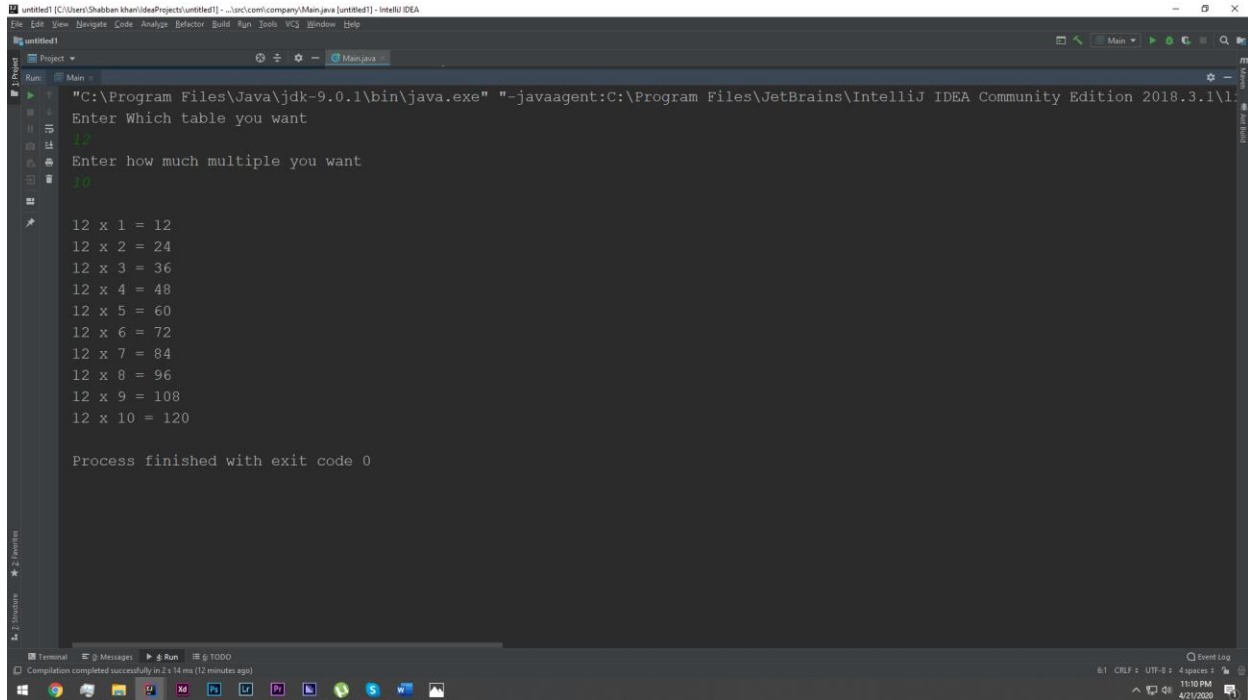
Ans:

## Program

```
package com.company;  
import java.util.Scanner;  
public class Main{  
    // Create a table() method and add a parameter  
    public void table(int a ,int b) {  
        int z=0;  
        for (int i = 1; i<=b; i++) {  
            z = a * i;  
            System.out.println(a+" x "+i+" = "+z);  
        }  
    }  
}
```

```
}  
}  
  
// Inside main, call the methods on the my object  
public static void main(String[] args) {  
    int a;  
    int b;  
    Scanner scan = new Scanner(System.in);  
    System.out.println("Enter Which table you want ");  
    a = scan.nextInt();  
    System.out.println("Enter how much multiple you want ");  
    b = scan.nextInt();  
    System.out.println();// Create white specs  
    Main my = new Main(); // Create a "my" object  
    my.table(a,b); // Call the table() method  
}  
}
```

## Out Put



```
untitled1 [C:\Users\Shabbun.khan\IdeaProjects\untitled1] - ...src\com\company\Main.java [untitled1] - IntelliJ IDEA
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
untitled1
Project Main
Run Main
"C:\Program Files\Java\jdk-9.0.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2018.3.1\lib\idea_rt.jar=61000:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2018.3.1\bin" -Dfile.encoding=UTF-8
Enter Which table you want
12
Enter how much multiple you want
10
12 x 1 = 12
12 x 2 = 24
12 x 3 = 36
12 x 4 = 48
12 x 5 = 60
12 x 6 = 72
12 x 7 = 84
12 x 8 = 96
12 x 9 = 108
12 x 10 = 120
Process finished with exit code 0
Terminal Messages Run 61000
Compilation completed successfully in 2s 14 ms (12 minutes ago)
6:1 CRLF UTF-8 4 spaces 11:10 PM 4/21/2018
```

Details:

**Q3. Write a program about any 2 cars which can calculate the performance of both of them and explain in detail.**

Ans:

## Program

```
package com.company;

public class Main {

    public static void main(String[] args) {

        Cars rx5= new Cars();

        Cars rx8= new Cars();
```

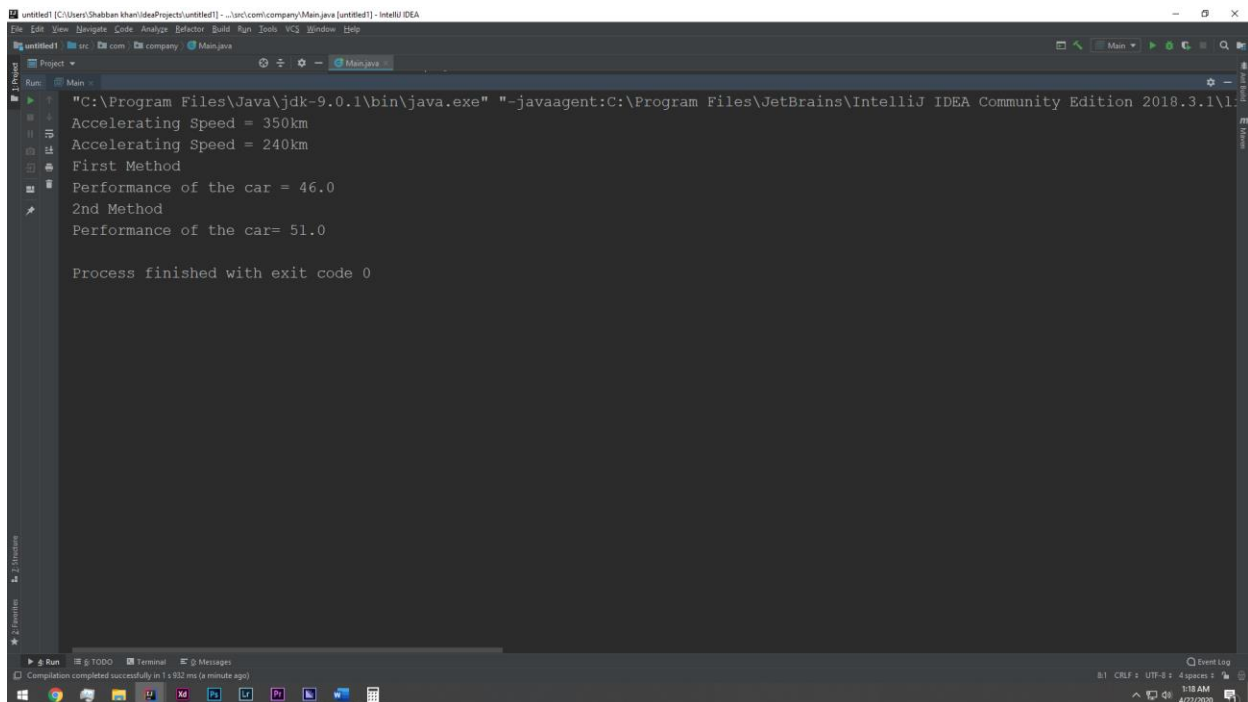
```
int caronesped=350;
int caronehp=800;
int cartwosped=240;
int cartwohp=270;

int caronefec=25;
int cartwofec=10;
System.out.println("Accelerating Speed = " +caronesped + "km");
System.out.println("Accelerating Speed = " +cartwosped + "km");
System.out.println("First Method ");
rx8.perf(caronesped,caronehp,caronefec);
System.out.println("2nd Method ");
rx5.perfo(cartwosped,cartwohp,cartwofec);
}
}
class Cars
{

void perf(int caronesped,int caronehp, int caronefec) {
    double p;
    p = (caronesped +caronehp) / caronefec;
    System.out.println("Performance of the car = " + p );
}
```

```
void perfo( int cartwosped,int cartwohp,int cartwofec) {  
    double p;  
    p = (cartwosped + cartwohp )/ cartwofec;  
    System.out.println("Performance of the car= " +p);  
}  
}
```

## Out Put



```
"C:\Program Files\Java\jdk-9.0.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2018.3.1\l  
Accelerating Speed = 350km  
Accelerating Speed = 240km  
First Method  
Performance of the car = 46.0  
2nd Method  
Performance of the car= 51.0  
  
Process finished with exit code 0
```