



FOUNDATION UNIVERSITY

RAWALPINDI CAMPUS

Mid Term Examinations (Spring-2018)

Solution Manual to Midterm Paper

Please be **relaxed** and go through the solution manual and Check where you have made the mistakes so that next time you can Avoid it.

IN CASE OF ANY QUERY OR DISCUSSION YOU CAN VISIT ME OR CONTACT ME

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Please no Requests.

Question 1: Find the error in each of the following program segments. Explain how to correct the error.

a) **void g()**

```
{
    System.out.println("Inside method g");
    void h()
    {
        System.out.println("Inside method h");
    }
}
```

[A method could not be defined inside a Method Define it outside the Method g()]

b) **int sum(int x, int y)**

```
{
    int result;
    result = x + y;
}
```

[Method should return an int value, or its Return type should be Void]

c) **void product()**

```
{
```

```

        int a = 6, b = 5, c = 4, result;
        result = a * b * c;
        System.out.printf("Result is %d%n", result);
        return result;
    }

```

[Function Should not return any value]

(3)

b). Analyze the difference between access specifiers with suitable examples (Any Three)

(1+1+1)

[Public

Any Variable which is accessible every where in the project.

Private

Any variable which is only accessible in the same Class where it has been declared.

Protected

[Any member which is accessible inside the class or in subclasses]

]]

Question 2: Write two differences between a constructor and a method. (3)

Constructor	Method
It does not contain a Return Type	It Must Contain a Return type or void atleast
Its name is like the name of Class	It can have any name
Or any other two differences	

Consider the following Student class:

```

package student;

public class Student {

    private String first;    // first name

    private String last;    // last name

    private String email;   // email address

    public void setData(String first, String last, String email)

```

```
{  
    this.first=first;  
    this.last=last;  
    this.email=email;  
}  
public void displayData(){  
    System.out.println ("First name "+first);  
    System.out.println ("Last name "+last);  
    System.out.println ("Email "+email);  
}  
}
```

Here is our test class:

```
package student;

public class StudentTest {

public static void main(String[] args) {

    Student s=new Student();

    s.setData("Ali", "Ahmad", "ali@gmail.com");

    s.displayData();

}

}
```

Here is the output of above code:

First name null

Last name null

Email null

Question 3: Modify the setData method and rewrite it so that the values passed as arguments to it are assigned to the instance variables. (6)

Question 4. Create a class Rectangle with attributes length and width, each of which defaults to 1. Provide methods that calculate the rectangle's perimeter and area. It has set and get methods for both length and width. The set methods should verify that length and width are each floating-point numbers larger than 0.0 and less than 20.0. Write a program to test class Rectangle.

Perimeter= (2*(Length+width))

Area = Length* width.

(4)

```
public class Rectangle
{
    private double length;
    private double width;

    public void set(double x, double y)
    {
        if(x>0&&x<20)
        {
            this.length=x;
        }
        if(y>0&&y<20)

```

```

    {
        this.length=x;
    }
} //End of Set method
public void Area()
{

    double area;
    area= this.length*this.width;
    System.out.print("The Area of the Given Rectangel is "+area);
} //end of Ara Method
public void perimeter()
{
    double perimeter;
    perimeter= 2*(this.length*this.width);
    System.out.print("The Area of the Given Rectangel is "+perimeter);
} //End of perimeter Method
}

```

Question No 5. Create a class called Date that includes three instance variables—a month (type int), a day (type int) and a year (type int). Provide a constructor that initializes the three instance variables and assumes that the values provided are correct. Provide a set and a get method for each instance variable. Provide a method displayDate that displays the month, day and year separated by forward slashes (/). Write a test app named DateTest that demonstrates class Date’s capabilities.

(6)

```

*****DATE CLASS
*****

public class Date {

    private int monthdate;
    private int daydate;
    private int yeardate;

    public Date (int month, int day, int year) {
        monthdate = month;
        daydate = day;
        yeardate = year;
    }

    public void setMonth (int month) {
        monthdate = month;
    }
}

```

```
}

public void setday (int day) {
    daydate = day;
}

public void setYear (int year ) {
    yeardate = year;
}

public void displayDate () {
    System.out.printf ("%d/%d/%d\n", monthdate, daydate, yeardate);
}

}
```

```
***** Date TEST Project*****

import java.util.Scanner;

public class DateTest {
    public static void main (String [] args) {

        Date display = new Date (0,0,0);

        Scanner input = new Scanner (System.in);

        int month;
        int day;
        int year;

        System.out.print ("Enter Month: ");
        month = input.nextInt();
        display.setMonth(month);

        System.out.println ();

        System.out.print ("Enter Day: ");
        day = input.nextInt();
        display.setday(day);

        System.out.println ();
    }
}
```

```
System.out.print ("Enter Year: ");
year = input.nextInt();
display.setYear(year);

System.out.println ();

display.displayDate();

}
}
```