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20BCE1182

LAB-2

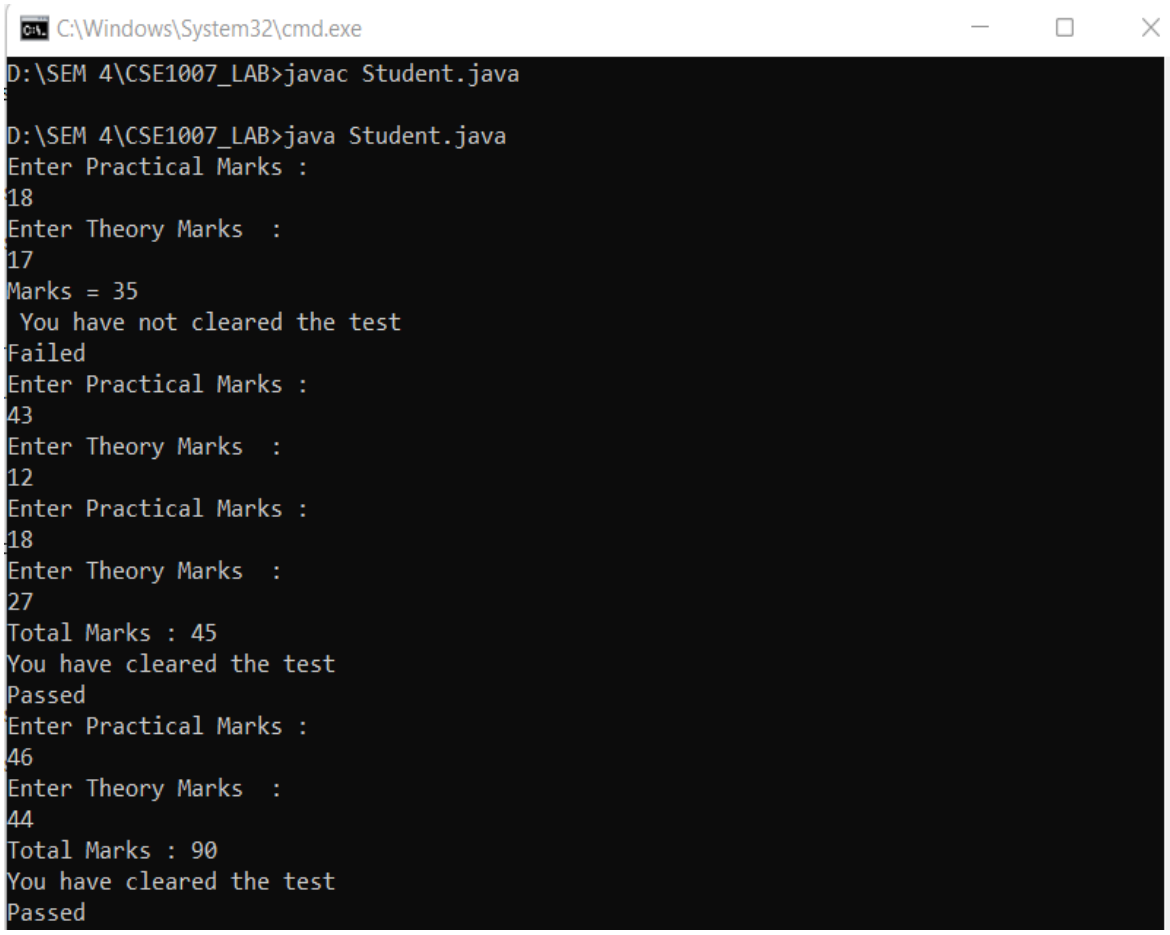
1) A student studying computer science at a college is examined by the practical work during the course and the final written examination. Each component of the assessment carries a maximum of 50 marks. The following rules used by the examiners in preparation of result. A student must score a total of 40% or more in order to pass. A total mark of 39% is moderated to 40%. However each component must be passed with a minimum mark of 15. If a student scores 40% or more but does not achieve the minimum mark in one component is given a technical fail of 39% (This mark is not moderated to 40%).Design a suitable Java class Student and display the marks and result of 5 sample students.

Code :

```
import java.util.Scanner;

public class Student

{

	public static void main(String args[])

{


	Scanner in = new Scanner(System.in);

	for(int i=0;i<5;i++)

		{


		 System.out.println("Enter Practical Marks : ");

		int pracMarks = in.nextInt();

		System.out.println("Enter Theory Marks  : ");

		int theoryMarks = in.nextInt();

		int Total = pracMarks + theoryMarks ;


			if (Total  == 39)

			{

			if( pracMarks >15 && theoryMarks > 15)

			{
```

```
                System.out.println("Total Marks is 40" );
                System.out.println("You have cleared the test ");
                System.out.println("Passed  ");
                }
            }

        else if ( Total > 40)
                {
                if(pracMarks > 15 && theoryMarks > 15)
                {
                System.out.println("Total Marks : " + Total );
                System.out.println("You have not cleared the test " );
                System.out.println("Passed " ) ;
                }
                }

        else
                {
                System.out.println("Marks = " + Total );
                System.out.println(" You have not cleared the test ");
                System.out.println("Failed " );
                }
        }
}
}
```

Output :



2) The electrical resistance R of a cylindrical wire with length L(in meter) and diameter d (in meter) can be computed from the area A of its diameter (m2) and the resistivity P of the material (rho, meter times Ohm). The formula: R = P(L/ A) Compute the electrical resistance of a wire with length 1m and a diameter of 1mmfor copper (P = 1.78*10-8) and for silicon (P = 2300)

Code :

```
import java.util.Scanner;

import java.lang.Math;

public class resist{


        public static void main(String args[])


{
```

```
        double L = 1;
        double d = 0.001;
        double A = 3.14 * d*d/4;
        double R,P;

        Scanner in = new Scanner(System.in);
        System.out.println("Enter the resistivity of the material (P) ");
        System.out.println("Enter 1 if resistivity of the material (P) is 0.0000000178");
        System.out.println("Enter 2 if resistivity of the material (P) is 2300");
        int ch  = in.nextInt();

        System.out.println("Electrical Resistance of the material is calculated using the formula:  R =
P* (L/A)");
        switch(ch)
{
                case 1:

                {



                        R= 0.0000000178*1*4/3.14 / 0.001/0.001;
                        System.out.println("Electrical Resistance of the material is : " + R);
                        break;
                }

                case 2:
                {
```

```
                R= 2300*1*4/3.14 /0.001 /0.001;
                System.out.println("Electrical Resistance of the material is : " + R);
                break;
            }

            default :
            System.out.println("Electrical Resistance of the material cannot be calculated");
}
}
}
```

Output :

```
D:\SEM 4\CSE1007_LAB>javac resist.java

D:\SEM 4\CSE1007_LAB>java resist.java
Enter the resistivity of the material (P)
Enter 1 if resistivity of the material (P) is 0.0000000178
Enter 2 if resistivity of the material (P) is 2300
1
Electrical Resistance of the material is calculated using the formula:  R = P* (L/A)
Electrical Resistance of the material is : 0.022675159235668787
```

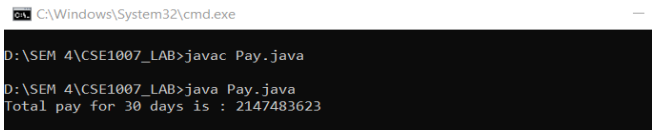
```
D:\SEM 4\CSE1007_LAB>javac resist.java

D:\SEM 4\CSE1007_LAB>java resist.java
Enter the resistivity of the material (P)
Enter 1 if resistivity of the material (P) is 0.0000000178
Enter 2 if resistivity of the material (P) is 2300
2
Electrical Resistance of the material is calculated using the formula:  R = P* (L/A)
Electrical Resistance of the material is : 2.9299363057324842E9
```

3) A man takes a job for 30 days. His pay for the first day is Rs.25/. His pay for the second day is Rs.50/. and for the third day is Rs.100/. Each day's pay is twice his pay of the previous day. Write a program to find his total pay for 30 days.

Code :

```
import java.util.Scanner;

public class Pay

{

	public static void main(String[] args)

{

		int sum = 25 ;

		int pay = 25;


		for (int i=1;i <= 30 ; i++)

			{

				pay = pay *2;

				sum = sum + pay ;

			}

	System.out.println("Total pay for 30 days is : " + sum );

}


}
```

Output :



4) In order to attract its customers, a jewellery shop gives a silver coin to its every 100thcustomer and a gold coin to every 250thcustomer. If a customer is eligible for both silver and gold coin, he gets then only gold coin. Design a Java application that getsall customer names and prints only the customer name who wins either a silver coin or a gold coin. For the sake of auditing purpose, it should also print the number of customers won silver coin or gold coin.

Code :

```
import java.util.Scanner;

public class goldsilver

{

public static void main(String args[])
```

```
	{
		Scanner sc  = new Scanner(System.in);

		int x ,c1 =0 , c2 =0,n;
		System.out.println("Enter number of customers ");
		n = sc.nextInt();
		for (int i=0;i<n ;i++)
{
	 System.out.println("1 : 100th customer ");
		System.out.println("2 : 250th customer ");
		System.out.println("3 : Eligible for both ");


		x = sc.nextInt();


		if( x == 1)
	{
		Scanner p  = new Scanner(System.in);
		System.out.print("Enter your name :");
		String name = p.nextLine();
		c1++;
		System.out.println(name + " has won a silver coin ");
}


		else if(x == 2)
	{
		Scanner p  = new Scanner(System.in);
		System.out.print("Enter your name :");
		String name = p.nextLine();
```

```
                c2++;
                System.out.println(name + " has won a gold coin ");
        }

                else if(x == 3)
        {
                Scanner p  = new Scanner(System.in);
                System.out.print("Enter your name :");
                String name = p.nextLine();
                c2++;
                System.out.println(name + " has won a gold coin ");
        }

                else
{
                Scanner p  = new Scanner(System.in);
                System.out.print("Enter your name :");
                String name = sc.nextLine();
                System.out.println("You are not elgible to win a gold or silver coin ");

 }




}
        System.out.println(c1 + " customers won gold coin " );
        System.out.println(c2 + " customers won silver coin " );



}
```

}

Output :

```
D:\SEM 4\CSE1007_LAB>javac goldsilver.java

D:\SEM 4\CSE1007_LAB>java goldsilver.java
Enter number of customers
5
1 : 100th customer
2 : 250th customer
3 : Eligible for both
1
Enter your name :Simran
Simran has won a silver coin
1 : 100th customer
2 : 250th customer
3 : Eligible for both
2
Enter your name :Preeti
Preeti has won a gold coin
1 : 100th customer
2 : 250th customer
3 : Eligible for both
2
Enter your name :Riya
Riya has won a gold coin
1 : 100th customer
2 : 250th customer
3 : Eligible for both
3
Enter your name :Janice
Janice has won a gold coin
1 : 100th customer
2 : 250th customer
3 : Eligible for both
1
Enter your name :Sanya
Sanya has won a silver coin
2 customers won gold coin
3 customers won silver coin
```