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WEEK 2:

1. You are required to write a Java program to calculate the total salary of an employee based on their hourly wage, hours worked in a week, and the number of weeks they worked. The program should consider the following rules:

- If an employee works more than 40 hours in a week, they are paid 1.5 times their hourly wage for the overtime hours.

- If an employee works less than 20 hours in a week, they are penalized with a deduction of 10% of their weekly salary.

- The program should handle invalid inputs (e.g., negative values for hours or wages).

Input Format:

- Hourly wage (a positive decimal value).

- Number of hours worked per week (a positive integer).

- Number of weeks worked (a positive integer).

Output Format:

Total salary considering the overtime pay and penalty rules.

SAMPLE INPUT

15.0

45

4

SAMPLE OUTPUT

Total salary is 2850.0

PROGRAM:

```
import java.util.*;
```

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

      Scanner obj=new Scanner(System.in);
      System.out.println("enter the hourly wages");

      double a=obj.nextDouble();
      if(a<0){
         a=a*-1;
      }
      System.out.println("enter the number of houres worked in a week");
      int b=obj.nextInt();
      if(b<0){
         b=b*-1;
      }
      System.out.println("enter the number of weeks");

      int k=obj.nextInt();
      if(k<0){
         k=k*-1;
      }
      double ded;
      if(b>40){
         double salary =(b-40)*1.5*a*k;

         double total=salary+(40*a*k);
         System.out.println(total);
      }else if(b<20){
         ded=(a*b*k);
         double salarynew=ded-(ded*0.2);
         System.out.println(salarynew);
      }


   }
}
```

OUTPUT:

```
D:\230701286>javac pgm.java

D:\230701286>java pgm
enter the hourly wages
15.0
enter the number of houres worked in a week
45
enter the number of weeks
4
2850.0
```

2. You are required to calculate the total cost of purchasing tickets for an event based on the ticket type and the number of tickets bought.

The program should consider the following rules:

- Regular Ticket: 50 each. If more than 10 tickets are bought, a discount of 10% is applied.

- VIP Ticket: 100 each. If more than 5 tickets are bought, a discount of 15% is applied.

- Premium Ticket: 150 each. If more than 3 tickets are bought, a discount of 20% is applied.

- If the total cost before any discount is less than 200, an additional service fee of 20 is applied.

- The program should handle invalid inputs (e.g., negative values for number of tickets, or invalid ticket types).

Input Format

Ticket type (Regular, VIP, or Premium). Number of tickets bought (a positive integer).

Output Format

- Total cost considering the discounts and additional service fee rules

Sample Input 1

Regular

12

Sample Output 1

540.0

PROGRAM:

```
import java.util.*;
public class pgm{
   public static void main(String args[]){

      Scanner obj=new Scanner(System.in);
      System.out.println("enter");
      String type=obj.next();
      System.out.println("enter the number of tickets ");
      double total;
      int num=obj.nextInt();
      if(type.equals("regular")){


         total=num*50;
         if(total<200){
            total=total+20;
         }
         if(num>10){
            total=total-(total*0.10);

         }

         System.out.println(total);

      }
      else if(type.equals("vip")){
         total=num*100;
         if(total<200){
            total=total+20;
         }
         if(num>5){
            total=total-(total*0.15);
         }
         System.out.println(total);
      }
```

```
        else if(type.equals("preminum")){
            total=num*150;
            if(total<200){
                total=total+20;
            }
            if(num>3){
                total=total-(total*0.20);
            }

            System.out.println(total);
        }

    }
}
```

OUTPUT:

```
D:\230701286>javac pgm.java

D:\230701286>java pgm
enter
regular
enter the number of tickets
12
540.0
```

3. Given a number N. The task is to find the largest and the smallest digit of the number.

Input Format:

A positive number in the range 1 <=n<=10000

Output Format:

Print the largest digit and the smallest digit

Sample Input

2346

Sample Output

2 6

Sample Input

4

Sample Output

4 4

PROGRAM:

```
import java.util.*;
public class pgm{
   public static void main(String args[]){

      Scanner obj=new Scanner(System.in);
      System.out.println("enter the number");
      int b=obj.nextInt();
      int c;

      c=b;

      int rem,rev;

      int max=c%10;
      int min=c%10;
      while(c!=0){
         rem=c%10;
         if(rem>max){
            max=rem;
         }
         else if(rem<min){

            min=rem;
         }
         c=c/10;

      }
      System.out.println("largest num:"+max);
```

```
        System.out.println("smallest num:"+min);

    }
}
```

OUTPUT: