OOP Lab: Experiment 3

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Exercise 1: Write a program to accept three digits (i.e., 0 - 9) and print all its possible combinations.

(For example, if the three digits are 1, 2, 3 than all possible combinations are :123, 132)

Code:

```java
import java.util.*;
public class Digit3
{
    public static void Sort(int[] arr)
    {
        int temp=0;
        for(int i=0; i<arr.length ; i++)
        {
            for(int j=i+1; j<arr.length; j++)
            {
                if(arr[i]>arr[j])
                {
                    temp = arr[i];
                    arr[i]= arr[j];
                    arr[j]= temp;
                }
            }
        }
    }

    void NumberCreator(int[] userinput)
    {
        int arr[];
        arr = new int[6];
        int l=0;
        for(int i=0;i<3;i++)
        {
            for(int j=0;j<3;j++)
            {
                for(int k=0;k<3;k++)
                {
                    if(i!=j && j!=k && i!=k)
                    {
                        arr[l]= userinput[i]*100 + userinput[j]*10 + userinput[k];

                        l++;
                    }

                }
            }
        }
```

```java
        Sort(arr);
        System.out.println("\n------------------------\n");
        System.out.println(arr[5] + " \n");
        int i=0;
        while(i<6)
        {
            if((arr[i]!=arr[i+1]))
            {

                System.out.println(arr[i] + " \n");
            }
            i++;
        }

    }

    public static void main(String[] args)
    {

        Scanner sc=new Scanner(System.in);
        int arr[]=new int[3];
        System.out.println("Enter 3 numbers: ");
        for(int i=0;i<3;i++)
        {
            arr[i]=sc.nextInt();
        }
        sc.close();
        Digit3 obj= new Digit3();
        obj.NumberCreator(arr);

    }
}
```

Output:

```
Enter 3 numbers:
1 2 3

------------------------

321

123

132

213

231

312
```

```
Enter 3 numbers:
1 1 2

------------------------

211

112

121
```

```
Enter 3 numbers:
1 1 1

------------------------

111
```

NOTE- The program takes care of repetition if digits are repeated

Exercise 2: Write a Java Program to accept 10 numbers in an array and compute the square of each number. Print the sum of these numbers.

Code:

```java
import java.util.*;

public class SquareSum {
    void Square(int [] arr){
        int sum=0;
        System.out.print("-----------------------------------\n");
        for(int i=0; i<arr.length;i++){
            sum += arr[i]*arr[i];
        }
        System.out.print("Sum: " + sum);
    }

    public static void main(String[] args){

        int[] arr;
        arr = new int[10];
        int c;
        Scanner sc = new Scanner(System.in);
        for (int i=0; i<arr.length;i++){
            c = i+1;
            System.out.print("Enter Number " + c + " : ");

            arr[i] = sc.nextInt();
        }
        sc.close();
        SquareSum obj = new SquareSum();
        obj.Square(arr);

    }
}
```

Output:

```
Enter Number 1 : 1
Enter Number 2 : 2
Enter Number 3 : 3
Enter Number 4 : 4
Enter Number 5 : 5
Enter Number 6 : 6
Enter Number 7 : 7
Enter Number 8 : 8
Enter Number 9 : 9
Enter Number 10 : 10
---------------------------------
Sum: 385
```

Exercise 3 Write a program to input a number of a month (1 - 12) and print its equivalent name of the month. (e.g 1 to Jan, 2 to Feb. 12 to Dec.)

Code:

```java
import java.util.*;

public class Month
{
    void InputMonth(int n)
    {
        switch (n)
        {

            case 1:
            {
                System.out.println("January");
                break;
            }
            case 2:
            {
                System.out.println("February");
                break;
            }
            case 3:
            {
                System.out.println("March");
                break;
            }
            case 4:
            {
                System.out.println("April");
                break;
            }
            case 5:
            {
                System.out.println("May");
                break;
            }
            case 6:
            {
                System.out.println("June");
                break;
            }
            case 7:
            {
                System.out.println("July");
                break;
            }
            case 8:
            {
                System.out.println("August");
                break;
            }
            case 9:
            {
```

```java
                System.out.println("September");
                break;
            }
            case 10:
            {
                System.out.println("October");
                break;
            }
            case 11:
            {
                System.out.println("November");
                break;
            }
            case 12:
            {
                System.out.println("December");
                break;
            }
            default:
                System.out.println("Invalid Input");
        }
    }

    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        Month obj = new Month();
        System.out.print("Enter month number: ");
        int n = sc.nextInt();
        obj.InputMonth(n);
        sc.close();
    }

}
```

Output:

```
Enter month number: 6
June
```

Exercise 4: Write a program to find the sum of all integers greater than 40 and less than 250 that are divisible by 5.

Code:

```java
public class Divisibleby5 {
    public static void main(String[] args)
    {
        int sum=0;
        for (int i = 45; i <250; i+=5)
        {
            sum+=i;
        }
        System.out.println("Sum: " + sum);
    }
}
```

Output:

```
Sum: 5945
PS F:\UPES\A
```