CSA0993- Programming in
Java for application
development.

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① find factorial of n?

```
Import java.util.Scanner;
Public class Factorial {
    Public static void main (String[] args){
        int n = new Scanner (System.in). nextInt(), fact=1;
        for (int i =1; i <= n; i++) fact* =i;

        System. out. Print ("factorial of"+n+" is +fact);
    }
}
```

Input: 6
output: Factorial of 6 is 720.

② Write a program to print below pattern.

```
Import java.util.Scanner;
Public class numberPattern {
    Public static void main (String[] args){
        int n = new Scanner (system.in). next(int(), k=1;

        for (int i =1; i <= n; i ++){
            for (int j =1; j <= i; j++){
```

```java
            System.out.print(k* k + " ");
            k++;
        }
        system.out.println();
    }
}
```

Input: 4
output:
```
1
4  9
16  25  36
49  64  81  100.
```

(2) write a program to find num of composite num in array.

```java
Public class compositenumbers {
    Public static void main(String[] args){
        int[] arr = {16, 18, 27, 16, 23, 21, 19};
        int count = 0;
        for (int num : arr) if (isComposite(num)) count ++;

        System.out.println("num of composite number:" +count);
    }
    Public static boolean isComposite (int num){
        if (num <=1) return false;
        for (int i =2; i <= Math.Sqrt(num); i++)
            if (num % i ==0) return true;

        return false;
    }
}
```

output:
num of composite number = 5.

④ find nth odd num after n odd numbers.

```java
Import java.util.Scanner;
Public class findnth oddnumber {
    Public static void main (string[] args){
        int n = new Scanner (System.in).nextInt();
        int result = n*4 -1;
        System.out.println (n+ "th odd num after "+n+" oddnums = "
                                                        +result);
    }
}
```

Input: 4
output: 4th odd num after 4 oddnums = 15

⑤ write a program find whether given character
Present in string or not if it exist print index of it

```java
Import java.util.Scanner;
Public class Findcharacter ins string {
    Public static void main (string[] args){
        Scanner input = new Scanner (system.in);
        System.out.print ("enter string:");
        String str = input.nextLine();
        System.out.print ("enter-char to search!");
        char c = input.next().charAt(0);
        int index = -1;
        for (int i =0; i <str.length(); i++){
            if (str.char At(i) == c){
                index = i;
                break;
            }
        }
    }
}
```

```java
        if (index >=0){
            System.out..println(c+"found in index :"+index);
        }else{
                system.out.println("char not found");
        }
    }
}
```

Input : Enter String: I am a programmer
        Enter char to search: P
output : P found in index: 7.

⑥ write a program to print below Pattern.

```java
Import java.util.Scanner;
Public class Number pattern{
    Public static void main (String[] args){
        Scanner input = new Scanner (System.in);
        int n = input.nextInt();
        for (int i =1; i<=2*n-1; i++){
            int num =i <= n ? i : 2*n-i;
            for (int j =1; i<=num; j++){
                System.out.print (num+" ");
            }
            . System.out.println();
        }
    }
}
```

Input : 4
output : 1
         2 2
         3 3 3
         4 4 4 4
         5 3 3
         2 2
         1

④ Program to find whether given number is armstrong or not

```java
Import java.util.Scanner;
Public class Armstrongnum {
    Public static void main(String []args){
        Scanner input = new Scanner(System.in);
        int n = input.nextInt();
        int arm = 0, num = n;
        while (num > 0) {
            int digit = num % 10;
            arm += digit * digit * digit;
            num /= 10;
        }
        if (n == arm) {
            System.out.println("arngstrong num");
        }
        else {
            System.out.println("not arngstrong");
        }
    }
}
```

Input : 153
Output : Armstrong num.

⑧ write program to arrange letters of alphabetically in reverse order.

```java
Import java.util.Scanner;
Import java.util.Arrays;
Public class reverse alphabet {
    Public static void main (String []args){
        Scanner input = new Scanner (System.in);
        char [] arr = input.nextLine().tocharArray();
        Arrays.Sort (arr);
        for (int i = arr.length - 1; i >= 0; i--){
            System.out.print (arr[i] + " ");
        }
    }
}
```

Input: MOSQUE
output: USQOME

(9) write program to string from user, display same
string after removing vowels

```java
Import java.util.Scanner;
Public class Remove vowels{
    Public static Void main(String[] args){
        Scanner input = new Scanner(System.in);
        String result = input.nextLine().replaceAll("
                        [aeiou AEIOU]","");
        System.out.println("String without vowels:"+result);
    }
}
```

Input: we can play the game.
output: w cn ply th gm

(10) write program to print hollow square dollar pattern.

```java
Import java.util.Scanner;
Public class Hollow Square {
    Public static void main{
        Scanner input = new Scanner(System.in);
        char ( = input.next().charAt(0);
        for (int j=1; j<=5; j++){
            System.out.print((i==1 || j==1 || i==5 || j==5 ?
                                (:'')+" ");
        }
        System.out.println();
    }
}
```

Input: 5
output: $ $ $ $ $
        $ $
        $ $
        $ $
        $ $ $ $ $