Basic Patterns

```
public class prac1patterns {
    public static void main(String args[]){
        int n=5;
      //WRITE A PROGRAM TO PRINT PATTERNS
        for(int i=1;i<=n;i++){
            for(int j=1;j<=i;j++){
                System.out.print("*");
            }
            System.out.println();
        }

Output

*
**
***
****
*****
//*************************************************************************
*******************************************

     // WRITE A PROGRAM TO PRINT  REVERSE PATTERNS
        public class prac1patterns {
            public static void main(String args[]){

        int n=5;
        for(int i=1;i<=n;i++){
            for(int j=n;j>=i;j--){
                System.out.print("*");
            }
            System.out.println();
        }
Output:
*****
****
***
**
*
/*************************************************************************
*******************************************
```

```java
    //WRITE A PROGRAM TO PRINT  SEQUENCE CHARACTERS
  public class prac1patterns {
    public static void main(String args[]){
        int n=5;
        for(int i=1;i<=n;i++){
            char ch='a';
            for(int j=1;j<=i;j++){
                {
                    System.out.print(ch);
                    ch++;
                }

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

```
Output:
a
ab
abc
abcd
abcde
```

```
//*************************************************************************
**********************************************
```

```java
       //WRITE A PROGRAM TO PRINT HOLLOW RECTANGLE
       public class prac1patterns {
    public static void main(String args[]){

         int n=8;
         for(int i=1;i<=n;i++){
            for(int j=1;j<=n;j++){
                if(i==1||i==n ||j==1||j==n){
                    System.out.print("*");
                }
                else{
                    System.out.print(" ");
                }
            }
            System.out.println();
         }



    }
```

```
}
Output:
********
*      *
*      *
*      *
*      *
*      *
*      *
********
//*************************************************************************
************************************************
```

Functions

```
public class functions {
    //write a program to print the sum of two numbers using function

    public static int PrintSum(int a,int b){
        int sum=a+b;
        return sum;
    }
    public static void main(String args[]){
        int a=1;
        int b=2;
        System.out.println(  "sum is "+ PrintSum(a,b));
    }

}
Output:
sum is 3


public class functions {
```

```
    //write a program to print the Factorial of a number using function

    public static int factorial(int n){
        int fact=1;
        for(int i=n;i>=1;i--){
            fact=fact*i;
        }
        return fact;
    }
    public static void main(String args[]){
        int n=5;
       System.out.println("factoraial of "+ n+ " is:"+ factorial(n));

    }

}
Output:

factoraial of 5 is:120


public class functions {
    //     //write a program to print the Binomial coefficient  of a number using
function
    // binomial coeff=ncr=nfact/n-r fact *rfact
    public static int factorial(int n){
                int fact=1;
                for(int i=n;i>=1;i--){
                    fact=fact*i;
                }
                return fact;
            }
    public static int Binomialcoefficient(int n,int r){
         int bincoff= factorial(n)/(factorial(n-r)*factorial(r));

  return bincoff;
    }
    public static void main(String args[]){
                int n=5,r=5;
               System.out.println("Binomial coefficient of
is:"+  Binomialcoefficient( n, r));
}
}

Output:
```

```
Binomial coefficient of is:1


//-------------------------------------------------------------------------
//write a program to check weather the number is prime or not


public class functions {
    public static boolean isprime(int n){
        boolean prime=true;
       //for(int i=2;i<n;i++)
       for(int i=2;i<Math.sqrt(n);i++){

        if(n%i==0){
            prime=false;
        }
        else if(n==2){
            prime=true;
        }
       }
       return prime;

    }
    public static void main(String args[]){
    int n=27;
    System.out.println(isprime(n));

}}
Output:
false




//write a program to print  prime  numbers between 100
public class functions {
        public static boolean isprime(int n){
            boolean prime=true;
           for(int i=2;i<n;i++){
            if(n%i==0){
                prime=false;
            }
            else if(n==2){
                prime=true;
            }
```

```
            }
            return prime;
        }
        public static void primeinrange( int n){
            for(int i=2;i<n;i++){
            if(isprime(i)==true){
            System.out.print(i+" ");
            }
          }
        }

         public static void main(String args[]){
    int n=2;
    int r=100;
    primeinrange(100);
        }

    }
```

```
Output:
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97
```

```
// write a program to convert BUNARY NUMBER TO DECIMAL NUMBER
    public class functions {
        public static int BtoD(int bin_num){
            int pow=0;
            int decimal_number=0;
            while(bin_num>0){
                int lastdigit=bin_num%10;
                decimal_number+=lastdigit*(int)Math.pow(2,pow);
                pow++;
                bin_num=bin_num/10;


            }
            return decimal_number;

        }
        public static void main(String args[]){
            int bin_num=111;
            System.out.println("Decimal ="+BtoD(bin_num));
```

```
        }
Output:

Decimal =7


 // write a program to convert  DECIMAL NUMBER t TO BINARY NUMBER
    public class functions {
        public static int DtoB(int des_num){
            int pow=0;
            int bin_number=0;
            while(des_num>0){
                int lastdigit=des_num%2;
                bin_number+=lastdigit*(int)Math.pow(10,pow);
                pow++;
                des_num=des_num/2;


            }
            return bin_number;

        }
        public static void main(String args[]){
            int des_num=7;
            System.out.println("Binary no ="+DtoB(des_num));

        }




    }

Output:
Binary no =111
```