1)SWAPPING THE NUMBERS PROGRAM

```
public class Main {
    public static void main(String args[]){
        int a=10;
        int b=20;
        System.out.println(a);
        System.out.println(b);
        using temporary variable
        int temp=a;
        a=b;
        b=temp;

        without using temporary variable by +&-
        a=a+b;
        b=a-b;
        a=a-b;


        without using third variable using multiplication and division

        a=a*b;
        b=a/b;
        a=a/b;


        without using third variable using bitwise XOR

        a=a^b;
        b=a^b;
        a=a^b;

        without using third variable using logic

         b =a+b-(a=b);
        System.out.println("after swapping:"+a);
        System.out.println("before swapping"+b);
    }
}
```

2) REVERSING A NUMBER PROGRAM

```
import java.util.Scanner;
public class Main {
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the number");
        int num=sc.nextInt();
        using a logic
        int rev=0;
        while(num!=0){
            rev=rev*10+num%10;
            num=num/10;
```

```
        }


        using string buffer class
        StringBuffer sb=new StringBuffer(String.valueOf(num));
        StringBuffer rev=sb.reverse();
        System.out.println(rev);


        using stringbuilder class
        StringBuilder sbl=new StringBuilder();
        sbl.append(num);
        StringBuilder rev=sbl.reverse();
        System.out.println(rev);
    }
}
```

3) REVERSING A STRING PROGRAM

```
import java.util.Scanner;
public class Main {
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the string");
        String str=sc.next();
        by taking the length and concatenation
        int len=str.length();
        String rev="";
        for(int i=len-1;i>=0;i--){
            rev345
        =rev+str.charAt(i);
        }


        by using character Array
        int len=str.length();
        char a[]=str.toCharArray();
        String rev="";
        for(int i=len-1;i>=0;i--){
           rev=rev+a[i];
        }


        by using string buffer class

        StringBuffer sb=new StringBuffer(str);
        System.out.println(sb.reverse());

    }
}
```

4)PALINDROME NUMBER PROGRAM

```
import java.util.Scanner;
public class Main{
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the number");
        int num=sc.nextInt();
        int original_num=num;
        System.out.println("original number:"+original_num);
        int rev=0;
        while(num!=0){
         rev=rev*10+num%10;
         num=num/10;
        }
        System.out.println("reversed number:"+rev);
        if(original_num==rev){
            System.out.println("The num is palindrome");
        }else{
            System.out.println("The number is not a palindrome");
        }
    }
}
```

5)PALINDROME STRING PROGRAM

```
import java.util.Scanner;
public class Main{
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the string");
        String str=sc.next();
        String original_str=str;
        System.out.println("original number:"+original_str);
        String rev="";
        int len=str.length();
        for(int i=len-1;i>=0;i--){
            rev=rev+str.charAt(i);
        }
        System.out.println("reversed string:"+rev);
        if(original_str.equals(rev)){
            System.out.println("The string is palindrome");
        }else{
            System.out.println("The string is not a palindrome");
        }
    }
}
```

6)CHECKING WHETHER A NUMBER IS EVEN OR ODD BY COUNT

```
import java.util.Scanner;
```

```
public class Main{
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the number");
        int num=sc.nextInt();
        int temp=num;
        int even_count=0;
        int odd_count=0;
        while(temp>0){
            int digit=temp%10;
            if(digit%2==0){
                even_count++;
            }else{
                odd_count++;
            }
            temp=temp/10;
        }
        System.out.println("even count:"+even_count);
        System.out.println("odd count:"+odd_count);
    }
}
```

7)FINDING THE LARGEST NUMBER AMONG THREE NUMBERS

```
import java.util.Scanner;
public class Main{
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the first number:");
        int a=sc.nextInt();
        System.out.println("Enter the second number:");
        int b=sc.nextInt();
        System.out.println("Enter the third number:");
        int c=sc.nextInt();
        if(a>b && a>c){
            System.out.println(a+"is greater");
        }else if(b>a && b>c){
            System.out.println(b+"is greater");
        }else{
            System.out.println(c+"is greater");
        }

        using ternary operator
        int largest=a>b?a:b;
        int la=c>largest?c:largest;
        System.out.println(la);
    }
}
```

8)Adding the digits of a given number

```
import java.util.Scanner;
public class Main{
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the  number:");
        int num=sc.nextInt();
        int sum=0;
        while(num>0){
            sum=sum+num%10;
            num=num/10;


        }
        System.out.println("Sum of the given digits:"+sum);

    }
}
```

9)CHECKING WHETHER A GIVEN NUMBER IS PRIME OR NOT

```
import java.util.Scanner;
public class Main{
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the  number:");
        int num=sc.nextInt();
        int count=0;
        if(num>1){
             for(int i=1;i<=num;i++){
                if(num%i==0){
                    count++;
                }
             }
             if(count==2){
                System.out.println("The given number is a prime number");
             }else{
                System.out.println("The given number is not a prime");
             }
        }
    }
}
```

10)FIBONACCI SERIES PROGRAM

```
public class Main{
    public static void main(String args[]){
        int n1=0;
        int n2=1;
        System.out.print(n1+" "+n2);
        for(int i=2;i<=10;i++){
```

```
            int n3=n1+n2;
            System.out.print(" "+n3+" ");
            n1=n2;
            n2=n3;
        }

    }
}
```

11)PROGRAM FOR PRINTING THE SUM OF AN ARRAY

```
public class Main{
    public static void main(String args[]){
        int a[]={1,7,2,3,4};
        int sum=0;
        for(int i=0;i<a.length;i++){
            sum=sum+a[i];
        }
        System.out.println("Sum of an array:"+sum);

    }
}
```

12)PROGRAM FOR PRINTING THE RANDOM NUMBERS

```
import java.util.*;
import cn.hutool.core.util.RandomUtil;
public class Main{
    public static void main(String args[]){
        by using random class
         Random rand=new Random();
        int num=rand.nextInt(12);
        double num=rand.nextDouble();
        System.out.println(num);


        by using math function
        System.out.println(Math.random());



        by using string random util
        String s=StringRandomUtil.randomNumeric(3);
        System.out.println(s);
        String sd=StringRandomUtil.randomAlphabetic(3);
        System.out.println(sd);


    }
}
```

13)PROGRAM FOR PRINTING THE EVEN AND ODD NUMBERS

```
public class Main{
    public static void main(String args[]){
        int a[]={1,2,3,4,5};
        for(int i=0;i<a.length;i++){
            if(a[i]%2==0){
                System.out.println(a[i]+" is a even number");
            }else{
                System.out.println(a[i]+" is an odd number");
            }
        }


        by using enhanced for loop or foreach loop
        for(int value:a){
            if(value%2==0){
               System.out.println(value+" is an even number");
            }else{
                System.out.println(value+" is an odd number");
            }
        }
    }
}
```

14)PROGRAM FOR PRINTING THE FACTORIAL OF A GIVEN NUMBER

```
import java.util.Scanner;
public class Main{
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the number:");
        int num=sc.nextInt();
        long factorial=1;
        for(int i=num;i>=1;i--){
            factorial=factorial*i;
        }
        System.out.println("factorial of the given number
is:"+factorial);
    }
}
```

15)PROGRAM FOR PRINTING MISSING VALUES IN AN ARRAY
FOR PRINTING THE MISSING VALUES THERE SHOULD BE NO DUPLICATES AND THERE SHOULD BE NO SORTED ORDER BUT IT SHOULD BE IN A RANGE

```
import java.util.Scanner;
public class Main{
    public static void main(String args[]){
        int a[]={1,3,4,5,6};
        int sum1=0;
        for(int i=0;i<a.length;i++){
            sum1=sum1+a[i];
        }
```

```
        System.out.println("sum of the array:"+sum1);




    int sum2=0;
    for(int i=1;i<=6;i++){
        sum2=sum2+i;
    }
    System.out.println("sum of the range:"+sum2);
    System.out.println("missing value is:"+(sum2-sum1));
}
}
```

16)PROGRAM FOR PRINTING WHETHER THE TWO ARRAYS ARE EQUAL OR NOT
FOR PRINTING THE ARRAYS WHERE EQUAL OR NOT FIRST THERE LENGTH SHOULD BE EQUAL THEN ONLY WE CAN BE ABLE TO CHECK WHETHER THEY WERE EUAL OR NOT

```
import java.util.Scanner;
public class Main{
    public static void main(String args[]){
        int a1[]={1,3,4,7,6};
        int a2[]={1,3,4,5,6};
        boolean status=true;
        if(a1.length==a2.length){
        for(int i=0;i<a1.length;i++){

                if(a1[i]!=a2[i]){
                    status=false;
                }

            }
           }   else{
                status=false;
            }


      if(status==true){
        System.out.println("The arrays are equal");
      }else{
        System.out.println("The arrays are not equal");
      }

}
}
```

17)PROGRAM FOR PRINTING THE MAXIMUM AND MINIMUM VALUE IN AN ARRAY
FOR THIS WE USED TO TAKE MAXIMUM ELEMENT AS INITIAL VALUE AND MINIMUM ELEMENT AS INITIAL VALUE THEN WE USED TO COMPARE WITH THE OTHER ELEMENTS

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

```
        int a[]={1,3,4,7,6};
        int max=a[0];
        for(int i=1;i<a.length;i++){
          if(a[i]>max){
            max=a[i];
          }
        }
        System.out.println("maximum element in an array:"+max);

        int min=a[0];
        for(int i=0;i<a.length;i++){
          if(a[i]<min){
            min=a[i];
          }
        }
        System.out.println("minimum value in an array:"+min);

}
}
```