Assignment-1

Ques1 : Write a program to print your name.

class Name {

    void naam() {// function for printing name

        System.out.printf("My name is Dev Gupta");

    }

}

class MainClass {// main class

    public static void main(String[] args) {

        Name N = new Name();// reference of class Name

        N.naam();// calling of function of class Name by its reference N

    }

}

Ques2: Write a program to implement binary search.

class Bubblesort {// Bubble sort class

    void bubblesort(int A[]) {// bubble sort method

        int size = A.length;// size of array

        for (int i = 0; i < size; i++) {

            for (int j = 0; j < size - i - 1; j++) {// At every iteration we are

                if (A[j] > A[j + 1]) { // putting the large value of the current array

                                       // at position size-i-1

                    int temp = A[j]; // swaping the values

                    A[j] = A[j + 1];

                    A[j + 1] = temp;

                }

            }

        }

    }

}

class BinarySearch {

    int pos = -1;

    int search(int A[], int l, int r, int value) {

        if (r >= l) {

            int mid = l + (r - l) / 2;

            if (A[mid] == value)

                return mid;// if value equals to mid value it returns to the main class

            if (A[mid] > value) { // if value smaller than mid value then it goes to left of the mid value

                return search(A, l, mid - 1, value);// recursive call

            }

            // if value greater than mid value then it goes to right of the mid value

            return search(A, mid + 1, r, value);// recursive call

        }

        return -1;

    }

}

class MainClass {

    public static void main(String[] args) {

        int[] A = { 23, 25, 29, 10, 5, 34, 78 };// random elements are taken

        BinarySearch check = new BinarySearch();// reference of class Binarysearch

        Bubblesort obj = new Bubblesort();// reference of class Bubblesort

        obj.bubblesort(A);// method calling

        int get = check.search(A, 0, A.length - 1, 34);

        if (get > -1) {

            System.out.printf("Element Found at pos %d", get + 1);

        }

        else {

            System.out.printf("Element not Found ");

        }

    }

}

Ques3: Implement Bubble Sort.

class Bubblesort {

    void bubblesort(int A[]) {// bubble sort method

        int size = A.length;// size of array

        for (int i = 0; i < size; i++) {

            for (int j = 0; j < size - i - 1; j++) {// At every iteration we are

                if (A[j] > A[j + 1]) { // putting the large value of the current array

                                       // at position size-i-1

                    int temp = A[j]; // swaping the values

                    A[j] = A[j + 1];

                    A[j + 1] = temp;

                }

            }

        }

    }

    void printarray(int A[]) {// printing the array

        for (int j = 0; j < A.length; j++) {

            System.out.printf("%d ", +A[j]);

        }

    }

}

class MainClass {

    public static void main(String[] args) {

        int[] arr = { 23, 25, 29, 10, 5 };

        Bubblesort B = new Bubblesort();// reference of the class Bubblesort

        B.bubblesort(arr);// method calling

        B.printarray(arr);// method calling

    }

}

Ques4: Check whether a triangle is valid or not.

class Istriangle {

    void check(int a, int b, int c) {

        if (a + b > c && a + c > b && b + c > a) {// checking the required condition

            System.out.printf("Triangle exists");

        } else {// if condition doesnot satisfy

            System.out.printf("Triangle doesnot exists");

        }

    }

}

class MainClass {

    public static void main(String[] args) {

        int a = 3, b = 7, c = 5;

        Istriangle object = new Istriangle();// reference of the class Istriangle

        object.check(a, b, c);// method calling

    }

}