PRACTICE-PROJECT6

IMPLEMENTING THE INSERTION SORT ALGORITHM –

**package** project;

**import** java.util.InputMismatchException;

**import** java.util.Scanner;

**public** **class** InsertionSort {

**public** **void** insertionSort(**int** arr[]) {

**int** size = arr.length;

**for**(**int** j=1; j<size; j++) {

**int** key = arr[j];

**int** i = j-1;

**while**(i>=0 && arr[i] > key) {

arr[i+1] = arr[i];

i--;

}

arr[i+1] = key;

}

}

**public** **void** printArray(**int** arr[]) {

System.***out***.print("[");

**for**(**int** i=0; i<arr.length; i++) {

System.***out***.print(arr[i]);

**if**(i != arr.length-1) {

System.***out***.print(",");

}

}

System.***out***.print("]");

System.***out***.println();

}

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

InsertionSort obj = **new** InsertionSort();

**try** {

System.***out***.println("Enter the size of array: ");

**int** size = sc.nextInt();

**if**(size <= 0) {

System.***out***.println("Invalid input");

sc.close();

**return**;

}

**int** arr[] = **new** **int**[size];

System.***out***.println("Enter the array elements: ");

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

arr[i] = sc.nextInt();

}

System.***out***.println("Original array: ");

obj.printArray(arr);

obj.insertionSort(arr);

System.***out***.println("\nAfter sorting: ");

obj.printArray(arr);

} **catch** (InputMismatchException e) {

System.***out***.println("Invalid input");

}

**catch**(Exception e) {

System.***out***.println(e.getMessage());

}

sc.close();

}

}