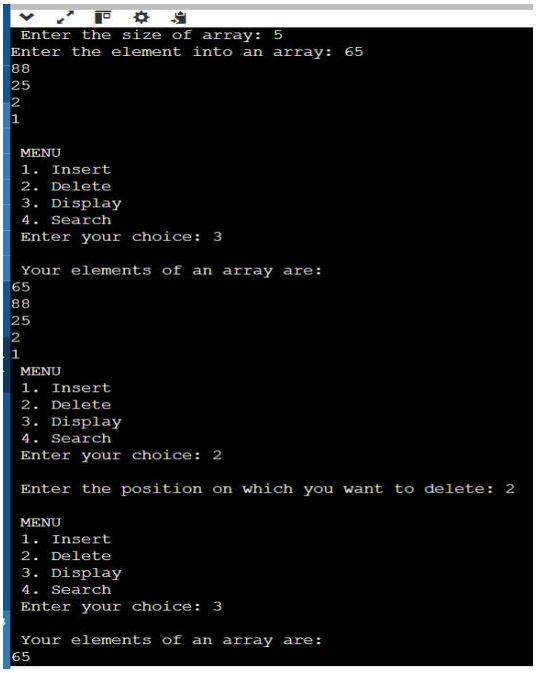
1.one dimensional array

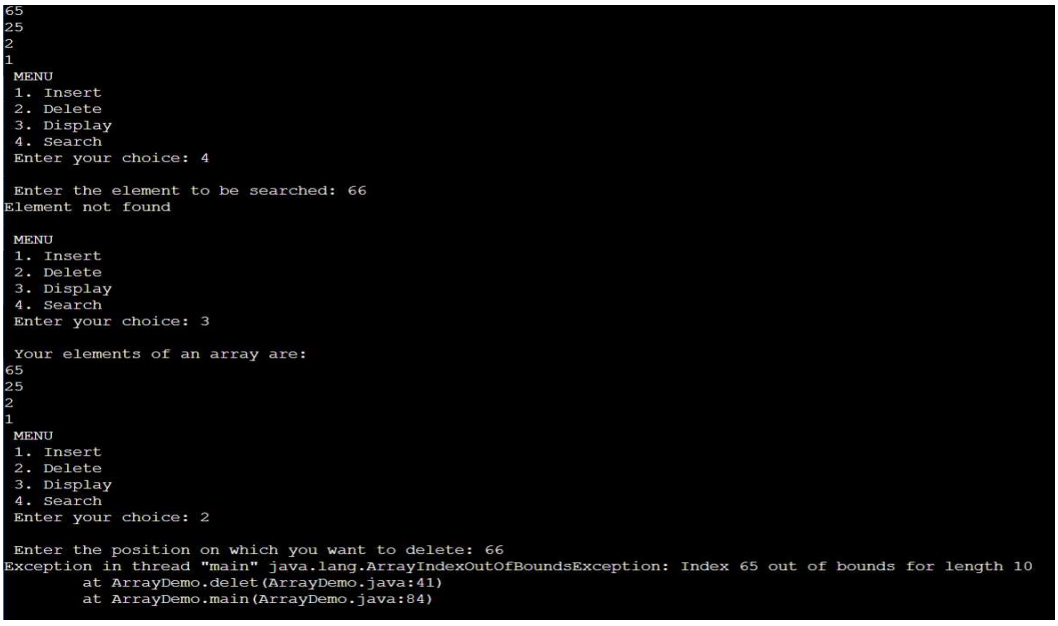
```
import java.util.Scanner; class
ArrayDemo {
 int[] arr = new int[10];
int n;  public void get()
{
 Scanner scanner = new Scanner(System.in);
System.out.print("\n Enter the size of array: ");
n = scanner.nextInt();
 System.out.print("Enter the element into an array: ");
 for (int i = 0; i < n; i++) {
arr[i] = scanner.nextInt();
 }
 }
 public void insert() {
 Scanner scanner = new Scanner(System.in);
int num, loc;
 System.out.print("Enter element for insert:
");  num = scanner.nextInt();
System.out.print("Enter location: ");  loc =
scanner.nextInt();  for (int i = n; i >= loc; i--) {
arr[i] = arr[i - 1];
 }
 n++;
arr[loc - 1] = num;
}
 public void delet() {
 Scanner scanner = new Scanner(System.in);
 int item, k;
```

```
 System.out.print("\n Enter the position on which you want to delete: ");
k = scanner.nextInt();
 k = k - 1;  item = arr[k];
for (int j = k; j < n - 1; j++) {
arr[j] = arr[j + 1];
 }
 n = n - 1;
 }
 public void display() {
 System.out.print("\n Your elements of an array are: ");
 for (int i = 0; i < n; i++) {
 System.out.print("\n" + arr[i]);
 }
 }
 public void search() {
 Scanner scanner = new Scanner(System.in);
 int ele;
 System.out.print("\n Enter the element to be searched:
");  ele = scanner.nextInt();  for (int i = 0; i < n; i++) {  if
(arr[i] == ele) {
 System.out.println("Element found");
return;
 }
 }
System.out.println("Element not found");
}
 public static void main(String[] args) {
Scanner scanner = new Scanner(System.in);
 int ch;
 ArrayDemo a1 = new ArrayDemo();
```

```
 a1.get();
while (true) {
 System.out.print("\n MENU");
 System.out.print("\n 1. Insert");
 System.out.print("\n 2. Delete");
 System.out.print("\n 3. Display");
 System.out.print("\n 4. Search");
System.out.print("\n Enter your choice: ");
ch = scanner.nextInt();  switch (ch) {  case
1:  a1.insert();  break;  case 2:  a1.delet();
break;  case 3:  a1.display();  break;  case
4:  a1.search();  break;  default:
 System.out.println("Enter proper choice");
 }
}
}
}
```

Out put





2.Add & Subs OF Two matrix

```
import java.util.Scanner;   class matrces{

int[][] a = new int[10][10]; int[][] b =
```

```
new int[10][10]; int[][] d = new
int[10][10];
int r, c, i, j, k;
public void get()
{
Scanner scanner = new Scanner(System.in);
System.out.print("Enter the number of rows = ");
r = scanner.nextInt();
System.out.print("Enter the number of columns = ");
c = scanner.nextInt();
System.out.println("Enter the first matrix elements = ");
for (i = 0; i < r; i++) {  for
(j = 0; j < c; j++) { a[i][j] =
scanner.nextInt();
}
}
System.out.println("Enter the second matrix elements :");
for (i = 0; i < r; i++) { for
(j = 0; j < c; j++) {
b[i][j] =scanner.nextInt();
}
}
}
public void addition() {


for(i = 0; i < r; i++){  for
(j = 0; j < c; j++) { d[i][j]
= a[i][j] + b[i][j];
}
}
```

```
System.out.println("Addition of two matrices = ");
for (i = 0; i < r; i++) {  for
(j = 0; j < c; j++) {
System.out.print(d[i][j] +" ");
}
System.out.println();
}
}
public void subtraction() {
for (i = 0; i < r; i++) { for (j
= 0; j < c; j++) { d[i][j] =
a[i][j] - b[i][j];
}
}
System.out.println("Subtraction of two matrices = ");
for (i = 0; i < r; i++) { for
(j = 0; j < c; j++) {
System.out.print(d[i][j] + " ");
}
System.out.println();
}
}
public static void main(String[] args) {  Scanner
scanner = new Scanner(System.in);  matrces
m = new matrces();
m.get();


int choice; do
{
```

```
System.out.println("1. Addition");
System.out.println("2. Subtraction");
System.out.println("3. Exit");
System.out.print("Enter your choice:
");  choice = scanner.nextInt(); switch
(choice) {  case 1:
m.addition();
break;  case
2:
m.subtraction(); break; case 3:
System.exit(0); break;  default:
System.out.println("Invalid choice");
}
}
while (choice != 3);
}
}
```

Out put

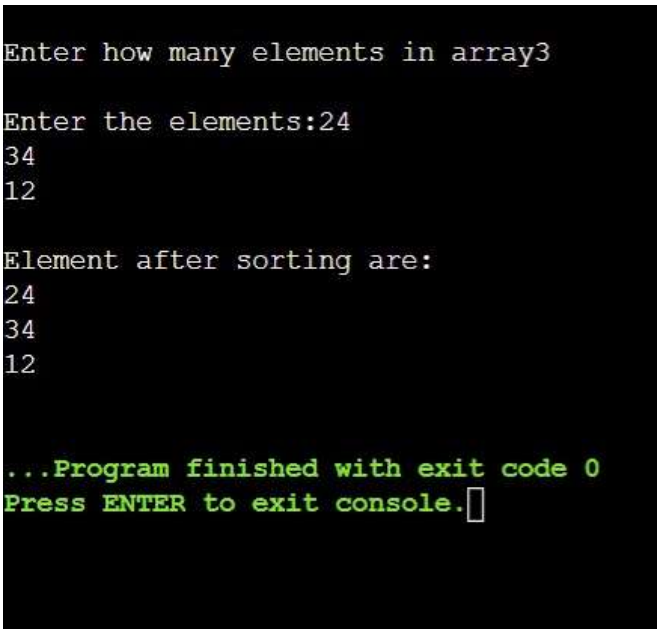
```
Enter the number of rows = 2
Enter the number of columns = 2
Enter the first matrix elements =
11
32
21
3
Enter the second matrix elements :
12
33
2
12
1. Addition
2. Subtraction
3. Exit
Enter your choice: 1
Addition of two matrices =
23 65
23 15
1. Addition
2. Subtraction
3. Exit
Enter your choice: 2
Subtraction of two matrices =
-1 -1
19 -9
1. Addition
2. Subtraction
3. Exit
Enter your choice: 3


...Program finished with exit code 0
Press ENTER to exit console.
```

3.bubblesort

```
import java.util.Scanner;

class Bsort{ int [] a =

new int [30]; int N;

public void get(){

Scanner ls =new Scanner(System.in);

System.out.print("\nEnter how many elements in array");
```

```
N = ls.nextInt();
System.out.print("\nEnter the elements:");
for(int i=0; i<N;i++){ a[i]
= ls.nextInt();
}
}
public void sort(){
int temp; for(int
j=0;j<N;j++){ if
(a[j]>a[j+1]){
temp=a[j];
}
}
}
public void put(){
System.out.println("\nElement after sorting are:");
for(int i=0; i<N;i++){
System.out.println(a[i]);
}
}
public static void main(String[]args){ Bsort
b=new Bsort();
b.get();
b.sort();
b.put();
}
}
```

Out put

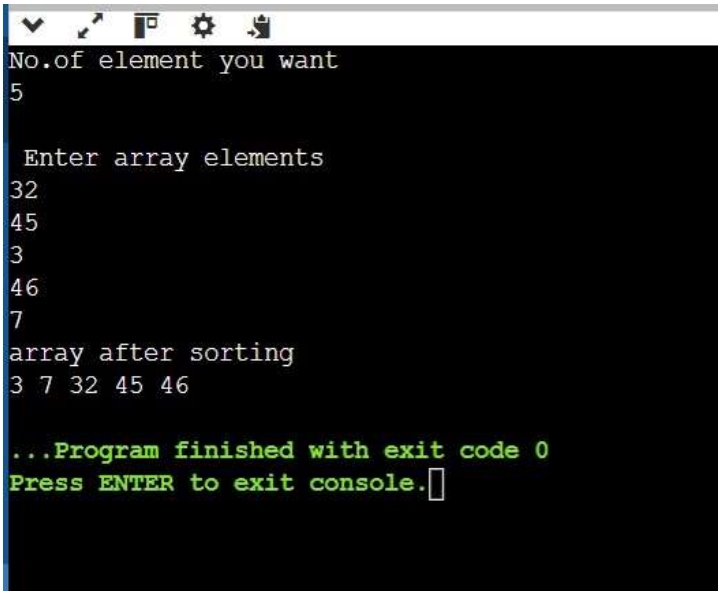


4.Insertion Sort

```
import java.util.Scanner;
class Isort {  int[] a =
new int[10];  int n;  void
get() {
 Scanner  scanner  =  new  Scanner(System.in);
System.out.println("No.of element you want");
n = scanner.nextInt();
 System.out.println("\n Enter array elements");
 for (int i = 0; i < n; i++) {
```

```
 a[i] = scanner.nextInt();
 }
 }
 void sort() {  int temp, i,
j;  for (i = 1; i <= n - 1;
i++) {  temp = a[i];
 j = i - 1;
 while (j >= 0 && temp < a[j]) {
 a[j + 1] = a[j];
j = j - 1;
 }
 a[j + 1] = temp;
 }
 }
 void display() {
 System.out.println("array after sorting");
for (int i = 0; i < n; i++) {
 System.out.print(a[i] + " ");
 }
 }
 public static void main(String[] args) {
Isort obj = new Isort();  obj.get();
obj.sort();  obj.display();
 }
}
```

Out put

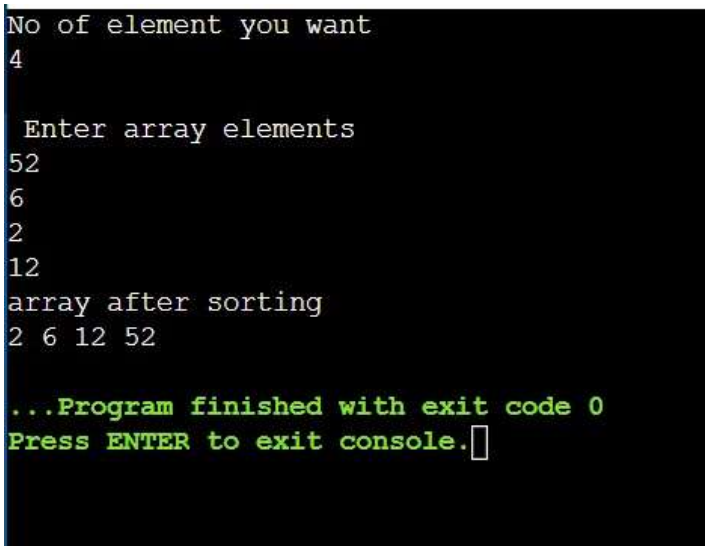


5.Selection Sort

```
import java.util.Scanner;
class Ssort {  int[] a =
new int[10];  int n, min,
loc, temp;  void get() {
 Scanner scanner = new Scanner(System.in);
System.out.println("No of element you want");
n = scanner.nextInt();
 System.out.println("\n Enter array elements");
 for (int i = 0; i < n; i++) {
a[i] = scanner.nextInt();
 }
 }
```

```
 void sort() {  for (int i =
0; i < n; i++) {  min =
a[i];
 loc = i;  for (int j = i + 1; j <
n; j++) {  if (min > a[j]) {
min = a[j];  loc = j;
 }
 }
 temp = a[i];
a[i] = a[loc];
 a[loc] = temp;
 }
 }
void display() {
 System.out.println("array after sorting");
for (int i = 0; i < n; i++) {
 System.out.print(a[i] + " ");
 }
 }
 public static void main(String[] args) {
Ssort obj = new Ssort();  obj.get();
obj.sort();  obj.display();
 }
}
```

Out put


No of element you want
4
Enter array elements
52
6
2
12
array after sorting
2 6 12 52
...Program finished with exit code 0
Press ENTER to exit console.