Day-10

Q) Find the smallest and the second smallest element in a given Array

5

arr → 5 10 1 -5 6

smallest → -5 second smallest → 1

Case → assume that atleast 2 distinct elements will be there

no of elements → 6

arr → 10 6 7 5 5

smallest → 5

second smallest → 6

Program:

```
import java.util.Scanner;
class classA{
  public static void main(String[] args){
   Scanner sc = new Scanner(System.in);
    int N = sc.nextInt();
    int arr[] = new int[N];
   for(int i=0; i<N; i++){ arr[i] = sc.nextInt(); }
int min = Integer.MAX_VALUE;
  for(int i=0; i< N; i++){
    if(arr[i]<min){
      min = arr[i];
    }
  }
S.o.pln(min);
int sec_min = Integer.MAX_VALUE;
  for(int i=0; i<N; i++){
      if(arr[i]==min) continue;
      if(arr[i]<sec_min) sec_min = arr[i];
}
S.o.pln(sec_min);
}
}
if(sec_min==Integer.
MAX_VALUE){
  min=-1;
  sec_min=-1;
}
```

Better approach

```
~~for~~
int min = Integer.MAX_VALUE;
int sec_min = Integer.MAX_VALUE;
for(int i=0; i<N; i++){
    if (arr[i]<min){
        sec_min = min;
        min = arr[i];
    }else if(arr[i]<=min && arr[i]!=min){
        sec_min = arr[i];
    }
}
S.o.pln(min+" "+sec_min);
}
```

5 4 1 2 3

min = 1

sec_min = 2

Q) Print reverse of a given array

N ⇒ 5

I/P ⇒ 1 2 3 4 5

O/P ⇒ 5 4 3 2 1

2 methods

1) Arrays.reverse(arr);

int i=0

int j=N-1;

~~for(int i=0; i<N; i++)~~ {

while(i<j){

int temp = arr[i]; (or)

arr[i] = arr[j];

arr[j] = temp;

→ arr[n-1] = arr[i];

i++;

j--;

}

arr[5]=, arr[0]

Q) Find the median of given sorted array

Better approach

```
int min = Integer.MAX_VALUE;
int sec_min = Integer.MAX_VALUE;
for(int i=0; i<N; i++){
    if (arr[i]<min){
        sec_min = min;
        min = arr[i];
    }
    else if (arr[i]<sec_min && arr[i]!=min){
        sec_min = arr[i];
    }
}
S.o.ph [min + " " + sec_min);
}
```

5 4 1 2 3

min = 1

sec_min = 2

Q) Print reverse of a given array

N ⇒ 5

I/P ⇒ 1 2 3 4 5

O/P ⇒ 5 4 3 2 1

2 methods

1) Arrays.reverse(arr);

```
int i=0
int j=N-1;
for(int i=0; i<N; i++){
while (i<j){
int temp = arr[i]; (or) → arr[n-1] = arr[i];
arr[i] = arr[j];          i++;
arr[j] = temp;            j--;
                      }
```

arr[5] = arr[0]

4 ← 1

3 ← 2

Q) Find the median of given sorted array