Program 1: Find Maximum and Minimum array

```
arr = {5, 2, 9, 1, 7}
n = 5
maxVal = arr[0]; // maxVal = 5
minVal = arr[0]; // minVal = 5
(i=1 i<n)
  if(2 > maxVal) {
      max = arr[i]
  }
  if(2 < minVal) {
      minV = arr[i] }
```

Output
max = 9
min = 1

0	1	2	3	4
5	2	9	1	7

i=1
2 > 5 ✗
2 < 5 ✓
maxVal = 5
minVal = 2

i=2 , 2<5 ✓
9 > 5 ✓
maxV = 9
9 < 2 ✗
maxV = 9
minV = 2

i=3 , 3<5 ✓
1 > 9 ✗
1 < 2 ✓
minV = 1
maxV = 9
minV = 1

i=4 , 4<5 ✓
7 > 9 ✗
7 < 1 ✗
maxV = 9
minV = 1

i=5 , 5<5 ✗

Homework: Find the second smallest element in the given array.

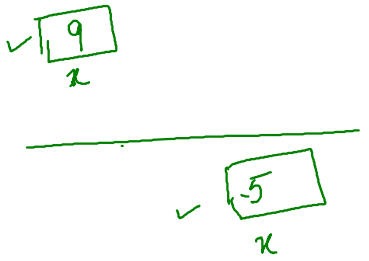
arr = {12, 3, 7, 1, 9}
Output : 3

Step1 : find min no. => min
Step2 : find second smallest element

Try
Soln
comment Section

Program 2: Update Array |Pass by Reference

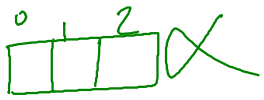
```
void variableChange(int x){
    x=9;
}
int main(){
    int x=5;
    cout<<"Before :"<<x<<endl;
    variableChange(x);
    cout<<"After :"<<x<<endl;
}
```

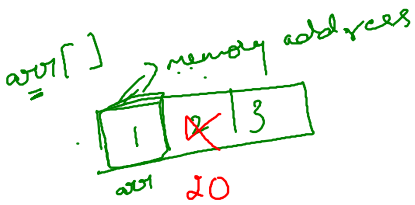


output
- Before :5
- After :5

```
void arrayChange(int arr[]){
    arr[1]=20;
}
int main(){
    int arr[]={1,2,3};
      cout<<"Before :"<<endl;
    for(int i=0;i<3;i++){
        cout<<arr[i]<<endl;
    }
      cout<<"After :"<<endl;
      arrayChange(arr);
       for(int i=0;i<3;i++){
        cout<<arr[i]<<endl;
    }

}
```





cout<<arr<<;

Before :
1
2
3
After :
1
20
2

Program3: Calculate sum of array elements

arr = {2, 3, 5, 7, 10}

=> 2 + 3 + 5 + 7 + 10

= 27 =

sum = 0

for ——

sum = sum + 2 // 0 + 2 = 2

sum = 2 + 3 // 5

=

27

Homework: Calculate product of array elements

arr = {1, 2, 3}

=> 1 * 2 * 3

=> 6 //

Program4: Take input from user

```
int main(){
   int n;
   cout<<"Enter number : "<<endl;
    cin>>n;
    int arr[n];
    for(int i=0;i<n;i++){
        cin>>arr[i];
    }
   cout<<"Printing Array : "<<endl;
   for(int i=0;i<n;i++){
        cout<<arr[i]<<endl;
    }
}
```

5

n

arr[5] arr[ ] error

0, 1, 2, 3, 4

(4 6 8 9 10)

Program5: Take user input and update value

Program6: Reverse array

arr = {1, 2, 3, 4, 5}

Output 5, 4, 3, 2, 1

5 4, 3, 2 1

n=5

n-1

i=n-1 ; i>=0 ; i--

i=4 4, >=0 ✓

i=3 -1 >=0 ✗

i=0

Question: Are these declarations are correct?

int num[ ]; ✓

int num( ); ✗

int arr = {1, 7, 9} ✗

↳ int arr[ ] = {1, 7, 9} —

int arr[3] = {1, 7, 9} ✓

int n = 5; arr[n]; ✓

arr[3] ✓

int arr[n], n=5

Question: What this expression refers?

arr[6];

↳ 7th element inside the array

int arr[6];

int arr[10];

Homework: What will happen when this code is executed?

```
int arr[7];
arr[7] = 9;
```

Homework: Given an integer n, create an array containing the cubes of all natural numbers from 1 to n. Then print the elements of the array.

n = 5
arr = [1, 2, 3, 4, 5]
(1 8, 27, 64, 125)

, n = 3
arr = [1, 2, 3]
(i=1 ; i<=n)

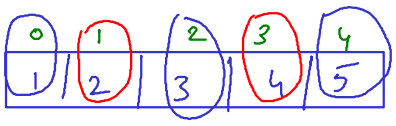
Soln ↓ comment

Program7: Given an array of integers, modify it such that:

- **Odd indexed elements are multiplied by 5**
- **Even indexed elements are incremented by 1**

Then print the updated array.

arr = {1, 2, 3, 4, 5}

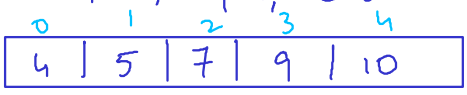


1, 10, 3, 20, 5
2, 10, 4, 20, 6

(i%2==0){
+1
}else{
* 5
}

Homework: Find the difference between the sum of elements at odd indices and the sum of elements at even indices

arr = {4, 5, 7, 9, 10}



Even = 4+7+10 => 21
Odd = 5+9 => 14

Diff = E - O
= 21 - 14
=> 7 //

Program8:Count the number of elements in a given array that are less than a given number x.

arr = { 1, 3, 0, 10, 2, 5, 6 }

x = 4 => 4 elements

x = 6 => 5

x = input

Program9:Write a program to copy the contents of one array into another in the reverse order

arr[5] = {5, 4, 3, 2, 1}

num[5] = {1, 2, 3, 4, 5}

n = 5

n - 1

i=0 , i<5

num[i] = arr[n-1-i]

num[0] = 1

i=1

num[1] = arr[3]

num[1] = 2

num[2] = 3

i=2

num[2] = arr[2]

Program10: Write a program to reverse an array without using any extra array

arr = {5, 4, 3, 2, 1}

EO = {1, 2, 3, 4, 5}

WO = {1, 2, 3, 2, 1}

```
int arr[]={5,4,3,2,1};
   int n=sizeof(arr)/sizeof(arr[0]);

   for(int i=0;i<n;i++){
     arr[i]=arr[n-1-i];
   }
   cout<<"Printing Array"<<endl;
   for(int i=0;i<n;i++){
     cout<<arr[i]<<" ";
   }
```

n = 5

i=0 , 0<5

arr[0] = 1

i=1 , i<5

arr[1] = 2

n-1-i => 4 {1, 4, 3, 2, 1}

n-1-i

5-1-1 = 3

{1, 2, 3, 2, 1}

i = 2 , 2 < 5 ✓

arr[2] = 3

n - 1 - i

5 - 1 - 2

2

{1, 2, 3, 2, 1}

i = 3 , 3 < 5 ✓

arr[3] = 2

n - 1 - i

5 - 1 - 3

1

{1, 2, 3, 2, 1}

i = 4 , 4 < 5 ✓

arr[4] = 1

5 - 1 - 4

=> 0

{1, 2, 3, 2, 1}

i = 5 , 5 < 5 ✗

Swap

{5, 4, 3, 2, 1}

i = 0

temp = 5

arr[0] = arr[n - i - 1] => 1

{1, 4, 3, 2, 5}

arr[n - i - 1] = temp

Homework: If an array arr contains n elements,then check if the given array is a palindrome or not

arr = {1, 2, 3, 2, 1} — Palindrome

{1, 2, 3, 4, 5} — Not Palindrom