Lecture :- 9

Introduction To Arrays

Let suppose i/p → 10000 values है

And o/p :- values की smallest & greater value दो.

Now to store these all 10000 values I required some storage, for that there is a concept of Arrays.

Array :- this is a type of list in which we store same type of element. (that may be anything whether it is custom or user defined datatype or something else).

10000 int	1000 character
array of 10000 int values	array of 1000 character values.

custom datatype → let it is car

create a array of cartype

↳ And total 1000 values hai.

Array → •) Similar type of items.

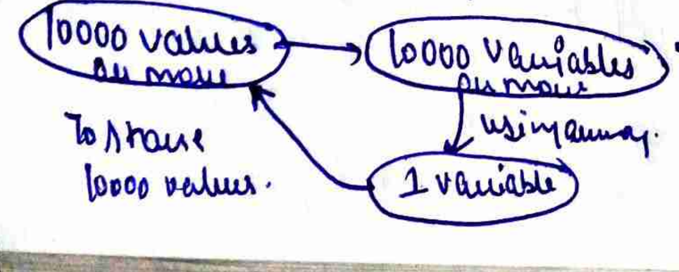
•) Values stored in a Array stored at contiguous location.

Let suppose there is an integer contain 5 value.

3	5	9	2	11

•) All these values we can access using index.

Why we required Array?



that's why we need Array.

int a; → Declaration of variable

→ Some value (a)

int dost[10]; → To declare an array.
[10] → Total no of blocks
int → type

int v[5]; → 2 | 3 | | |
0 1 2 3 4
100 104 108 112 116

v[1] → 100+104 → 104 → address
v[1] → 3 → value

v[0] = 1st location → 2

Here v represents a first location

Intialization:-

int a=5; } variable

5 (a)

int number[3] = {5, 7, 11} } Intialising a array.

5 | 7 | 11
0 1 2

number (name of Array).

int array[1000];

→ | | | | - - - |

(Here you will get some Random values) } If you are giving values in a array.

int array[10000] = {1}; } → Not acceptable → Not possible to intialise all value with 1.

int array[10000] = {0}; } → Acceptable.

int arr [15] = {3, 5} } → At rest of Possitions 0 will filled automatically.

Arrays with functions:-

```
main ()
{
  PrintArray()
}
```

```
PrintArray( — — )
{

}
```

→ Array as a input Parameter

↓ Here size is important if you find a size or actual length of the no of elements present. If size of no of elements present are less than actual size.

~~Here size is important When you given only two to three values as array but is less than a size so if you want to you can find a size of the elements present in that.~~

int a[15] = {3, 2}

Here I will get size 15 rather than 2 if I have not mentioned size in a input function

Ques:- Find max & min element from the array.

arr={1,2,3,4,12,8}

Max=12, Min=1

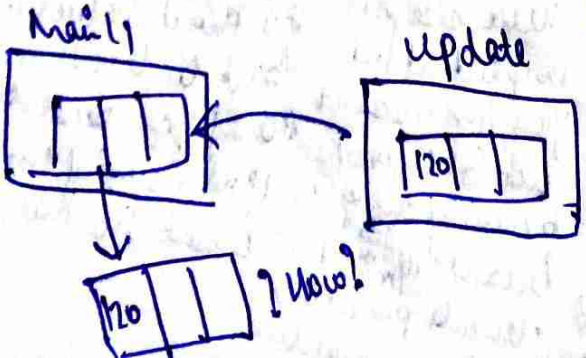
Scope in Array

```
void update(int arr[], int n)
{
  cout<<"Inside the function"<<endl;
  //updating an array
  arr[0]=120;
  for(int i=0;i<3;i++)
  {
    cout<<arr[i]<<endl;
  }
  cout<<"Going back to main function"<<endl;
}
int main()
{
  int arr[3]={1,2,3};
  update(arr,3);
  for(int i=0;i<3;i++)
  {
    cout<<arr[i]<<endl;
  }
  return 0;
}
```

O/P:-

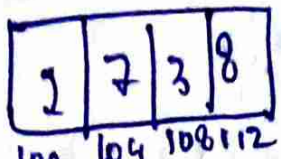
```
Inside the function
120
2
3
Going back to main fun
120
2
3
```

Here why arr[0] is changed in the main function?



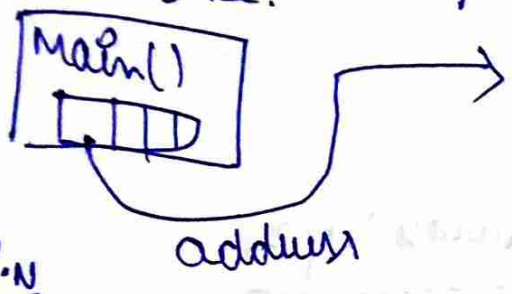
update function → update(int arr[], int n)

call → update(arr, 3)



This arr contains two things first one is name & second is Base address.

main() function mei value isliye change hogayi Because main() function ne array nahi di hai address diya hai first element ka.

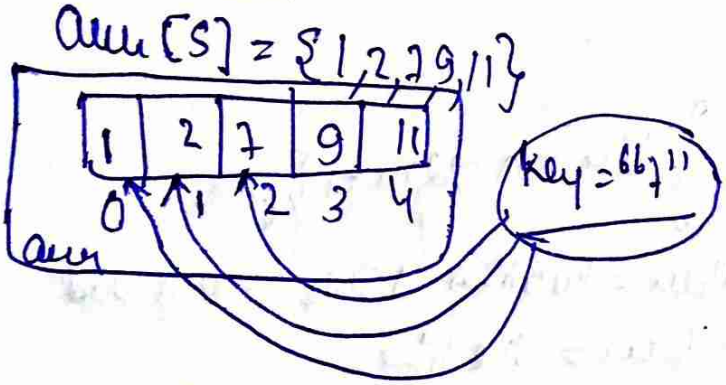


arr → Any processing add, update, remove, } so these processing are going on in actually array only.

P.N

↳ Variable ke case apne jo variable diya uski copy banja rahi.

Linear Search :-



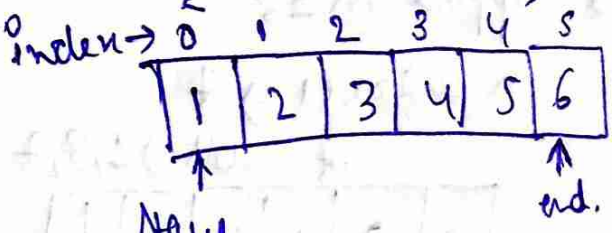
arr[i] == key

Reverse an Array :-

arr → {2, 5, 7, 9, 11}

↳ {11, 9, 7, 5, 2}

Mujhe in dono ko replace karna hai



Algo :- step-1 Swap(start wala, end wala)

step-2 start++, end--

↳ this loop will stop when start cross ends.