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// ARRAY INITIALISATION

// CASE - 1 int aar[] = {1,2,3,4,5};
// CASE - 2 int brr[5] = {13,24,23,223,12};
// CASE - 3 int crr[5] = {1,4};  // other 3 blocks fiiled with 0
// CASE - 4 int drr[2] = {1,5,3,6,3};  // ERROR


// Formula for finding value at any index in an array by calculating its address

    // (Base address + (data_type size) * index))


// Program to print double of an array throgh user input


#include <iostream>
using namespace std;
int main()
{
    int arr[5];
    for (int i = 0; i<5; i++)
    {
        cout << "Enter the value in array at index " << i << " ";
        cin >> arr[i];
    }
    for(int j = 0; j < 5 ;j++)
    {
        cout << arr[j] * 2 << " ";
    }

    return 0;
}


//------------------------------------------------------------------------

// Linear Search in an array - is done to check whether given or targeted element
// is present in the array or not.

#include<iostream>
using namespace std;
int main()
{
    int arr[5]={1,2,3,4,5};
    int target;
    int flag = 0;
    cout << "Enter your target element: ";
    cin >> target;

    for(int i=0;i<5;i++)
    {
        if(arr[i] == target)
        {
            flag++;
            break;
```

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        }
    }
    if(flag == 1)
    {
    cout << "Element present in the array...";
    }
    else
    {
        cout << "Not found...";
    }
}

//------------------------------------------------------------------------
// Array & Functions


#include<iostream>
using namespace std;

Whenever pssing an array always send the size/no of elements in the function
void print(int arr[] , int size)
{
    for(int i = 0; i < size ; i++)
    {
        cout << arr[i] << ' ';
    }
}
int main()
{
    int arr[5]={1,2,3,4,5};
    int size = 5; // here size is the no of Elements
    print(arr , size);
    return 0;
}

//------------------------------------------------------------------------


// linear search using function

#include<iostream>
using namespace std;

int linearsearch(int arr[] , int n , int target)
{
    for(int i=0;i<n;i++)
    {
        if(arr[i] == target)
        {
             return true;
        }
    }
    return false;

}
int main()
{
    int arr[5]={1,2,3,4,5};
    int n = 5;
    int target = 4;
```

```
  bool ans = linearsearch(arr , n , target);

    if(ans == 1)
    {
        cout << "Element Found...";
    }
    else
    {
        cout << "Not Found...";
    }
}

//---------------------------------------------------------------------

// Count 0's and 1's in an array

#include<iostream>
using namespace std;

void countZeroOne(int arr[],int n,int countZero,int countOne)
{
    for(int i = 0; i < n; i++)
    {
        if(arr[i] == 0)
        {
            countZero++;
        }
        else if(arr[i] == 1)
        {
            countOne++;
        }
    }
    cout << "Number of 0's are: " << countZero << endl;
    cout << " Numebr of 1's are: " << countOne << endl;
}
int main()
{
    int arr[5]={0,1,1,0,0};
    int n = 5;
    int countZero = 0;
    int countOne = 0;
    countZeroOne(arr , n, countOne,countZero);
    return 0;
}

//---------------------------------------------------------------------

// Max and Min number in an array

#include<iostream>
using namespace std;

void MaxNumber(int arr[] , int n, int max)
{
    for(int i=0;i<n;i++)
    {
        if(arr[i] > max)
        {
            max =  arr[i];
        }
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    }
    cout << "maximum number in array is: " << max << endl;
}
void MinNumber(int arr[] , int n, int min)
{
    for(int i=0;i<n;i++)
    {
        if(arr[i] < min)
        {
            min =  arr[i];
        }
    }
    cout << "Minimum number in array is: " << min;
}
int main()
{
    int arr[5]={15,23,12,56,34};
    int max = arr[0];
    int min = arr[0];
    int n = 5;
    MaxNumber(arr , n ,max);
    MinNumber(arr,n,min);
    return 0;
}


//------------------------------------------------------------------------
```

Print the reverse of an array

```
#include <iostream>
using namespace std;

void reverseArray(int arr[] , int size)
{
    int left = 0;
    int right = size - 1;
    while(left <= right)
    {
        swap(arr[left] , arr[right]);
        left++;
        right--;
    }
    for(int i = 0; i < size; i++)
    {
    cout << arr[i] << " ";
    }
}


int main()
{
    int arr[10] = {1,3,2,4,54,5,32,22,4,12};
    int size = 10;
    reverseArray(arr , size);
    return 0;
}

//------------------------------------------------------------------------
```

```
// Print extreme of an Array

#include <iostream>
using namespace std;

void extremeArray(int arr[] , int size)
{
    int left = 0;
    int right = size - 1;
    while(left <= right)
    {
        if(left == right)
        {
        cout << arr[left] << " ";
        }
        else
        {
        cout << arr[left] << " " << arr[right] << " ";
        }
    left++;
    right--;
    }

}


int main()
{
    int arr[10] = {10,20,30,40,50,60,70,80,90,100};
    int size = 10;
    extremeArray(arr , size);
    return 0;
}
```