1. Array Operation(display, add, insert, delete)

```
#include<stdio.h>
#include<cstdio>
void Add_Element(int arr[],int n,int x)//n=array length
{
   int j;
   arr[n]=x;
   n++;
   printf("Array After Adding Elements 7 \n");
   for(j=0;j<n;j++)
   {
      printf("%d\n",arr[j]);
   }
}
void Insert_Element(int arr[],int index,int l,int n)
{
   for(int a=n;a>index;a--)
   {
      arr[a]=arr[a-1];
   }
   arr[index]=l;
   n++;
   printf("Array After Inserting Elements \n");
```

```
   for(int j=0;j<n;j++)
   {
      printf("%d\n",arr[j]);
   }

}

void Delete_Index(int arr[],int indx,int n)
{
  int z = arr[indx];
   for(int k=indx;k<n-1;k++)
   {
      arr[k]=arr[k+1];
   }
   n--;
   printf("Array After Deleting Elements \n");
   for(int j=0;j<n;j++)
   {
      printf("%d\n",arr[j]);
   }

}
int main()
{
```

```
int arr[10];//array size=10
int i,n,j,arr_length;
printf("How Many Elements Do you Want to Put?\n");
scanf("%d",&arr_length);//arr_length= 0---- total element-1
printf("Enter The Number Of Elements\n");
for(i=0;i<arr_length;i++)
{
   scanf("%d",&arr[i]);
}
//------DISPLAY ELEMENTS----------
printf("You Entered\n");
 for(i=0;i<arr_length;i++)
{
   printf("%d\n",arr[i]);
}
//------Add or Append ELEMENTS----------
int x=7;
Add_Element(arr,arr_length,x);
 //------INSERT ELEMENTS----------
 int l,index;
 printf("Enter index number(first) and Element (second) for Insert\n");
 scanf("%d %d",&index,&l);
 Insert_Element(arr,index,l,arr_length);
 //------DELETE ELEMENTS----------
```

```
    int indx;
    printf("Enter index which Element do you want to delete\n");
    scanf("%d",&indx);
    Delete_Index(arr,index,arr_length);



}
```

2. Array Search Operation(Linear, Binary)

Linear search

```
#include<iostream>
#include<cstdio>
using namespace std;
void BINARY_SEARCH(int A[],int k,int n)
{
   int j;
   for(j=0;j<n;j++)
   {
      if(k==A[j])
         printf("ELEMENT FOUND!");
   }



}
int main()
```

```
{
   int A[20];
   int i,j,arr_length,key;
   printf("ENTER THE ARRAY LENGTH\n");
   scanf("%d",&arr_length);
   printf("ENTER THE ELEMENTS OF AN ARRAY\n");
   for(i=0;i<arr_length;i++)
   {
      scanf("%d",&A[i]);
   }
    printf("YOUR ENTERED ELEMENTS ARE\n");
    for(i=0;i<arr_length;i++)
   {
      printf("%d\n",A[i]);
   }
   printf("YOUR ENTERED KEY VALUE WHAT YOU WANT TO SEARCH\n");
   scanf("%d",&key);
   BINARY_SEARCH(A,key,arr_length);


}
```

Binary Search

```
#include<iostream>
#include<cstdio>
using namespace std;
void  BINARY_SEARCH(int A[],int n,int k)
{
   int mid;
   int l=0;
   int h=n-1;
   while(l<=h)
   {
      mid=((l+h)/2);
      if(k==A[mid])
     // Code ok but loop go infinite when element found
       printf("ELEMENT FOUND!");
      else if(k<A[mid])
         h=mid-1;
      else
         l=mid+1;
      }

}
int main()
{
   int A[20];
```

```
   int array_length,key;
   printf("ENTER THE ARRAY LENGTH\n");
   scanf("%d",&array_length);
   printf("ENTER THE ARRAY ELEMENTS\n");
   for(int i=0;i<array_length;i++)
   {
      scanf("%d",&A[i]);
   }
   printf("YOU ENTERED\n");
   for(int i=0;i<array_length;i++)
   {
      printf("%d\n",A[i]);
   }

   printf("ENTER KEY VALUE DO YOU WANT TO SEARCH\n");
   scanf("%d",&key);
   BINARY_SEARCH(A,array_length,key);


}
```

3. Array Operation(Get, Set, Max, Min, Sum)

```
#include<stdio.h>
```

```
void ARRAY_GET_OPERATION(int A[],int idx,int n)
{
   printf("YOUR INDEXED VALUE:\n");
   if(idx>=0&&idx<n)
   {
      printf("%d\n",A[idx]);
   }
}
void ARRAY_SET_OPERATION(int A[],int idx_2,int v,int n)
{

   if(idx_2>=0&&idx_2<n)
   {
     A[idx_2]=v;
   }
   printf("ARRAY AFTER SET VALUE:\n");
   for(int j=0;j<n;j++)
   {
      printf("%d\n",A[j]);
   }
}
void MAX_VALUE(int A[],int n)
{
   int max=A[0];
```

```
   for(int i=1;i<n;i++)
   {
      if(A[i]>max)
         max=A[i];
   }
   printf("MAXIMUM VALUE OF GIVEN ARRAY :%d\n",max);
}
void MIN_VALUE(int A[],int n)
{
   int min=A[0];
   for(int i=1;i<n;i++)
   {
      if(A[i]<min)
         min=A[i];
   }
   printf("MINIMUM VALUE OF GIVEN ARRAY :%d\n",min);
}
void SUM_VALUE(int A[],int n)
{
   int sum=0;
   for(int i=0;i<n;i++)
   {
      sum+=A[i];
   }
```

```
    printf("SUM OF GIVEN ARRAY:%d",sum);
}
int main()
{
    int A[15];
    int arr_length;
    printf("HOW MANY ELEMENTS DO YOU WANT TO TAKE?\n");
    scanf("%d",&arr_length);
    printf("ENTER ARRAY ELEMENTS\n");
    for(int i=0;i<arr_length;i++)
    {
        scanf("%d",&A[i]);
    }
     printf("YOU ENTERED\n");
    for(int i=0;i<arr_length;i++)
    {
        printf("%d\n",A[i]);
    }
    //---------Get Operation----------
    int index;
    printf("ENTER INDEX WHICH VALUE DO YOU WANT TO GET\n");
    scanf("%d",&index);
    ARRAY_GET_OPERATION(A,index,arr_length);
    //---------Set Operation----------
```

```
    int index_2,value;
    printf("ENTER INDEX WHERE DO YOU WANT TO SET\n");
    scanf("%d",&index_2);
    printf("ENTER VALUE DO YOU WANT TO SET\n");
    scanf("%d",&value);
    ARRAY_SET_OPERATION(A,index_2,value,arr_length);
    //---------Max Operation----------
    MAX_VALUE(A,arr_length);
    //---------Min Operation----------
    MIN_VALUE(A,arr_length);
    //---------Sum Operation----------
    SUM_VALUE(A,arr_length);

}
```

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