DSA PRACTICAL NO. :- 03

AIM:- [A]: Create an array of size n and write a program to sort a given array by selection sort and bubble sort.

[B]: Write a program to search any integer in your array using binary search concept

Program:

[A] SELECTION SORT :

```
#include<stdio.h>

void main ()

{

   int a[100],z,j,i,temp;

   printf("enter the array size\n");

   scanf("%d",&z);

  printf("enter the array element\n");

   for(i=0;i<z;i++)

   {

      scanf("%d",&a[i]);

      }

      for(i=0;i<z;i++){


      for(j=0;j<=z;j++)

      {

         if (a[i]>a[j])

         {

            temp=a[i];

            a[i]=a[j];

            a[j]=temp;
```

```
        }
      }
    }

printf("Array after sorting is\n");
for (i=0;i<z;i++)
{

printf("%d\n",a[i]);
}

}
```

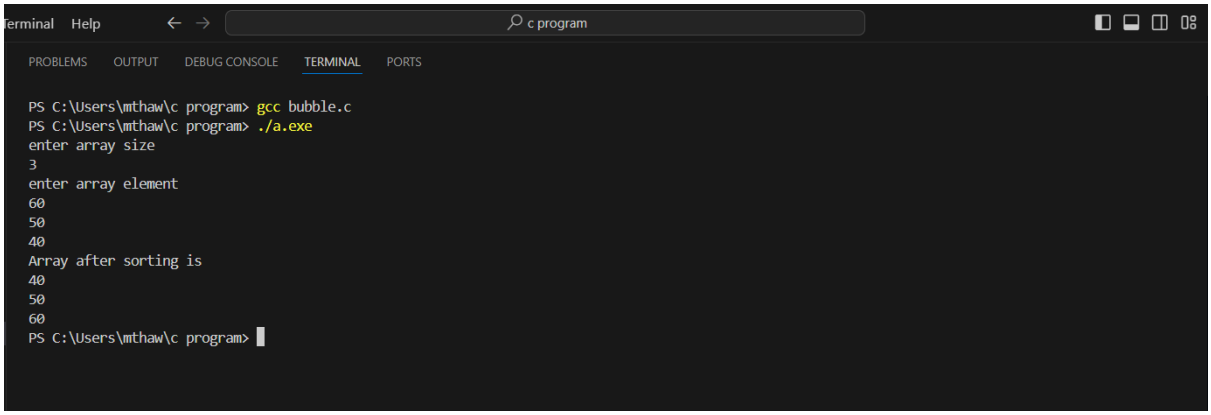
Output:

[A] BUBBLE SORT :

```
#include<stdio.h>
void main ()
{
   int a[100],e,i,j,temp;
   printf("enter array size\n");
   scanf("%d",&e);
```

```
   printf("enter array element\n");
   for(i=0;i<e;i++)
   {
      scanf("%d",&a[i]);
   }

for(i=0;i<e;i++)
{
   for (j=0;j<=e;j++)
   {
      if(a[j]>a[j+1])
      {
         temp=a[j];
         a[j]=a[j+1];
         a[j+1]=temp;

      }
   }
}
printf("Array after sorting is\n");
for(i=0;i<e;i++)
{
   printf("%d\n",a[i]);
}
}
```

Output:

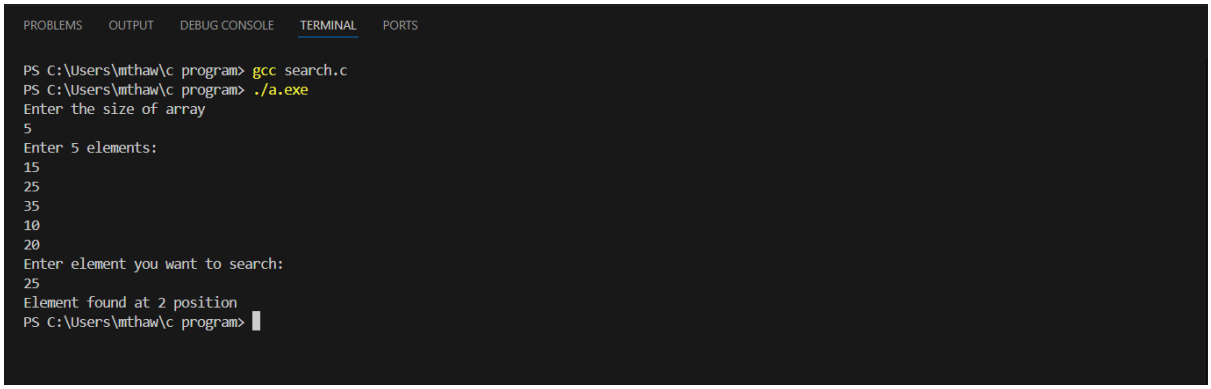


[B] Binary search:

```
#include <stdio.h>


void main()
{
   int i, j, n, mid, low, high, item, found = 0;


   printf("Enter the size of array\n");
   scanf("%d", &n);
   int a[n];


   printf("Enter %d elements:\n", n);


   for (i = 0; i < n; i++)
   {
      scanf("%d", &a[i]);
   }


   printf("Enter element you want to search: \n");
   scanf("%d",&item);
```

```
  low = 0,high = n-1;


  for(i=0;i<(n+1)/2;i++){
     mid=(low + high)/2;
     if(item == a[mid]){
        printf("Element found at %d position\n",mid+1);
        found = 1;
        break;
     }
     else if(item < a[mid]){
        high = mid -1;
     }
     else if(item > a[mid]){
        low = mid + 1;
     }
  }
  if(found != 1){
     printf("Element not found :(\n");
  }


}
```

Output:



Github link : https://github.com/MayurThaware122/DSA