Ankit Raj DAA Lab 1906534

Q1. Given an array. Let us assume that there can be duplicates in the list. write a program to search for an element in the list in such a way that we get the highest index if there are duplicates.

program-

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
int n  m s, ;
printf("Enter the length of array  :");
scanf("%d",&n);
int A[n];
printf("\nEnter the elements  :-");
for(int i =0  i;scanf("%d"  &A[i]);
      }
printf("\nEnter the number to search  :");
scanf("%d"  & m);
for(int i=0  i;if(A[i]==m){
```

```
s=i;
            }
        }
printf("\n The highest index is  :%d "  s);
return 0;
}
```

Q2.write a program for finding i and j in an array A for any key such that $A[j]^2 + A[i]^2 = key$.

program-

```
#include <stdio.h>
void find(int arr[], int n,int key){
    for (int i = 0; i < n - 1; i++) {
        for (int j = i + 1; j < n; j++) {
            if ((arr[i]*arr[i]) + (arr[j]*arr[j]) == key)
printf("The indices are: i=%d j=%d",i,j);
        }
    }
}
int main(){
int A[] = {1,2,3,4,5};
```

```
int n =34;
int arr_size = sizeof(A)   sizeof(A[0]);
find(A, arr_size, n);
return 0;
}
```

Q3.Given key in a sorted array A with distinct values. write a program to find i, j, k such that A[i]+ A[j] + A[k] key.

program-

```
#include<stdio.h>
int main()
{
 int n;
 printf("Enter no of eles\n");
 scanf("%d",&n);
 int target;
 printf("Enter the key\n");
 scanf("%d",&target);
 int a[n];
 printf("Enter the eles\n");
 for(int i=0;i scanf("%d",&a[i]);
```

```
}
int i=0,j,k;
for (i = 0; i < n; i++)
{
j = i + 1;k = n - 1;
while (j < k)
{
 int cur = a[i] + a[j] + a[k];
 if (cur == target){
  printf("The indices are: i=%d j=%d k=%d",i,j,k);
 }
 if (cur < target)
    j++;
  else
     k--;
   }
}
return 0;
}
```

Q4. Suppose an array A has n distinct integers. Increasing sequence is given as A[1]...A[k] and decreasing sequence is given as A[k+1]...A[n]. write a program for finding k.

program-

```
#include <stdio.h>
void main()
{
int n;
printf("Enter size:");
scanf("%d",&n);
int a[n];
for(int i=0;i scanf("%d",&a[i]);
for(int i=0;i if(a[i]>a[i+1]){
 printf("Value  %d",i);
 break;
 }
}
```