Aim: Write a C program for insertion in array.

```
#include<stdio.h>
void main()
{
int arr[100];
int i, pos, value, n;
printf("Enter size of an array (max 100) : \n");
Scanf("%d", &n);
printf("Enter element : \n");
for (i=0 ; i<=n; i++)
{
Scanf("%d", &arr[i]);
}
printf("Enter position :");
Scanf("%d", &pos);
printf("Enter value :");
Scanf("%d", &value);
for (i=n ; i>=pos ; i--)
{
~~array~~ arr[i] = arr[i-1];
}
arr[pos-1] = value;
n++;
printf("New array is :");
for (i=0 ; i<=n; i++)
{ printf("%d", arr[i]);
}
getch();
}
```

Output:

```
Enter size of an array (max 100):
5
Enter element:
6
7
3
9
1
5
Enter position : 3
Enter value : 8
New array : 6783910
```

Date

Aim: Write a C program to linear search in array.

```
#include <stdio.h>
int linearsearch(int arr[], int n, int Key)
{
for(int i=0; i<n; i++)
{
if(arr[i] == Key)
{
return i;
}}
return -1;
}
int main()
{
int arr[] = {10, 50, 70, 80, 80, 60, 20, 90, 40};
int n = sizeof(arr)/sizeof(arr[0]);
int Key = 30;
int result = linearsearch(arr, n, Key);
if (result == -1)
{
printf("Key not found \n");
}
else {
printf("Key found at index : %d\n", result);
}
return 0;
}
```

Page No.
Date

Output :

Key found at index : 3

Date

Aim: Write a program in C to search a element using Binary search.

```
#include <stdio.h>
int binarysearch(int arr[], int left, int right, int x)
{
while (left <= right)
{
int mid = left + (right - left)/2;
if (arr[mid] == x)
   return mid;
if (arr[mid] <x)
   left = mid + 1;
else
   right = mid - 1;
}
return -1;
}
int main()
{ int arr[] = {2, 3, 4, 10, 40};
int n = sizeof(arr)/sizeof(arr[0]);
int x = 10;
int result = binarysearch(arr, 0, n-1, x);
if (result != -1)
   printf("Element is present at index : %d \n", result);
else
   printf("Element is not present in array \n");
return 0;
}
```

Date

Output:

Element is present at index : 3