Name – Keshav Raj Yadav

Sectio- B

Roll No. -2000290100080

Practical 1:

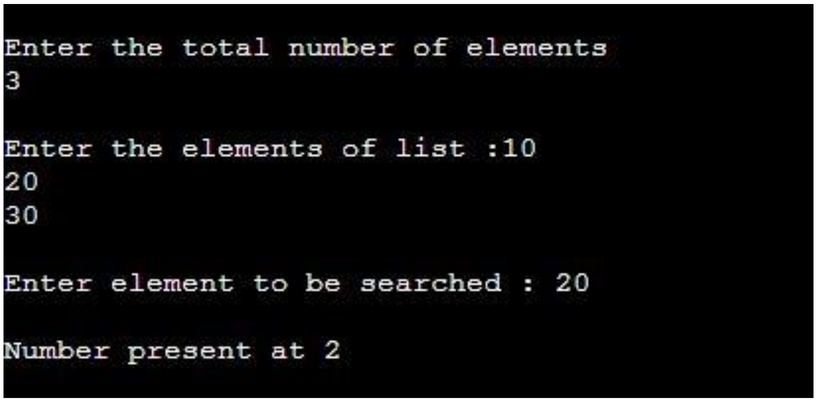
Source code:

```
#include<stdio.h>

#include<stdlib.h>

#define size 10



int binsearch(int[], int, int, int);



int main() {

   int num, i, key, position;

   int low, high, list[size];
```

```
printf("\nEnter the total number of elements");
scanf("%d", &num);

printf("\nEnter the elements of list :");
for (i = 0; i < num; i++) {
   scanf("%d", &list[i]);
}

low = 0;
high = num - 1;

printf("\nEnter element to be searched : ");
```

```
  scanf("%d", &key);

  position = binsearch(list, key, low, high);

  if (position != -1) {
    printf("\nNumber present at %d", (position + 1));
  } else
    printf("\n The number is not present in the list");
  return (0);
}

// Binary search function for binary search
```

```
int binsearch(int a[], int x, int low, int high) {
  int mid;

  if (low > high)
    return -1;

  mid = (low + high) / 2;

  if (x == a[mid]) {
    return (mid);
  } else if (x < a[mid]) {
    binsearch(a, x, low, mid - 1);
  } else {
      binsearch(a, x, mid + 1, high);

  }
```



```
Enter the total number of elements
3

Enter the elements of list :10
20
30

Enter element to be searched : 20

Number present at 2
```

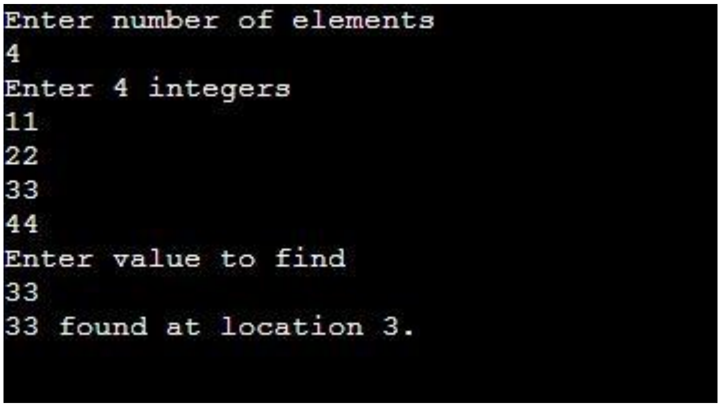
Practical 2:

Source code:

```
#include <stdio.h>

int main()

{

  int c, first, last, middle, n, search, array[100];


  printf("Enter number of elements\n");

  scanf("%d", &n);


  printf("Enter %d integers\n", n);
```

```
for (c = 0; c < n; c++)
  scanf("%d", &array[c]);

printf("Enter value to find\n");
scanf("%d", &search);

first = 0;
last = n - 1;
middle = (first+last)/2;

while (first <= last) {
  if (array[middle] < search)
    first = middle + 1;
  else if (array[middle] == search) {
    printf("%d found at location %d.\n", search, middle+1);
    break;
  }
  else
    last = middle - 1;

  middle = (first + last)/2;
}
if (first > last)
  printf("Not found! %d isn't present in the list.\n", search);
  return 0;

}
```

Output:



```
Enter number of elements
4
Enter 4 integers
11
22
33
44
Enter value to find
33
33 found at location 3.
```