EXPERIMENT NO 2

Implement Binary Search using Divide & Conquer Approach

Program -:

```
#include<stdio.h>

int binary_search(int A[], int key, int len) {

  int low = 0;
  int high = len -1;

  while (low <= high) {
    int mid = low + ((high - low) / 2);

    if (A[mid] == key) {
      return mid;
    }

    if (key < A[mid]) {
      high = mid - 1;
    }
    else {
      low = mid + 1;
    }
  }
  return -1;
}

int main() {
  int a[10];
  for (int i = 0; i <=9; i++){
     scanf("%d",&a[i]);
  }
  printf("enter the key element");
  int key,n;
  scanf("%d",&n);
    key = n;
  int position = binary_search(a, key, 10);
  if (position == -1){
    printf("Not found");
```

```
    return 0;
  }
  printf("Found it at %d", position);
  return 0;
}
```

OUTPUT -:

```
/tmp/BUHW8prEMx.o
1
2
3
4
5
6
7
8
9
10
enter the key element10
Found it at 9
```