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COURSE NAME: DATA STRUCTURES FOR MODERN COMPUTING SYSTEMS

COURSE CODE: CSA0302

Experiment 9: Binary Search

CODE:

```
#include <stdio.h>

int main() {
   int a[100], n, i, key, low, high, mid, found = 0;
   printf("Enter number of elements: ");
   scanf("%d", &n);
   printf("Enter %d sorted elements:\n", n);
   for(i = 0; i < n; i++)
      scanf("%d", &a[i]);
   printf("Enter element to search: ");
   scanf("%d", &key);
   low = 0;
   high = n - 1;
   while(low <= high) {
      mid = (low + high) / 2;
      if(a[mid] == key) {
         found = 1;
         break;
      } else if(a[mid] < key)
         low = mid + 1;
      else
         high = mid - 1;
   }
   if(found)
```

```
        printf("Element found at position %d", mid + 1);
    else
        printf("Element not found");
    return 0;
}
```

OUTPUT:

```
Enter number of elements: 5
Enter 5 sorted elements:
10 20 30 40 50
Enter element to search: 30
Element found at position 3

=== Code Execution Successful ===
```