**PRACTICAL SUBMISSION RECORD- A.Y. 2025-26**

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| **Class: FYMCA Div: B**<br>**Semester: I** | **Course Code: MCA01505**<br>**Course Name: DSA Laboratory** | **Batch: F2** |
| **Name: Sandhya Jaiswal** | **Roll No: 51126** | |
| **CO No: CO507.6** | **Assignment No: 16** | |

**Title:** To study and analyze the performance of different searching algorithms and compare their efficiency.

**Code:**

```
#include <stdio.h>

int linearSearch(int a[],
int n, int key, int *c) {
   for (int i = 0; i < n;
i++) {
      (*c)++;
      if (a[i] == key)
         return i;
   }
   return -1;
}

int binarySearch(int
a[], int n, int key, int
*c) {
   int low = 0, high = n
- 1, mid;
   while (low <= high)
{
      (*c)++;
      mid = (low +
high) / 2;
      if (a[mid] == key)
         return mid;
      else if (a[mid] <
key)
         low = mid + 1;
      else
         high = mid - 1;
   }
   return -1;
}

int main() {
   int a[5] = {10, 20,
30, 40, 50};
   int key = 40;
   int c1 = 0, c2 = 0;
```

```
 linearSearch(a, 5, key,
&c1);
    binarySearch(a, 5,
key, &c2);

    printf("Linear Search
Comparisons: %d\n",
c1);
    printf("Binary
Search Comparisons:
%d\n", c2);

    return 0;
}
```

**Output:**

```
Linear Search Comparisons: 4
Binary Search Comparisons: 2
```