LAB – 7

AIM – Disk Scheduling algorithm (FCFS, SSTF)

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FCFS:

CODE:

```c
#include <stdio.h>

int main() {
    int head, n, s = 0;
    int queue[100], ans[100];
    printf("Enter the value of head:");
    scanf("%d", &head);
    queue[0] = head;
    printf("Enter the number of processes:");
    scanf("%d", &n);
    for (int i = 1; i <= n; i++) {
        int x;
        printf("Enter the value of process:");
        scanf("%d", &x);
        queue[i] = x;
    }
    printf("[");
    for (int i = 0; i <= n; i++) {
        printf("%d, ", queue[i]);
    }
    printf("]\n");
    for (int i = 0; i < n; i++) {
        int j;
        if (queue[i+1] > queue[i]) {
            j = queue[i+1] - queue[i];
        } else {
            i++;
            j = queue[i+1] - queue[i];
        }
        s += j;
    }
    printf("%d\n", s);
    return 0;
}
```

OUTPUT:

```
shruti@shruti-VirtualBox:~/Documents/Disk Scheduling Algorithm$ gcc -o ls fcfs_ds.c
shruti@shruti-VirtualBox:~/Documents/Disk Scheduling Algorithm$ ./ls
Enter the value of head:100
Enter the number of processes:5
Enter the value of process:60
Enter the value of process:190
Enter the value of process:40
Enter the value of process:210
Enter the value of process:130
[100, 60, 190, 40, 210, 130, ]
170
```

SSTF:

CODE

```c
#include <stdio.h>

int main() {
    int head, queue[100], temp[100];
    int s = 0, n, i, x, ans, val, val1;
    printf("Enter the value of head:");
    scanf("%d", &head);
    printf("Enter the number of processes:");
    scanf("%d", &n);
    for (i = 0; i < n; i++) {
        printf("Enter the value of process:");
        scanf("%d", &x);
        queue[i] = x;
    }
    printf("Queue: ");
    for (i = 0; i < n; i++) {
        printf("%d ", queue[i]);
    }
    printf("\n");
    int available[n];
    for (i = 0; i < n; i++) {
        available[i] = queue[i];
    }
    for (i = 0; i < n; i++) {
        int len = n - i;
        for (int j = 0; j < len; j++) {
            if (head > available[j]) {
                ans = head - available[j];
            } else {
                ans = available[j] - head;
            }
            temp[j] = ans;
        }
```

```
        printf("Available: ");
        for (int k = 0; k < len; k++) {
            printf("%d ", available[k]);
        }
        printf("\n");
        printf("Temp: ");
        for (int k = 0; k < len; k++) {
            printf("%d ", temp[k]);
        }
        printf("\n");
        val1 = 0;
        for (int j = 0; j < len; j++) {
            if (temp[j] < temp[val1]) {
                val1 = j;
            }
        }
        val = val1 + 1;
        s = s + temp[val1];
        head = available[val1];
        for (int j = val1; j < len - 1; j++) {
            available[j] = available[j+1];
        }
    }
    printf("Total seek time: %d\n", s);
    return 0;
}
```

OUTPUT:

```
shruti@shruti-VirtualBox:~/Documents/Disk Scheduling Algorithm$ gcc -o ls sstf.c
shruti@shruti-VirtualBox:~/Documents/Disk Scheduling Algorithm$ ./ls
Enter the value of head:100
Enter the number of processes:5
Enter the value of process:60
Enter the value of process:190
Enter the value of process:40
Enter the value of process:210
Enter the value of process:130
Queue: 60 190 40 210 130
Available: 60 190 40 210 130
Temp: 40 90 60 110 30
Available: 60 190 40 210
Temp: 70 60 90 80
Available: 60 40 210
Temp: 130 150 20
Available: 60 40
Temp: 150 170
Available: 40
Temp: 20
Total seek time: 280
```