```
cd "/home/bisham/Documents/" && gcc fcfs.c -o fcfs && "/home/bisham/Documents/"fcfs
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc fcfs.c -o fcfs && "/home/bisham/Documents/"fcfs
Enter the number of processes: 3
Enter the burst time of Process 1: 2
Enter the burst time of Process 2: 4
Enter the burst time of Process 3: 6
Process Burst Time      Waiting Time    Turnaround Time
1       2               0               2
2       4               2               6
3       6               6               12
Average Waiting Time: 2.67
Average Turnaround Time: 6.67
```

```
cd "/home/bisham/Documents/" && gcc mutex.c -o mutex && "/home/bisham/Documents/"mutex
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc mutex.c -o mutex && "/home/bisham/Documents/"mutex
Thread2 trying to acquire lock
Thread2 acquired lock
Thread1 trying to acquire lock
Thread2 reads the value as 1
Local updation by Thread2: 0
Value of shared variable updated by Thread2 is: 0
Thread2 released the lock
Thread1 acquired lock
Thread1 reads the value of shared variable as 0
Local updation by Thread1: 1
Value of shared variable updated by Thread1 is: 1
Thread1 released the lock
Final value of shared is 1
```

```
cd "/home/bisham/Documents/" && gcc rr.c -o rr && "/home/bisham/Documents/"rr
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc rr.c -o rr && "/home/bisham/Documents/"rr
Enter the number of process: 3
Enter the burst time of Process 1: 1
Enter the burst time of Process 2: 3
Enter the burst time of Process 3: 5
Enter quantum time: 2
Process Burst Time      Waiting Time    Turnaround Time
1       1               0               1
2       3               3               6
3       5               4               9
Average Waiting Time: 2.33
Average Turnaround Time: 5.33
```

```
cd "/home/bisham/Documents/" && gcc sjf.c -o sjf && "/home/bisham/Documents/"sjf
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc sjf.c -o sjf && "/home/bisham/Documents/"sjf
Enter the number of processes: 3
Enter the burst times of processes 1 :1
Enter the burst times of processes 2 :3
Enter the burst times of processes 3 :5
Process Burst Time      Waiting Time    Turnaround Time
1       1               0               1
2       3               1               4
3       5               4               9
Average waiting time: 1.67
Average turnaround time: 4.67
```

```
cd "/home/bisham/Documents/" && gcc race.c -o race && "/home/bisham/Documents/"race
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc race.c -o race && "/home/bisham/Documents/"race
Thread1 reads the value of shared variable as 1
Local updation by Thread1: 2
Thread2 reads the value as 1
Local updation by Thread2: 0
Value of shared variable updated by Thread2 is: 0
Value of shared variable updated by Thread1 is: 2
Final value of shared is 2
```

```
cd "/home/bisham/Documents/" && gcc dining.c -o dining && "/home/bisham/Documents/"dining
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc dining.c -o dining && "/home/bisham/Documents/"dining
Philosopher 0 wants to eat
Philosopher 0 tries to pick left chopstick
Philosopher 0 picks the left chopstick
Philosopher 0 tries to pick the right chopstick
Philosopher 0 picks the right chopstick
Philosopher 0 begins to eat
Philosopher 1 wants to eat
Philosopher 1 tries to pick left chopstick
Philosopher 3 wants to eat
Philosopher 3 tries to pick left chopstick
Philosopher 3 picks the left chopstick
Philosopher 3 tries to pick the right chopstick
Philosopher 3 picks the right chopstick
Philosopher 3 begins to eat
Philosopher 2 wants to eat
Philosopher 2 tries to pick left chopstick
Philosopher 2 picks the left chopstick
Philosopher 2 tries to pick the right chopstick
Philosopher 4 wants to eat
Philosopher 4 tries to pick left chopstick
Philosopher 0 has finished eating
Philosopher 0 leaves the right chopstick
Philosopher 0 leaves the left chopstick
Philosopher 1 picks the left chopstick
Philosopher 1 tries to pick the right chopstick
Philosopher 3 has finished eating
Philosopher 3 leaves the right chopstick
Philosopher 4 picks the left chopstick
Philosopher 4 tries to pick the right chopstick
Philosopher 4 picks the right chopstick
Philosopher 4 begins to eat
Philosopher 3 leaves the left chopstick
Philosopher 2 picks the right chopstick
Philosopher 2 begins to eat
Philosopher 4 has finished eating
Philosopher 4 leaves the right chopstick
Philosopher 4 leaves the left chopstick
Philosopher 2 has finished eating
Philosopher 2 leaves the right chopstick
Philosopher 2 leaves the left chopstick
Philosopher 1 picks the right chopstick
Philosopher 1 begins to eat
Philosopher 1 has finished eating
Philosopher 1 leaves the right chopstick
Philosopher 1 leaves the left chopstick
bisham@bisham-Swift-SF314-512:~/Documents$
```

```
cd "/home/bisham/Documents/" && gcc binary.c -o binary && "/home/bisham/Documents/"binary
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc binary.c -o binary && "/home/bisham/Documents/"binar
Thread1 reads the value as 5
Local updation by Thread1: 6
Value of shared variable updated by Thread1 is: 6
Thread2 reads the value as 6
Local updation by Thread2: 5
Value of shared variable updated by Thread2 is: 5
Final value of shared is 5
```

```
cd "/home/bisham/Documents/" && gcc deadlock.c -o deadlock && "/home/bisham/Documents/"deadlock
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc deadlock.c -o deadlock && "/home/bisham/Documents/"deadlock
Thread ONE acquired first_mutex
Thread TWO acquired second_mutex
```

```
cd "/home/bisham/Documents/" && gcc fcfs_disk.c -o fcfs_disk && "/home/bisham/Documents/"fcfs_disk
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc fcfs_disk.c -o fcfs_disk && "/home/bisham/Documents/"fcfs_disk
Enter the size of disk queue: 3
Enter the disk queue: 2
4
6
Enter the initial head position: 1
2 -> 4 -> 6 ->
Total seek count = 5
```

```
cd "/home/bisham/Documents/" && gcc sstf_disk.c -o sstf_disk && "/home/bisham/Documents/"sstf_disk
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc sstf_disk.c -o sstf_disk && "/home/bisham/Documents/"sstf_disk
Enter the size of disk queue: 4
Enter the disk queue: 1
3
5
7
Enter the initial head position: 3
3 -> 1 -> 5 -> 7 ->
Total seek count = 8
```

```
cd "/home/bisham/Documents/" && gcc cscan.c -o cscan && "/home/bisham/Documents/"cscan
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc cscan.c -o cscan && "/home/bisham/Documents/"cscan
Enter the size of disk queue: 3
Enter the disk queue: 1
3
5
Enter last position of queue: 5
Enter the initial head position: 1
Enter the direction (0 for left and 1 for right): 1
3 -> 5 -> 5 -> 0 ->
Total seek count = 9
```

```
cd "/home/bisham/Documents/" && gcc clool.c -o clool && "/home/bisham/Documents/"clool
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc clool.c -o clool && "/home/bisham/Documents/"clool
Enter the size of disk queue: 3
Enter the disk queue: 2
4
6
Enter the initial head position: 2
Enter the direction (0 for left and 1 for right): 1
4 -> 6 ->
Total seek count = 4
```

```
cd "/home/bisham/Documents/" && gcc producer.c -o producer && "/home/bisham/Documents/"producer
bisham@bisham-Swift-SF314-512:~$ cd "/home/bisham/Documents/" && gcc producer.c -o producer && "/home/bisham/Documents/"producer
1. Press 1 for Producer
2. Press 2 for Consumer
3. Press 3 for Exit
Enter your choice:1

Producer produces item 1
Enter your choice:2

Consumer consumes item 1
Enter your choice:3
bisham@bisham-Swift-SF314-512:~/Documents$
```