FCFS Sample Run:
**************************************
Time unit: 0
CPU ID: 1
Process id Running: 0
CPU ID : 2
Process id Running: NONE
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 0
State: RUNNING
Process ID: 1
Program Counter: 0
State: NEW
Process ID: 2
Program Counter: 0
State: NEW
Process ID: 3
Program Counter: 0

State: NEW

**************************************
Time unit: 1
CPU ID: 1
Process id Running: 0
CPU ID: 2
Process id Running: NONE
<b>G</b>
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 1
State: RUNNING
Process ID: 1
Program Counter: 0
Trogram counter. o
State: NEW
State: NEW
State: NEW Process ID: 2
State: NEW  Process ID: 2  Program Counter: 0
State: NEW  Process ID: 2  Program Counter: 0

State: NEW

**************************************
Time unit: 2
CPU ID: 1
Process id Running: 0
CPU ID : 2
Process id Running: 1
Ready Queue: [3]
IO: []
======================================
Process ID: 0
Program Counter: 2
State: RUNNING
State: RUNNING
State: RUNNING  Process ID: 1
Process ID: 1
Process ID: 1 Program Counter: 0
Process ID: 1 Program Counter: 0 State: RUNNING
Process ID: 1 Program Counter: 0 State: RUNNING Process ID: 2
Process ID: 1 Program Counter: 0 State: RUNNING  Process ID: 2 Program Counter: 0 State: NEW
Process ID: 1 Program Counter: 0 State: RUNNING  Process ID: 2 Program Counter: 0

State: READY

**************************************
Time unit: 3
CPU ID: 1
Process id Running: 3
CPU ID: 2
Process id Running: 1
Ready Queue: []
IO: [0]
======================================
D 10.0
Process ID: 0
Process ID: 0 Program Counter: 2
Program Counter: 2 State: WAITING
Program Counter: 2
Program Counter: 2 State: WAITING
Program Counter: 2 State: WAITING Process ID: 1
Program Counter: 2 State: WAITING  Process ID: 1 Program Counter: 1 State: RUNNING
Program Counter: 2 State: WAITING  Process ID: 1 Program Counter: 1 State: RUNNING  Process ID: 2
Program Counter: 2 State: WAITING  Process ID: 1 Program Counter: 1 State: RUNNING  Process ID: 2 Program Counter: 0
Program Counter: 2 State: WAITING  Process ID: 1 Program Counter: 1 State: RUNNING  Process ID: 2
Program Counter: 2 State: WAITING  Process ID: 1 Program Counter: 1 State: RUNNING  Process ID: 2 Program Counter: 0

State: RUNNING

**************************************
Time unit: 4
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: 1
Ready Queue: []
IO: [0, 3]
======================================
Process ID: 0
Program Counter: 2
State: WAITING
Process ID: 1
Program Counter: 2
State: RUNNING
Process ID: 2
Program Counter: 0
State: NEW
Process ID: 3
Program Counter: 0

**************************************
Time unit: 5
CPU ID: 1
Process id Running: 0
CDLLID . 3
CPU ID: 2
Process id Running: 1
Ready Queue: []
IO: [3]
======================================
Process ID: 0
Program Counter: 3
Program Counter: 3 State: RUNNING
State: RUNNING
State: RUNNING  Process ID: 1
State: RUNNING  Process ID: 1  Program Counter: 3
State: RUNNING  Process ID: 1  Program Counter: 3
State: RUNNING  Process ID: 1  Program Counter: 3  State: RUNNING
State: RUNNING  Process ID: 1  Program Counter: 3  State: RUNNING  Process ID: 2
State: RUNNING  Process ID: 1  Program Counter: 3  State: RUNNING  Process ID: 2  Program Counter: 0
State: RUNNING  Process ID: 1  Program Counter: 3  State: RUNNING  Process ID: 2  Program Counter: 0

**************************************
Time unit: 6
CPU ID: 1
Process id Running: 0
CDLLID . 3
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [3]
======================================
Process ID: 0
Program Counter: 4
Program Counter: 4 State: RUNNING
State: RUNNING
State: RUNNING  Process ID: 1
State: RUNNING  Process ID: 1  Program Counter: 3
State: RUNNING  Process ID: 1  Program Counter: 3
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 0
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 0

**************************************
Time unit: 7
CPU ID: 1
Process id Running: 0
CPU ID: 2
Process id Running: 3
Ready Queue: []
IO: []
======================================
Process ID: 0
Flocess ID. 0
Program Counter: 5
Program Counter: 5
Program Counter: 5
Program Counter: 5 State: RUNNING
Program Counter: 5 State: RUNNING Process ID: 1
Program Counter: 5 State: RUNNING  Process ID: 1 Program Counter: 3
Program Counter: 5 State: RUNNING  Process ID: 1 Program Counter: 3
Program Counter: 5 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED
Program Counter: 5 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 5 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 0

State: RUNNING

**************************************
Time unit: 8
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: 3
Ready Queue: []
IO: [0]
io. [o]
======================================
Process ID: 0
Program Counter: 5
Program Counter: 5 State: WAITING
State: WAITING
State: WAITING  Process ID: 1
State: WAITING  Process ID: 1  Program Counter: 3
State: WAITING  Process ID: 1  Program Counter: 3
State: WAITING  Process ID: 1  Program Counter: 3  State: TERMINATED
State: WAITING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2
State: WAITING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 0  State: NEW
State: WAITING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 0

State: RUNNING

**************************************
Time unit: 9
CPU ID: 1
Process id Running: NONE
CPU ID : 2
Process id Running: NONE
Ready Queue: []
IO: [0, 3]
======================================
Process ID: 0
Program Counter: 5
State: WAITING
Process ID: 1
Program Counter: 3 State: TERMINATED
Process ID: 2
Program Counter: 0
State: NEW
Process ID: 3
Program Counter: 2
rrogram counter. 2

**************************************
Time unit: 10
CPU ID: 1
Process id Running: 0
CPU ID: 2
Process id Running: 2
Ready Queue: []
IO: [3]
======================================
Process ID: 0
Program Counter: 6
Program Counter: 6 State: RUNNING
State: RUNNING
State: RUNNING  Process ID: 1
State: RUNNING  Process ID: 1  Program Counter: 3
State: RUNNING  Process ID: 1  Program Counter: 3
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 0
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 0

**************************************
Time unit: 11
CPU ID: 1
Process id Running: 0
CPU ID: 2
Process id Running: 2
Ready Queue: []
IO: [3]
======================================
Process ID: 0
Program Counter: 7
State: RUNNING
Process ID: 1
Process ID: 1 Program Counter: 3
Program Counter: 3
Program Counter: 3
Program Counter: 3 State: TERMINATED
Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 1
Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 1

**************************************
Time unit: 12
CPU ID: 1
Process id Running: 0
CPU ID: 2
Process id Running: 3
Poody Ougust []
Ready Queue: []
IO: [2]
======================================
Process ID: 0
Program Counter: 8
State: RUNNING
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 1
State: WAITING
Process ID: 3
Program Counter: 3

State: RUNNING

**************************************
Time unit: 13
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [2, 0, 3]
======================================
Process ID: 0
Program Counter: 8
State: WAITING
State: Withing
State. Willing
Process ID: 1
Process ID: 1
Process ID: 1 Program Counter: 3
Process ID: 1 Program Counter: 3
Process ID: 1 Program Counter: 3 State: TERMINATED
Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2
Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 1 State: WAITING
Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 1

*************** System Informations ************
Time unit: 14
CPU ID: 1
Process id Running: 2
CDLUID : 2
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [0, 3]
======================================
D 1D 0
Process ID: 0
Process ID: 0 Program Counter: 8
Program Counter: 8 State: WAITING
Program Counter: 8
Program Counter: 8 State: WAITING
Program Counter: 8 State: WAITING Process ID: 1
Program Counter: 8  State: WAITING  Process ID: 1  Program Counter: 3  State: TERMINATED
Program Counter: 8 State: WAITING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 8 State: WAITING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 2
Program Counter: 8 State: WAITING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 8 State: WAITING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 2

**************************************
Time unit: 15
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [0, 3, 2]
======================================
Process ID: 0
Program Counter: 8
State: WAITING
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 2
State: WAITING
Process ID: 3
Program Counter: 3

**************************************
Time unit: 16
CPU ID: 1
Process id Running: 0
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [3, 2]
======================================
Process ID: 0
Process ID: 0 Program Counter: 9
Program Counter: 9 State: RUNNING
Program Counter: 9
Program Counter: 9 State: RUNNING
Program Counter: 9 State: RUNNING Process ID: 1
Program Counter: 9 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED
Program Counter: 9 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 9 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 2
Program Counter: 9 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 9 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 2

**************************************
Time unit: 17
CPU ID: 1
Process id Running: 0
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [3, 2]
======================================
Process ID: 0
Program Counter: 10
State: RUNNING
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 2
State: WAITING
Process ID: 3
Program Counter: 3

Time unit: 18
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [2]
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 2
State: WAITING
Process ID: 3
Program Counter: 3

**************************************
Time unit: 19
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [2]
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Process ID: 1 Program Counter: 3
Program Counter: 3
Program Counter: 3
Program Counter: 3 State: TERMINATED
Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 2
Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 2

**************************************
Time unit: 20
CPU ID: 1
Process id Running: 2
CRILID . 3
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: []
Para constant
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 3
State: RUNNING
Process ID: 3
Program Counter: 3

**************************************
Time unit: 21
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [2]
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 3
State: WAITING
Process ID: 3
Program Counter: 3

**************************************
Time unit: 22
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: NONE
Trocess to Northling. NONE
Ready Queue: []
IO: [2]
======================================
Process ID: 0
Program Counter: 10
<u> </u>
State: TERMINATED
State: TERMINATED
State: TERMINATED  Process ID: 1
State: TERMINATED  Process ID: 1  Program Counter: 3
State: TERMINATED  Process ID: 1  Program Counter: 3
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 3
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 3

**************** System Informations ************
Time unit: 23
CPU ID: 1
Process id Running: 2
CDLUID : 2
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 4
State: RUNNING
Process ID: 3
Program Counter: 3

************** System Informations ************
Time unit: 24
CPU ID: 1
Process id Running: 2
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Process ID: 1 Program Counter: 3
Program Counter: 3 State: TERMINATED
Program Counter: 3
Program Counter: 3 State: TERMINATED
Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 5 State: RUNNING
Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 5

**************************************
Time unit: 25
CPU ID: 1
Process id Running: 2
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 10
Program Counter: 10 State: TERMINATED
State: TERMINATED
State: TERMINATED  Process ID: 1
State: TERMINATED  Process ID: 1  Program Counter: 3
State: TERMINATED  Process ID: 1  Program Counter: 3
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 6
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 6

**************************************
Time unit: 26
CPU ID: 1
Process id Running: 2
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Process ID: 1 Program Counter: 3
Program Counter: 3
Program Counter: 3 State: TERMINATED
Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 7

Process 0: -----Turnaround Time: 17 Wait Time: 0 Response Time: 0 Process 1: Turnaround Time: 3 Wait Time: 0 Response Time: 0 Process 2: Turnaround Time: 16 Wait Time: 0 Response Time: 0 Process 3: Turnaround Time: 15 Wait Time: 1 Response Time: 1

Average wait time: 0.25

<u>SJF Sample Run:</u>
**************************************
Time unit: 0
CPU ID : 1
Process id Running: 0
CPU ID : 2
Process id Running: NONE
Trocess to Northling. North
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 0
State: RUNNING
Process ID: 1
Program Counter: 0
State: NEW
Process ID: 2
Program Counter: 0
State: NEW
Process ID: 3
Program Counter: 0

State: NEW

**************************************
Time unit: 1
CPU ID: 1
Process id Running: 0
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: []
======================================
Process ID: 0
110003318.0
Program Counter: 1
Program Counter: 1
Program Counter: 1
Program Counter: 1 State: RUNNING
Program Counter: 1 State: RUNNING Process ID: 1
Program Counter: 1 State: RUNNING  Process ID: 1 Program Counter: 0 State: NEW
Program Counter: 1 State: RUNNING  Process ID: 1 Program Counter: 0
Program Counter: 1 State: RUNNING  Process ID: 1 Program Counter: 0 State: NEW  Process ID: 2 Program Counter: 0
Program Counter: 1 State: RUNNING  Process ID: 1 Program Counter: 0 State: NEW  Process ID: 2
Program Counter: 1 State: RUNNING  Process ID: 1 Program Counter: 0 State: NEW  Process ID: 2 Program Counter: 0

State: NEW

**************************************
Time unit: 2
CPU ID: 1
Process id Running: 0
CPU ID : 2
Process id Running: 1
Ready Queue: [3]
IO: []
======================================
Process ID: 0
Program Counter: 2
State: RUNNING
State: RUNNING
State: RUNNING  Process ID: 1
Process ID: 1
Process ID: 1 Program Counter: 0
Process ID: 1 Program Counter: 0 State: RUNNING
Process ID: 1 Program Counter: 0 State: RUNNING Process ID: 2
Process ID: 1 Program Counter: 0 State: RUNNING  Process ID: 2 Program Counter: 0 State: NEW
Process ID: 1 Program Counter: 0 State: RUNNING  Process ID: 2 Program Counter: 0

State: READY

**************************************
Time unit: 3
CPU ID: 1
Process id Running: 3
CPU ID: 2
Process id Running: 1
Ready Queue: []
IO: [0]
======================================
D ID. 0
Process ID: 0
Process ID: 0  Program Counter: 2
Program Counter: 2 State: WAITING
Program Counter: 2
Program Counter: 2 State: WAITING
Program Counter: 2 State: WAITING Process ID: 1
Program Counter: 2 State: WAITING  Process ID: 1 Program Counter: 1 State: RUNNING
Program Counter: 2 State: WAITING  Process ID: 1 Program Counter: 1 State: RUNNING  Process ID: 2
Program Counter: 2 State: WAITING  Process ID: 1 Program Counter: 1 State: RUNNING  Process ID: 2 Program Counter: 0
Program Counter: 2 State: WAITING  Process ID: 1 Program Counter: 1 State: RUNNING  Process ID: 2
Program Counter: 2 State: WAITING  Process ID: 1 Program Counter: 1 State: RUNNING  Process ID: 2 Program Counter: 0

State: RUNNING

**************************************
Time unit: 4
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: 1
Ready Queue: []
IO: [0, 3]
10. [0, 3]
======================================
Process ID: 0
Program Counter: 2
State: WAITING
Process ID: 1
Program Counter: 2
State: RUNNING
Process ID: 2
Program Counter: 0
State: NEW
Dun 2000 ID. 2
Process ID: 3
Program Counter: 0

**************************************
Time unit: 5
CPU ID: 1
Process id Running: 0
CDLLID . 3
CPU ID: 2
Process id Running: 1
Ready Queue: []
IO: [3]
======================================
Process ID: 0
Program Counter: 3
Program Counter: 3 State: RUNNING
State: RUNNING
State: RUNNING  Process ID: 1
State: RUNNING  Process ID: 1  Program Counter: 3
State: RUNNING  Process ID: 1  Program Counter: 3
State: RUNNING  Process ID: 1  Program Counter: 3  State: RUNNING
State: RUNNING  Process ID: 1  Program Counter: 3  State: RUNNING  Process ID: 2
State: RUNNING  Process ID: 1  Program Counter: 3  State: RUNNING  Process ID: 2  Program Counter: 0
State: RUNNING  Process ID: 1  Program Counter: 3  State: RUNNING  Process ID: 2  Program Counter: 0

**************************************
Time unit: 6
CPU ID: 1
Process id Running: 0
CDLLID . 3
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [3]
======================================
Process ID: 0
Program Counter: 4
Program Counter: 4 State: RUNNING
State: RUNNING
State: RUNNING  Process ID: 1
State: RUNNING  Process ID: 1  Program Counter: 3
State: RUNNING  Process ID: 1  Program Counter: 3
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 0
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 0

**************************************
Time unit: 7
CPU ID: 1
Process id Running: 0
CPU ID: 2
Process id Running: 3
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 5
State: RUNNING
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Process ID: 2 Program Counter: 0
Program Counter: 0

State: RUNNING

**************************************
Time unit: 8
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: 3
Ready Queue: []
IO: [0]
io. [o]
======================================
Process ID: 0
Program Counter: 5
Program Counter: 5 State: WAITING
State: WAITING
State: WAITING  Process ID: 1
State: WAITING  Process ID: 1  Program Counter: 3
State: WAITING  Process ID: 1  Program Counter: 3
State: WAITING  Process ID: 1  Program Counter: 3  State: TERMINATED
State: WAITING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2
State: WAITING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 0  State: NEW
State: WAITING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 0

State: RUNNING

**************************************
Time unit: 9
CPU ID: 1
Process id Running: NONE
CPU ID : 2
Process id Running: NONE
Ready Queue: []
IO: [0, 3]
======================================
Process ID: 0
Program Counter: 5
State: WAITING
Process ID: 1
Program Counter: 3 State: TERMINATED
Process ID: 2
Program Counter: 0
State: NEW
Process ID: 3
Program Counter: 2
rrogram counter. 2

**************************************
Time unit: 10
CPU ID: 1
Process id Running: 2
CPU ID: 2
Process id Running: 0
Ready Queue: []
IO: [3]
======================================
Process ID: 0
Program Counter: 6
State: RUNNING
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 0
State: RUNNING
Process ID: 3
Program Counter: 2

**************************************
Time unit: 11
CPU ID: 1
Process id Running: 2
CPU ID: 2
Process id Running: 0
Ready Queue: []
IO: [3]
======================================
Process ID: 0
Program Counter: 7
State: RUNNING
Process ID: 1
Program Counter: 3
State: TERMINATED
State: TERMINATED
State: TERMINATED  Process ID: 2
Process ID: 2
Process ID: 2 Program Counter: 1 State: RUNNING
Process ID: 2 Program Counter: 1

**************************************
Time unit: 12
CPU ID: 1
Process id Running: 3
CPU ID: 2
Process id Running: 0
Trocess to Northing. O
Ready Queue: []
IO: [2]
======================================
Process ID: 0
Program Counter: 8
State: RUNNING
State: RUNNING
State: RUNNING  Process ID: 1
State: RUNNING  Process ID: 1  Program Counter: 3
State: RUNNING  Process ID: 1  Program Counter: 3
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 1
State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 1

State: RUNNING

****************** System Informations *************
Time unit: 13
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: 0
Ready Queue: []
IO: [2, 3]
======================================
Process ID: 0
110Ce33 ID. 0
Program Counter: 9
Program Counter: 9 State: RUNNING
Program Counter: 9
Program Counter: 9 State: RUNNING
Program Counter: 9 State: RUNNING Process ID: 1
Program Counter: 9 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED
Program Counter: 9 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 9 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 1
Program Counter: 9 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 9 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 1

**************************************
Time unit: 14
CPU ID: 1
Process id Running: 2
CPU ID: 2
Process id Running: 0
Ready Queue: []
IO: [3]
======================================
Dynamic ID: 0
Process ID: 0
Process ID: 0  Program Counter: 10
Program Counter: 10
Program Counter: 10
Program Counter: 10 State: RUNNING
Program Counter: 10 State: RUNNING Process ID: 1
Program Counter: 10 State: RUNNING  Process ID: 1  Program Counter: 3  State: TERMINATED
Program Counter: 10 State: RUNNING  Process ID: 1 Program Counter: 3
Program Counter: 10 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 2
Program Counter: 10 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 10 State: RUNNING  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 2

**************************************
Time unit: 15
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [3, 2]
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 2
State: WAITING
Process ID: 3
Program Counter: 3

**************************************
Time unit: 16
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [2]
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 2
State: WAITING
Process ID: 3

**************************************
Time unit: 17
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [2]
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 2
State: WAITING
State: WAITING
State: WAITING  Process ID: 3

**************************************
Time unit: 18
CPU ID: 1
Process id Running: 2
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Dynamics ID: 1
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 3
State: RUNNING
Process ID: 3

**************************************
Time unit: 19
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [2]
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
State: TERMINATED
Process ID: 1
Process ID: 1
Process ID: 1 Program Counter: 3
Process ID: 1 Program Counter: 3
Process ID: 1 Program Counter: 3 State: TERMINATED
Process ID: 1 Program Counter: 3 State: TERMINATED Process ID: 2
Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 3
Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 3

**************************************
Time unit: 20
CPU ID: 1
Process id Running: NONE
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: [2]
_
======================================
Process ID: 0
Program Counter: 10
Program Counter: 10 State: TERMINATED
State: TERMINATED
State: TERMINATED  Process ID: 1
State: TERMINATED  Process ID: 1  Program Counter: 3
State: TERMINATED  Process ID: 1
State: TERMINATED  Process ID: 1  Program Counter: 3
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 3
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 3

**************************************
Time unit: 21
CPU ID: 1
Process id Running: 2
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
State: TERMINATED
State: TERMINATED  Process ID: 1
State: TERMINATED  Process ID: 1  Program Counter: 3
State: TERMINATED  Process ID: 1  Program Counter: 3
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 4
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 4

**************************************
Time unit: 22
CPU ID: 1
Process id Running: 2
CRILID . 3
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 5
State: RUNNING
Process ID: 3
Program Counter: 3

**************************************
Time unit: 23
CPU ID: 1
Process id Running: 2
CPU ID: 2
Process id Running: NONE
Trocess to Northling. NONE
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
State: TERMINATED
State: TERMINATED  Process ID: 1
State: TERMINATED  Process ID: 1  Program Counter: 3
State: TERMINATED  Process ID: 1  Program Counter: 3
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 6
State: TERMINATED  Process ID: 1  Program Counter: 3  State: TERMINATED  Process ID: 2  Program Counter: 6

**************************************
Time unit: 24
CPU ID: 1
Process id Running: 2
CPU ID: 2
Process id Running: NONE
Ready Queue: []
IO: []
_
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Durance ID: 4
Process ID: 1
Program Counter: 3
Program Counter: 3
Program Counter: 3 State: TERMINATED
Program Counter: 3 State: TERMINATED  Process ID: 2
Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 7
Program Counter: 3 State: TERMINATED  Process ID: 2 Program Counter: 7

CPU 1 utilization: 64.0% CPU 2 utilization: 44.0% Process 0: -----Turnaround Time: 14 Wait Time: 0 Response Time: 0 Process 1: Turnaround Time: 3 Wait Time: 0 Response Time: 0 Process 2: Turnaround Time: 14 Wait Time: 0 Response Time: 0 Process 3: Turnaround Time: 13 Wait Time: 1 Response Time: 1

Average wait time: 0.25

Round Robin Sample Run:
************* System Informations ***********
Time unit: 0
CPU ID: 1
Process id Running: 0
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 0
State: RUNNING
Process ID: 1
Program Counter: 0
State: NEW
Process ID: 2
Program Counter: 0
State: NEW
**************************************
Time unit: 1
CPU ID: 1
Process id Running: 0

Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 1
State: RUNNING
Process ID: 1
Program Counter: 0
State: NEW
Process ID: 2
Program Counter: 0
State: NEW
************** System Informations ************
Time unit: 2
CPU ID: 1
Process id Running: 0
Ready Queue: [1]
IO: []
======================================
Process ID: 0
Program Counter: 2

State: RUNNING

Process ID: 1
Program Counter: 0
State: READY
Process ID: 2
Program Counter: 0
State: NEW
**************************************
Time unit: 3
CPU ID: 1
Process id Running: 0
Ready Queue: [1]
IO: []
======================================
Process ID: 0
Program Counter: 3
State: RUNNING
Process ID: 1
Program Counter: 0
State: READY
Process ID: 2

Program Counter: 0

State: NEW
*************** System Informations ************
Time unit: 4
CPU ID: 1
Process id Running: 1
Ready Queue: [0]
IO: []
======================================
Process ID: 0
Program Counter: 4
State: READY
Process ID: 1
Program Counter: 0
State: RUNNING
Process ID: 2
Program Counter: 0
State: NEW
*************** System Informations ************
Time unit: 5
CPU ID: 1

Process id Running: 1

Ready Queue: [0]
IO: []
======================================
Process ID: 0
Program Counter: 4
State: READY
Process ID: 1
Program Counter: 1
State: RUNNING
Process ID: 2
Program Counter: 0
State: NEW
****************** System Informations **************
Time unit: 6
CPU ID: 1
Process id Running: 0
Ready Queue: [1]
IO: []
======================================
Process ID: 0

Program Counter: 4

State: RUNNING
Process ID: 1
Program Counter: 2
State: READY
Process ID: 2
Program Counter: 0
State: NEW
**************** System Informations *************
Time unit: 7
CPU ID : 1
Process id Running: 0
Ready Queue: [1]
IO: []
======================================
Process ID: 0
Program Counter: 5
State: RUNNING
Process ID: 1
Program Counter: 2
State: READY

Process ID: 2

Program Counter: 0
State: NEW
****************
Time unit: 8
CPU ID : 1
Process id Running: 1
Ready Queue: []
IO: [0]
<b>D</b>
Process ID: 0
Program Counter: 5
State: WAITING
Process ID: 1
Program Counter: 2
State: RUNNING
Process ID: 2
Program Counter: 0
State: NEW
**************************************
Time unit: 9

CPU ID:1

Process id Running: 1
Ready Queue: []
IO: [0]
======================================
Process ID: 0
Program Counter: 5
State: WAITING
Process ID: 1
Program Counter: 3
State: RUNNING
Process ID: 2
Program Counter: 0
State: NEW
**************************************
Time unit: 10
CPU ID : 1
Process id Running: 0
Ready Queue: [2]
IO: []
======================================

Process ID: 0

Program Counter: 6
State: RUNNING
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 0
State: READY
**************************************
Time unit: 11
CPU ID: 1
Process id Running: 0
Ready Queue: [2]
IO: []
======================================
Process ID: 0
Program Counter: 7
State: RUNNING
Process ID: 1
Program Counter: 3
State: TERMINATED

Process ID: 2
Program Counter: 0
State: READY
**************************************
Time unit: 12
CPU ID: 1
Process id Running: 2
Ready Queue: [0]
IO: []
======================================
Process ID: 0
Program Counter: 8
State: READY
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 0
State: RUNNING
***********
************** System Informations ************

Time unit: 13

CPU ID: 1
Process id Running: 2
Ready Queue: [0]
IO: []
======================================
Process ID: 0
Program Counter: 8
State: READY
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 1
State: RUNNING
**************************************
Time unit: 14
CPU ID: 1
Process id Running: 0
Ready Queue: []
IO: [2]
======================================

Process ID: 0
Program Counter: 8
State: RUNNING
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 1
State: WAITING
**************************************
Time unit: 15
CPU ID: 1
Process id Running: NONE
Ready Queue: []
IO: [2, 0]
======================================
Process ID: 0
Program Counter: 8
State: WAITING
Process ID: 1
Program Counter: 3
State: TERMINATED

Process ID: 2
Program Counter: 1
State: WAITING
**************************************
Time unit: 16
CPU ID : 1
Process id Running: 2
Ready Queue: []
IO: [0]
======================================
Process ID: 0
Program Counter: 8
State: WAITING
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 2
State: RUNNING
***************** System Informations ************

Time unit: 17

CPU ID: 1
Process id Running: NONE
Ready Queue: []
IO: [0, 2]
======================================
Process ID: 0
Program Counter: 8
State: WAITING
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 2
State: WAITING
**************************************
Time unit: 18
CPU ID: 1
Process id Running: 0
Ready Queue: []
IO: [2]

======================================
Process ID: 0
Program Counter: 9
State: RUNNING
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 2
State: WAITING
**************** System Informations *************
Time unit: 19
CPU ID : 1
Process id Running: 0
Dandy Overver []
Ready Queue: []
IO: [2]
======================================
Process ID: 0
Program Counter: 10
State: RUNNING
Process ID: 1

Program Counter: 3

State: TERMINATED
Process ID: 2
Program Counter: 2
State: WAITING
**************************************
Time unit: 20
CPU ID: 1
Process id Running: 2
Ready Queue: []
IO: []
_
======================================
Process ID: 0
Process ID: 0 Program Counter: 10
Process ID: 0
Process ID: 0 Program Counter: 10
Process ID: 0 Program Counter: 10 State: TERMINATED
Process ID: 0 Program Counter: 10 State: TERMINATED Process ID: 1
Process ID: 0 Program Counter: 10 State: TERMINATED  Process ID: 1 Program Counter: 3
Process ID: 0 Program Counter: 10 State: TERMINATED  Process ID: 1 Program Counter: 3
Process ID: 0 Program Counter: 10 State: TERMINATED  Process ID: 1 Program Counter: 3 State: TERMINATED
Process ID: 0 Program Counter: 10 State: TERMINATED  Process ID: 1 Program Counter: 3 State: TERMINATED  Process ID: 2

Time unit: 21
CPU ID: 1
Process id Running: NONE
Ready Queue: []
IO: [2]
10. [2]
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 3
State: WAITING
**************************************
Time unit: 22
CPU ID: 1
Process id Running: NONE
Ready Queue: []
IO: [2]

======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 3
State: WAITING
**************************************
Time unit: 23
CPU ID: 1
Process id Running: 2
Ready Queue: []
IO: []
<b>D</b>
Process ID: 0
Program Counter: 10 State: TERMINATED
State. TENIVITIVATED

Process ID: 1

Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 4
State: RUNNING
**************************************
Time unit: 24
CPU ID: 1
Process id Running: 2
Ready Queue: []
IO: []
======================================
======================================
Process ID: 0
Process ID: 0 Program Counter: 10
Process ID: 0 Program Counter: 10
Process ID: 0 Program Counter: 10 State: TERMINATED
Process ID: 0 Program Counter: 10 State: TERMINATED  Process ID: 1
Process ID: 0 Program Counter: 10 State: TERMINATED  Process ID: 1 Program Counter: 3
Process ID: 0 Program Counter: 10 State: TERMINATED  Process ID: 1 Program Counter: 3

State: RUNNING

**************************************
Time unit: 25
CPU ID: 1
Process id Running: 2
Ready Queue: []
IO: []
======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 6
State: RUNNING
**************************************
Time unit: 26
CPU ID: 1
Process id Running: 2
Ready Queue: []

======================================
Process ID: 0
Program Counter: 10
State: TERMINATED
Process ID: 1
Program Counter: 3
State: TERMINATED
Process ID: 2
Program Counter: 7
State: RUNNING
CPU 1 utilization: 85.18518518519%
Process 0:
Turnaround Time: 19
Wait Time : 4
Response Time: 0
Process 1:
<del></del>
Turnaround Time: 7
Wait Time : 4
Response Time: 2

Process 2:

-----

Turnaround Time: 16

Wait Time: 2

Response Time: 2

Average wait time: 3.3333333333333333