2+3.

1. FCFS:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 1 | E | E | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  | H | E | E | E | E | E | E | E |  |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  | H | H | H | H | H | E | E |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  | H | H | H | H | H | H | E | E | E | E | E |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  | H | H | H | H | H | H | H | H | E | E | E |

1. LIFO

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 1 | E | E | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  | H | E | E | E | E | E | E | E |  |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  | H | H | H | H | H | H | H | H | H | H | H | H | H | E | E |
| 4 |  |  |  |  |  |  | H | H | H | H | H | H | H | E | E | E | E | E |  |  |
| 5 |  |  |  |  |  |  |  |  |  | H | E | E | E |  |  |  |  |  |  |  |

1. Round robin quantum=1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 1 | E | E | H | H | H | H | H | H | H | H | H | H | E |  |  |  |  |  |  |  |
| 2 |  |  | E | E | E | H | H | H | H | H | H | H | H | E | E | E | E |  |  |  |
| 3 |  |  |  |  |  | E | H | H | H | H | H | H | H | H | H | H | H | E |  |  |
| 4 |  |  |  |  |  |  | E | E | E | H | H | H | H | H | H | H | H | H | E | E |
| 5 |  |  |  |  |  |  |  |  |  | E | E | E |  |  |  |  |  |  |  |  |

1. SJF

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 1 | E | E | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  | H | E | E | E | E | E | E | E |  |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  | H | H | H | H | H | E | E |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  | H | H | H | E | E | E |  |  |  |  |  |
| 5 |  |  |  |  |  |  | H | H | H | H | H | H | H | H | H | E | E | E | E | E |

1. SRT

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 1 | E | E | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  | H | E | E | H | H | H | H | H | H | H | H | H | H | E | E | E | E | E |
| 3 |  |  |  |  |  | E | E |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  | H | E | E | H | H | H | E | E | E |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  | E | E | E |  |  |  |  |  |  |  |  |

1. HRRN: RR=(W+S)/S

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RR |  | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|  | 1 | E | E | E |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 2 |  |  | H | E | E | E | E | E | E | E |  |  |  |  |  |  |  |  |  |  |
| 3.5 | 3 |  |  |  |  |  | H | H | H | H | H | H | H | H | H | H | E | E |  |  |  |
| 4.5 | 4 |  |  |  |  |  |  | H | H | H | H | E | E | E | E | E |  |  |  |  |  |
| 2 | 5 |  |  |  |  |  |  |  |  |  | H | H | H | H | H | H | H | H | E | E | E |

4.

a)

1) There is competition for non-sharable resources.

2) The resources are requested on a partial basis (so, not all at once).

3) Once a resource has been allocated, it can’t be forcibly retrieved.

b)

i) 1st condition.

ii) 1st condition.

iii) 3rd condition.

iv) 2nd condition.

c) I would suggest merging the two requirements into one system, thus eliminating the 2nd condition.

5.

a) IF ((sum(time-A-east)/num-A-east)+(sum(time-A-west)/num-A-west))/2 > (sum(time-B)/num-B) THEN X:=1 ELSE X:=0

b) The program should take into account the traffic flow through road A as this is the main road and prioritizes it whenever possible.