**Problem 2: The following table represents the memory area for a simulation system. Find the results of running your simulation system for only one cycle**

**Memory Area**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Memory**  **Location** | **ID** | **Event notice (event type)** | **Event time** | **Next Event** |
| **1** | **7** | **--** | **--** | **0** |
| **2** | **0** | **--** | **--** | **11** |
| **3** | **2** | **New Arrival** | **2:22** | **12** |
| **4** | **0** | **--** | **-** | **9** |
| **5** | **1** | **End Service 1** | **2:19** | **3** |
| **6** | **0** |  |  | **0** |
| **7** | **3** | **--** | **--** | **0** |
| **8** | **0** | **--** | **--** | **6** |
| **9** | **0** | **--** | **--** | **8** |
| **10** | **5** | **--** | **--** | **1** |
| **11** | **0** | **--** | **--** | **4** |
| **12** | **4** | **End service 2** | **2:35** | **0** |

* Events List – head at memory location 5
* Empty List - head at memory location 2
* Queue 1 List - head at memory location 7
* Queue 2 List - head at memory location 10

**Solution:**

Next event at location 5: Job 1 at time 2:19

Event type: End Service 1

Two actions will be taken:

1. Get job 1 to queue 2 (server 2 is busy and will be free at 2:35))

**Memory Area**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Memory**  **Location** | **ID** | **Event notice (event type)** | **Event time** | **Next Event** |
| **1** | **7** | **--** | **--** | **5** |
| **2** | **0** | **--** | **--** | **11** |
| **3** | **2** | **New Arrival** | **2:22** | **12** |
| **4** | **0** | **--** | **-** | **9** |
| **5** | **1** | **--** | **--** | **0** |
| **6** | **0** |  |  | **0** |
| **7** | **3** | **--** | **--** | **0** |
| **8** | **0** | **--** | **--** | **6** |
| **9** | **0** | **--** | **--** | **8** |
| **10** | **5** | **--** | **--** | **1** |
| **11** | **0** | **--** | **--** | **4** |
| **12** | **4** | **End service 2** | **2:35** | **0** |

* Events List – head at memory location 3
* Empty List - head at memory location 2
* Queue 1 List - head at memory location 5 I think here memory location 7 not 5 and if it 5 can you explain it to me ☺ Thank you

1. Memory location 7 is correct. Here Queue 1 has only one job in location 7 (Job id 3).
2. Memory Location 5 has the last waiting job in queue 2

* Queue 2 List - head at memory location 10

1. Get job 3 out of queue 1 to server 1 (service time is 4 minutes)

**Memory Area**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Memory**  **Location** | **ID** | **Event notice (event type)** | **Event time** | **Next Event** |
| **1** | **7** | **--** | **--** | **5** |
| **2** | **0** | **--** | **--** | **11** |
| **3** | **2** | **New Arrival** | **2:22** | **7** |
| **4** | **0** | **--** | **-** | **9** |
| **5** | **1** | **--** | **--** | **0** |
| **6** | **0** |  |  | **0** |
| **7** | **3** | **End service 1** | **2:23** | **12** |
| **8** | **0** | **--** | **--** | **6** |
| **9** | **0** | **--** | **--** | **8** |
| **10** | **5** | **--** | **--** | **1** |
| **11** | **0** | **--** | **--** | **4** |
| **12** | **4** | **End service 2** | **2:35** | **0** |

* Events List – head at memory location 3
* Empty List - head at memory location 2
* **Queue 1 List - head at memory location 0**
* Queue 2 List - head at memory location 10