CSC373 Worksheet 1 Solution

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1. The cpu utilization is 100%.

   The CPU utilization formula is given as

$$\text{CPU Utilization} = 1 - \prod_i \text{I/O blocked time of ith process} \tag{1}$$

   Since the processes do no I/O, we can write there is no I/O blocked time.

   Thus, we can conclude

$$\begin{aligned} \text{CPU Utilization} &= 1 - 0 && (2)\\ &= 1 && (3) \end{aligned}$$

   which is 100%.

   Notes

   - **CPU Utilization**
     - Means % of time CPU is in use
     - Formula is

$$\text{CPU Utilization} = 1 - \prod_i \text{I/O blocked time of ith process} \tag{4}$$

   - **Process**
     - Means a program in execution

- **PID**
  - Is a short hand form for 'process identifier'
- **Process States**
  - in simplified view, process can be in one of the three states
    1. **Running:**
       * Is running on a processor
       * Means 'Is executing instructions'
    2. **Ready:**
       * Is ready to run
       * But, OS chosen to not to run it at the moment
    3. **Blocked:**
       * Is not ready to run until some other event takes place

       Example
       Running an I/O request to disk → process blocked → other process can do their job while waiting