TUTORIAL TWO

Processes and Threads

1. Indicate whether the following statements are true or false. Justify your answers.

   a) PCB (Process Control Block) is needed in a time-sharing system.

   b) Process control blocks of all processes are stored in the user space of the main memory.

2. Explain the difference and the relationship between a program and a process. Is this difference important in a single process system? Why or why not?

3. A multiprogramming system *sometimes* has no running or ready process. Explain how this is possible and whether the system is therefore "hung".

4. The figure below shows the execution of processes P0 and P1 in a multiprogramming system.

   a) Identify state transitions of each process as shown in the figure.

   b) Describe operations A, B, C and D performed by the operating system kernel as shown in the figure.