IT2164/IT2561 Operating Systems

Tutorial 5

**Process Management**

Attempt the following questions before you attend tutorial.

1. What is a process?

A binary process in execution

1. In a multi-threaded process, threads share certain information in the same process whilst not sharing others. In your own words, briefly explain why this is so.

In a multiple threaded process, each thread needs to maintain its own set of data in order to perform its own series of instructions.

1. Given that the states of a process are :
   * Running : Currently using the CPU
   * Ready : Waiting for the CPU
   * Blocked for Interrupt : Waiting for an interrupt handler to finish, then resume running.
   * Blocked for reusable resource : Waiting for a reusable resource to be allocated, then will become ready.
   * Blocked for consumable resource : Waiting for a consumable resource to be allocated, then will become ready.

What is a possible state diagram for the process? Show the relationship in terms of the transitions between each of these states.

Request

Wait



Done

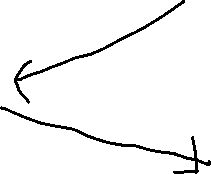
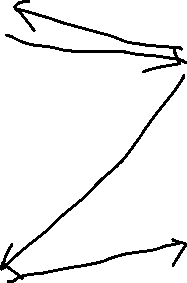
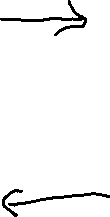
Wait Complete

Blocked for interrupt

Request

Running

Request



Blocked for reusable

Allocate

Start

Allocate

Ready

Blocked for consumable

1. What data structure is used to store the information regarding each process in the OS? How are they organized?

The Process Descriptor, it is organised as the following:  
 Process ID

 Program counter

 Register values

 Process state

 Type & location of resources it holds

 List of resources it needs

 Security keys

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