Introduction to Process Management

Introduction

So far we have seen that all the applications reside in the user space and applications use system calls to communicate to the kernel, which in turn gets the work done from hardware. Now, in this module, we will understand that all the applications that you can interact with, from the desktop, are converted into something called a process by the OS. We will understand how processes are created and how OS gets their instructions executed by CPU.

Note: There are services which run in the background and users can interact with them through their desktop. Such services are also converted into processes by OS.

Flow of Lecture

This module is divided into three parts:

1. Introduction to Process
2. Process Scheduling Algorithms Part 1
3. Process Scheduling Algorithms Part 2

In this module, we will be answering following questions and discussing following concepts:

1. How processes are created and what are the different states of process during its life cycle?
2. What are different data structures used to move processes from one state to another?
3. Replacing one process from the running state with another process, involves saving the information of the outgoing process and restoring the information of the incoming process to CPU. This is called a context switch. We will explore this phenomena in detail.
4. The most important job of an OS, with respect to processes, is to select one process from the processes which are ready to be executed and schedule it to the CPU. This is called process scheduling. In the last section of this module, we will learn about various scheduling algorithms that are available to us.