* System Programming and Operating System (SPOS) - Assignment Test Study-4

Name :- Kaustubh Shrikant Kabra
Class :- Third Year Engineering.
Div :- A
Roll Number :- 38
Batch :- T-2
Department :- Computer Department
College :- AISSMS's IOIT.

## Process Management in Linux / Windows / Android.

A process is a program in execution. A process needs certain resources, including CPU time, memory, files and I/O devices to accomplish its task.

Process -

When an application components starts and the application doesn't have any other components running, the android system starts a new linux process for the application with a single thread of execution.

By default all components of the same application run in the same process and thread (main()) thread.

* Process Life Cycle in Android -

• Foreground Process -

1. An activity which is literalting with user. When an activity calls methods like onstart[], onresume[].
2. When a service is executing any of the methods like OnCreate(), OnStart(), OnDestroy().

- Background Process -

1. When activity running method like onStop() i.e. currently user is not interacting with that activity
2. System maintains LRV list of background process.
3. Whenever a process decided to kill, it stores the state of activity. So whenever next user wants the activity, we can restore the previous state of activity.

- Visible Process -

1. An activity which is not interacting with user, But it is still visible to user, which an activity running method like on Pause ().
2. When a service is interacting with visible activity.

- Service Process -

1. When a service is started using StartService ()
2. Eg: Playing music in background, downloading file from internet.

- Empty Process -

1. When a process does not have any active component.
2. Caching of empty process inside memory, reduces relaunching of application once again if user wants that app in time.

* Android uses its own virtual machine called Dalvik VM to ensure that multiple processes can run at the same time.

* LRU Cache Role in Optimization of Android Application-

Android OS pushes the least used application in a cache called LRU ~~Cache~~ cache. if the application has not been used for the the very long time, it will be pushed to the queue of LRU and will be present at the front of queue. Recently used application will be placed in the back of queue.