

Aim: study assignment on process scheduler algo in android and Tizen

Problem: study process scheduling algo in
Statement: android and Tizen.

Theory:

① Android OS:

- It is a mobile OS developed by google based on modified version of Linux kernel and other open source SW and designed primarily for touch screen mobile devices such as smart phone and tablets.
- In addition Google has further developed Android/TV, Android auto, Android wear each with a specialized user interface.
- Variants of Android are also used in game console digital camera, PCs and other electronics.
- The android development supports with full Java Prog lang.
- even other Package that are APT and JSE are not supported.

* Advantages :-

- Support 2D and 3D Graphics
- Support multiple lang
- Java Support
- faster web browser
- support audio video etc

② Tizen OS :

- Tizen is mobile OS developed by Samsung that runs on wide range of Samsung devices including smartphones, tablets, in-vehicle infotainment (IVI) devices, smart, smart TV, smart cameras, Blue-ray players smart home appliances and robotic vacuum cleaners
- In 2013 Samsung merge its homegrown Bada Project in Tizen
- The Tizen association was formed to guide the industry role of Tizen including requirement gathering, identifying, facilitating service models and overall industry marketing & education.

Version :

April 30 2012 : Tizen 1.0 released

Feb 18 2013 : Tizen 2.0 released

May 20 2017 : Tizen 3.0 released

③ Android vs Tizen

- Android developed by Google whereas Tizen is developed by Linux foundation, Tizen association Samsung Intel
- Android source code is open source while Tizen is open source with SDK & closed source
- Android marketing target includes smartphone, tablets, smart TV etc. whereas Tizen target computing, camera, Samsung smart home
- OS family of Android is Linux and that of Tizen is Linux-like

* Advantages

- open source OS
- OS is compatible with mobile platform app built on Tizen can be launched on iOS and Android with few changes
- It is flexible to many app and adapt too with change

(4) Process scheduling algorithm in Android & Tizen

i) Normal Scheduling:

- Android is based on Linux and uses the Linux kernel's scheduling mechanism for determining scheduling policies. This is also true for Java code threads
- Linux time slice scheduling policy combines static & dynamic priorities.
- This priority assumes that higher priority processes will get more CPU time
- Dynamic behaviour results in an overall better response

ii) Real Time Scheduling :-

- The standard Linux kernel provides real time scheduling policies, `Sched-FIFO` and `Sched-RR`
- The main real time policy is `Sched-FIFO`
- When `Sched-FIFO` task starts running it continues to run until it voluntarily yields. Processes blocked is presented by a higher priority real time task
- & equal priority `Sched-FIFO` task do not preempt
- Non real time tasks use the `Sched-Normal` scheduling policy

iii) Thread scheduling:

- A thread scheduler decides which thread in the Android sys should run when and for how long
- Androids thread schedul uses 2 main factor determine scheduling
 - Niceness Value
 - Control groupe
- A thread with higher niceness value will run less often than those with lower ~~here~~ niceness val

iv) Priority Based pre-emptive task scheduling for Android os:-

- Task scheduling is case which referes to the way diff processes are allowed to share the common CPU
- Scheduler and dispatcher are slw which help to carry out this assignment
- Android os use o(1) scheduling algo as it is based on linux kernel 2.6
- Preemptive task scheduling involves interrupting low priority task when high priority task are present in queue.
- This scheduling is used for mbl os as the CPU utilization medium, TT time & responce time high

Conclusion:-

Thus we have studied concept of process scheduler of Android Tizen os.