OS concepts Group presentation: ITU 07202

General instructions:

Each group should explain in details with examples, figures/drawings and graphical if possible.

Maximum number of slides per presentation should be 12 including the title page.

The second page should include all students in a group their names and registration number.

Group 1 to 5 stream A and group 1 to 5 stream B should present on Wednesday **12th of June 2019**.

Group 6 to 10 stream A and group 6 to 9 stream B should present on **Friday 14th of June 2019**.

Each group should select only one topic. Each topic per group. No two groups should present same topic.

A group can select any topic below in a FCFS fashion.

---

1. Discuss Different types of OS and their applications. Explain brief their challenges.
2. Discuss 3 different process scheduling algorithms and explain the best one you would recommend.
3. With examples, discuss the memory hierarchy, explain the technologies, sizes, costs and types in each categories.
4. Discuss the cloud computing and explain the role of OS in their technology.
5. Discuss the **IoT** technology and the role of OS in this technology.
6. Discuss the concept of multiprogramming, multiprocessing and parallel system
7. With real life example, explain the differences between real time systems and timesharing systems. From the OS point of view.
8. Select three OS of your choice and explain their fundament differences in terms of structure, performance and usability.
9. How compiler works? Briefly explain system calls and their types.
10. With the help of pictorial diagrams, explain swamping, segmentation and fragmentation in memory management.
11. Discuss UNIX family OS. With examples and applications. Why UNIX OS are more trusted than Windows with technical experts and yet windows are the most used?
12. Discuss Virtual memory, virtual address, main memory and secondary memory
13. What are the I/O devices, mention 10 examples. How OS manage I/O devices.
14. Why do we call OS is the “brain”? Explain by considering its core functions and services it provide.
15. How OS works?
16. Brief discuss deadlock, system calls and interrupts in OS.
17. Discuss Round Robin (RR) and FCFS, and brief explain why RR is better than FCFS?
18. Discuss Preemptive and non-preemptive CPU scheduling and give examples of which type of algorithm belong to which ground.
19. Discuss briefly the block-chain and Bitcoin technologies. What type of OS best fit the technology?
20. Discuss Differences between Deadlock and Starvation in OS? And brief explain aging and its usefulness.

Assignment 2: Deadline Friday June 14, 2019.

1. Mention and explain briefly the best three (3) OS most used in big data center's servers. The OS which run on their servers.
2. As a system administrator at the bank, you're required to recommend the best OS for the company's email server, printing server and file system server. Which one would you recommend and why?
3. Given six memory partitions of 300 KB, 600 KB, 350 KB, 200 KB, 750 KB, and 125 KB (in order), how would the first-fit, best-fit, and worst-fit algorithms place processes of size 115 KB, 500 KB, 358 KB, 200 KB, and 375 KB (in order)? Rank the algorithms in terms of how efficiently they use memory.
4. Explain why mobile operating systems such as iOS and Android do not support swapping.

TEST-2 Will be held on Wednesday June 5, 2019.

Venue and Time LR 01- B18 (Stream B) and B20 (Stream A)

From 13:00 to 14:00.

Please arrive at the venue 30min before the start.