Assignment 1

Operating Systems

1. What are the main functions of an operating system?

2. What does the CPU do when it has no program to execute?

3. Int main()
   ```
   {
     int i, int j;
     scanf("%d", &i);
     for(j=0; j<i; j++)
     {
       sum= j+i;
     }
     printf("%d", sum);
     exit(0);
   }
   ```

   In the above problem, differentiate each and every line of code as CPU execution or I/O execution.

4. Difference between Multi-programming, Multi-tasking and Multi-processing?

5. Difference between a program and a process?

6. Categorize the following state: NEW, READY, RUN, BLOCK, TERMINATE, SUSPEND READY, SUSPEND WAIT as main memory or secondary memory.

7. Define the term context switch with a appropriate example.

8. Consider a system with 'n' CPU processors and 'm' processes, then answer the following queries regarding minimum and maximum number of processes:

	Minimum	Maximum
Ready	?	?
Running	?	?
Block	?	?

9. Define the responsibilities of: Short term scheduler, Middle term scheduler and Long term scheduler.

10. State some principles of giving a better user interactivity.

11. Why can't a virus just take hold of the system and keep running? Think and try to answer.

12. What is the responsibility of dispatcher?

13. What are the applications of real time operating system?

14. What do understand by the term system call?

15. What is the use of Fork and Exec system call?