List of Concepts Involved:

- What is an Operating System?
- Need of Multiple thread
- What is Thread?
- How to create Threads
- run() method
- Multiple task within single run()
- Different states of Thread
- synchronised keyword
- Deadlock
- Producer - Consumer problem

What is an Operating System?

It is a system software which runs in the background and helps the user to run other applications.

MultiTasking

Executing several tasks simultaneously is the concept of multitasking.
There are 2 types of Multitasking.
a. Process based multitasking
b. Thread based multitasking.

Process based multitasking

Executing several tasks simultaneously where each task is a separate independent process such type of multitasking is called "**process based multitasking**".
Example
typing a java program
listening to a song
downloading the file from internet
Process based multitasking is best suited at "os level".

Thread based multitasking

Executing several tasks simultaneously where each task is a separate independent part of the same Program, is called "Thread based MultiTasking".
Each independent part is called a "Thread".

1. This type of multitasking is best suited at "Programmatic level".
The main advantages of multitasking is to reduce the response time of the system and to improve the performance.

2. The main important application areas of multithreading are
   a. To implement multimedia graphics
   b. To develop web application servers
   c. To develop video games

3. Java provides inbuilt support to work with threads through API called
   Thread,Runnable,ThreadGroup,ThreadLocal,...

4. To work with multithreading, java developers will code only for 10% remaining
   90% java API will take care..