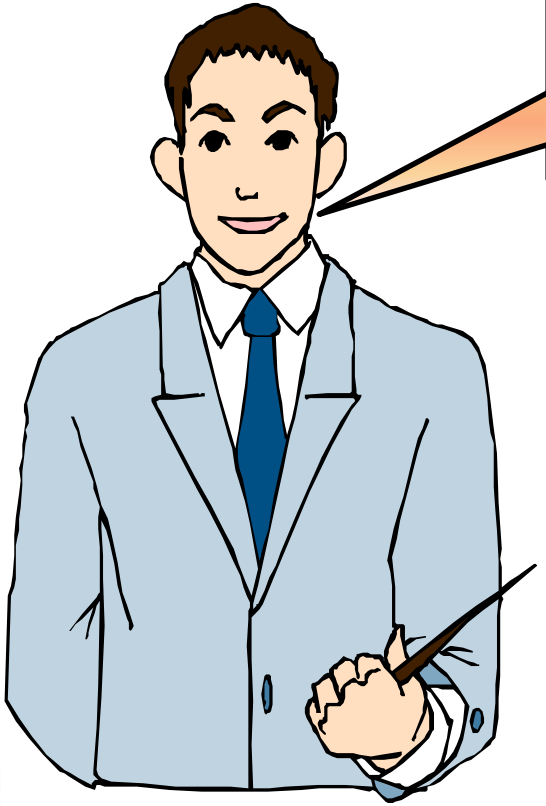

What are threads?

Implementing Threads (Contd.)



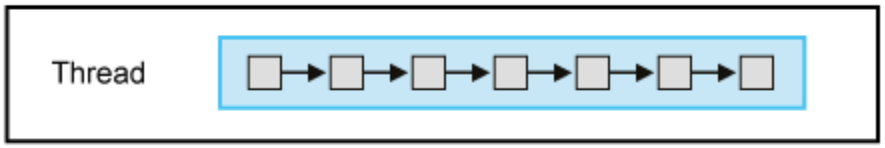
Let us understand the concept of threads in detail.

Implementing Threads (Contd.)

The designer of the battlefield game shows the explosion by making the huts disappear, showing the smoke, and playing the sound of the explosion at the same time. He is able to achieve this by using threads.

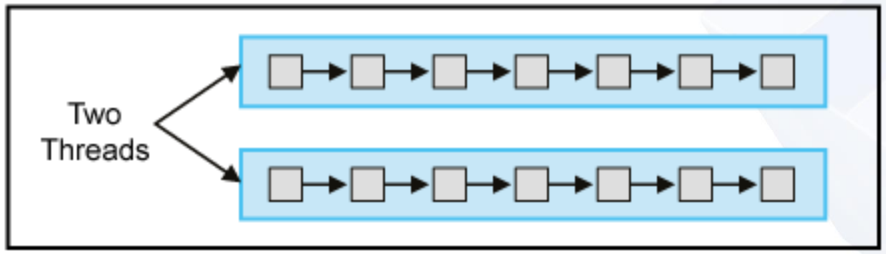
Implementing Threads (Contd.)

- Thread is the basic unit to which an operating system allocates processor time.
- Thread is an independent execution path within a program.
- You can perform multiple tasks at the same time by using threads in the program.
- A process that is executed using one thread is known as a single-threaded process.
- The following figure shows a single-threaded process.



Implementing Threads (Contd.)

- A process that creates two or more threads is called a multithreaded process.
- The following figure shows a multithreaded process.



Implementing Threads (Contd.)

- In single-threaded systems, an approach called event loop with polling is used.
- Polling is the process in which a single event is executed at a time.
- In the event loop with polling approach, a single thread runs in an infinite loop till its operation is completed.
- When the operation is completed, the event loop sends the control to the appropriate event handler.
- Multithreading is used in the software that:
  - requires user interaction.
  - requires a quick response to the user's activities.