Department of Computer Science and Engineering

FACULTY OF ENGINEERING AND TECHNOLOGY
UNIVERSITY OF LUCKNOW
LUCKNOW

MCA-203

Dr. Zeeshan Ali Siddiqui
Assistant Professor
Deptt. of C.S.E.

TYPE OF OPERATING SYSTEM

Type of OS

- Real Time Operating Systems
- Single user / Single Task
- Single user / Multitask
- Multi User / Multitask
- Network Operating Systems
- Distributed Systems
- OS for Mobile Devices

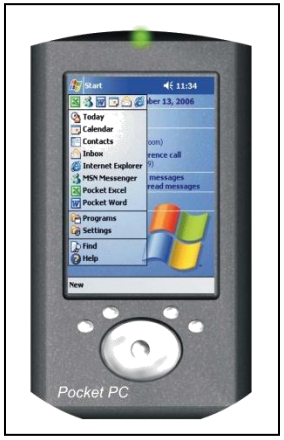
Real-Time Operating Systems

- Systems with a specific purpose and a certain result
- Uses include:
  - Industrial machines
  - Robotic equipment
  - Automobiles
  - Video game consoles
  - Home appliances

Single-User Operating Systems

Single-task systems

- *Perform one task at a time*
- PDAs:
  - Pocket PC
  - Palm OS
- MS-DOS

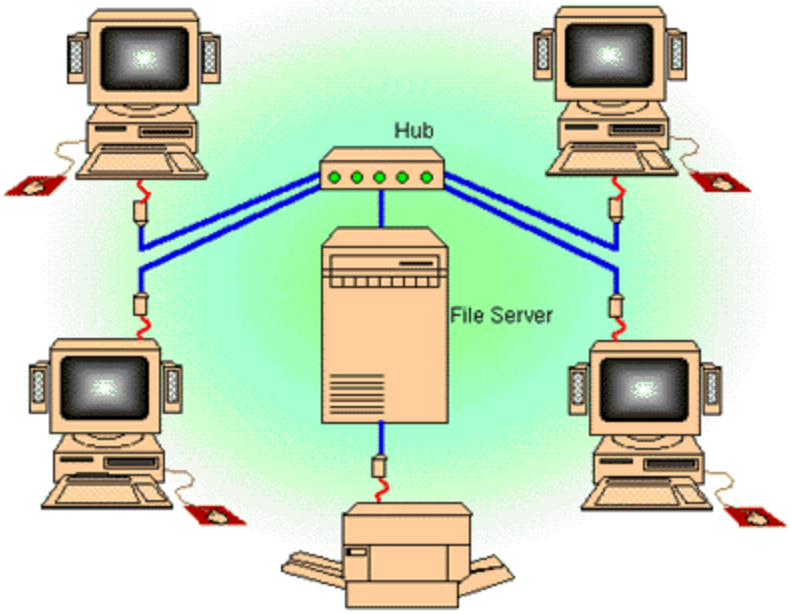


Multitask systems

- *Perform simultaneous tasks*
- Windows
- MAC OS
- Linux

Multi-user Operating Systems

- Known as network operating systems
- Allow access to the computer system by *more than one user*
- Manage user requests
- Systems include:
  - UNIX
  - Novell Netware
  - Windows Server 2003

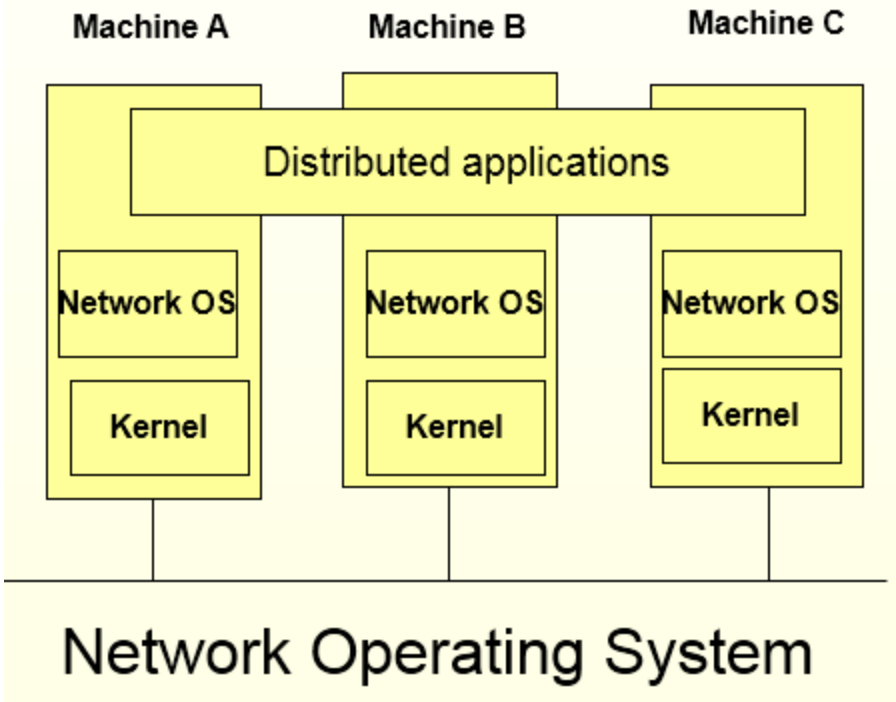


Network Operating System

- Runs on a *loosely coupled* collection of independent computers, where no node has direct control over any other.

- Supports non-transparent communication and resource sharing (telnet, UNIX rlogin, FTP, etc.)

- Users are aware of the existence of multiple processors in the system.

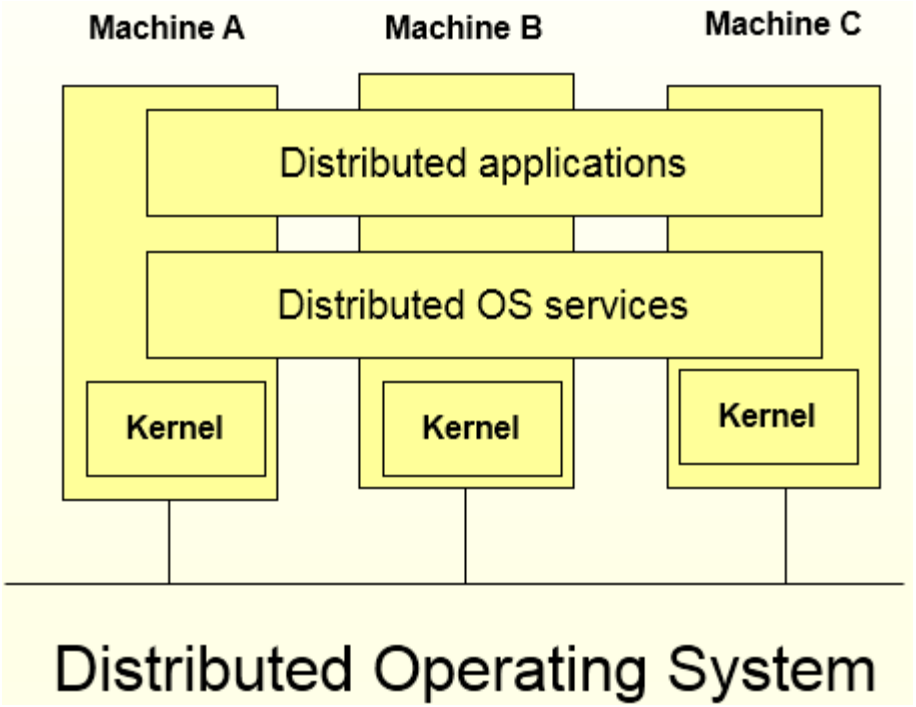


Distributed Operating System

- Goal: to give the appearance of a centralized operating system – *tightly coupled* software on a loosely coupled computer system

- Ideally, processes run transparently on any node, using local and remote resources interchangeably.

- Pure distributed systems are *rare*.



OS for Mobile Devices

- Symbian
- Windows Mobile => Pocket PC
- Nokia OS
- Palm OS
- Android

Exercise

1. What is the main difficulty that a programmer must overcome in writing an operating system for a real-time environment? Also, differentiate between hard real time operating system and soft real time operating system.

2. Write down the different types of OS.

3. Describe some of the challenges of designing operating systems for mobile devices compared with designing operating systems for traditional PCs.

4. Explain batch operating system with example.

5. Explain network operating system with example.

6. Explain distributed operating system with example.

References

1. Silberschatz, Galvin and Gagne, “Operating Systems Concepts”, Wiley.

2. William Stallings, “Operating Systems: Internals and Design Principles”, 6th Edition, Pearson Education.

3. D M Dhamdhere, “Operating Systems: A Concept based Approach”, 2nd Edition, TMH.

Thank You.