

Type Of Operating System

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BATCH OPERATING SYSTEM???



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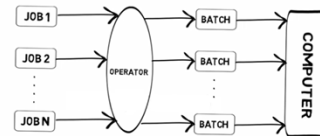
BATCH OPERATING SYSTEM

- Batch processing systems were developed to reduce set-up time for user programs.
- They can be used for non-user-focused jobs, combining jobs in batches and executing them one by one without user intervention.
- Batch processing increases CPU utilization and quantifies user service turnaround time, which is the time from submission to user response.

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Definition

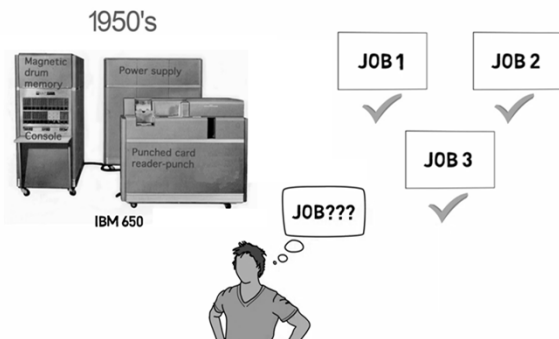
BATCH OPERATING SYSTEM???



Batch operating system group's jobs that perform similar type of functions. These groups are called as batch and are executed at the same time.

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Concept simplified



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Concept simplified

JOB???

EG. 12 / 2 ?

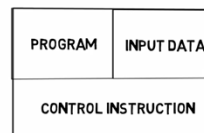
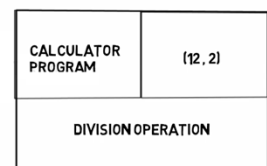


FIG: JOB

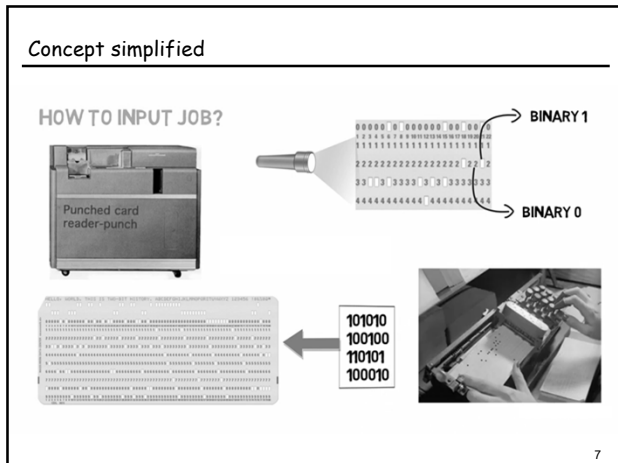


JOB FOR DIVISION OF 12 AND 2

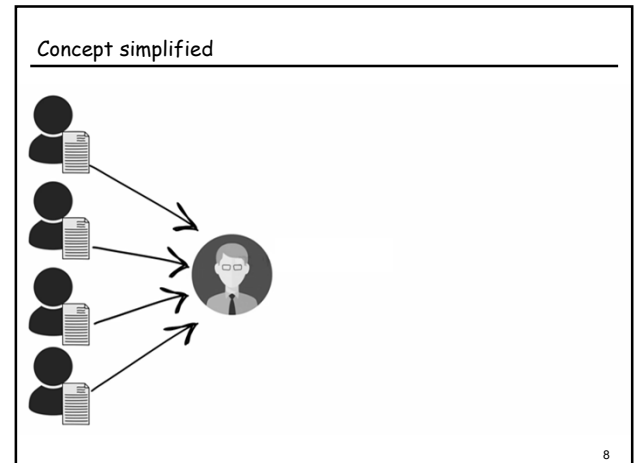
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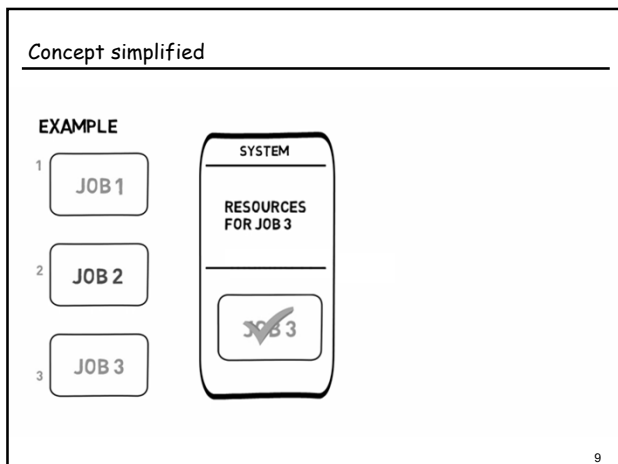
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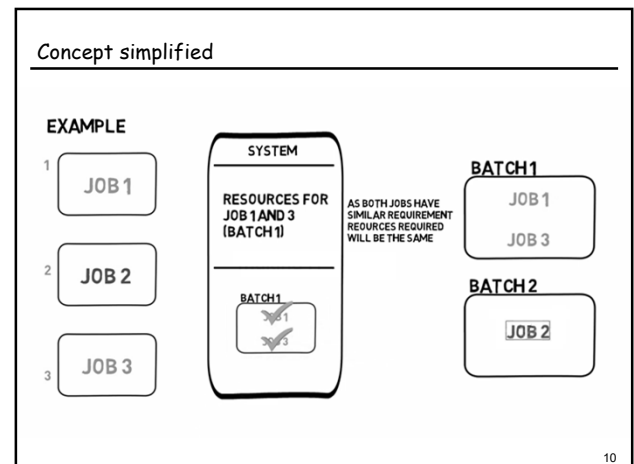
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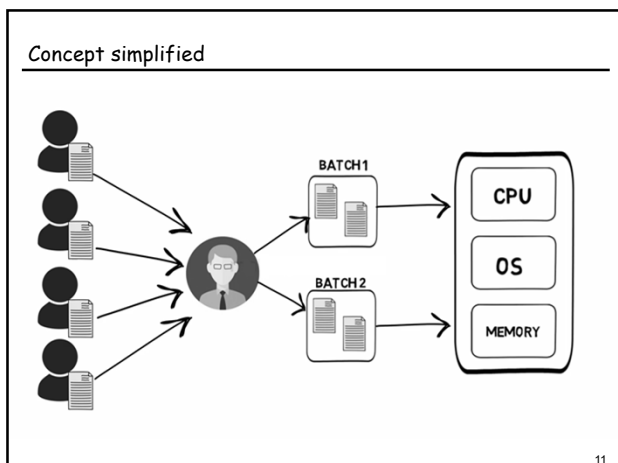
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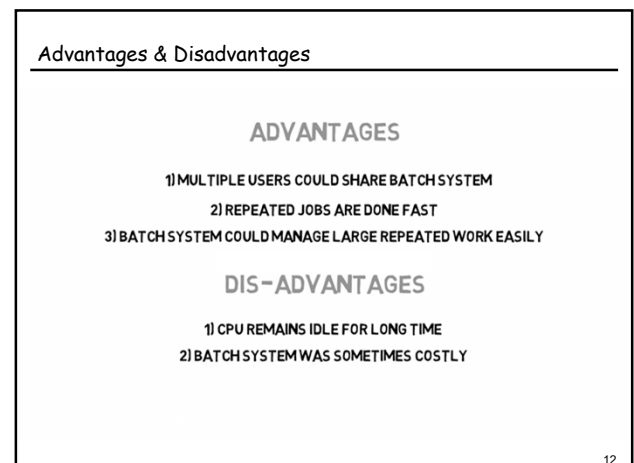
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MULTI PROGRAMMING OPERATING SYSTEM



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Definition

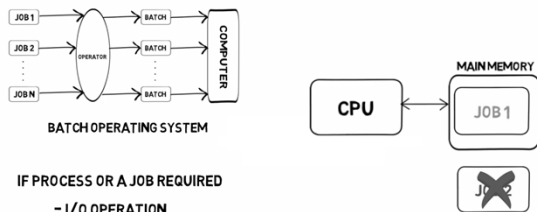


In a multi-programming system, two or more user programs can be in memory and are executed one after another.

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Why Multi-programming



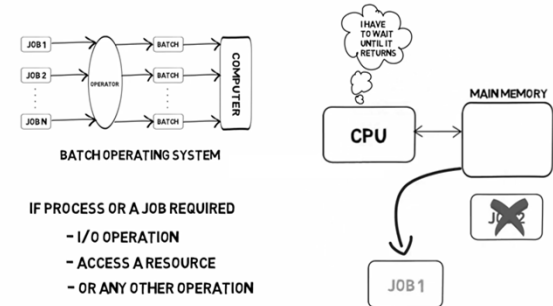
IF PROCESS OR A JOB REQUIRED

- I/O OPERATION
- ACCESS A RESOURCE
- OR ANY OTHER OPERATION

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Why Multi-programming



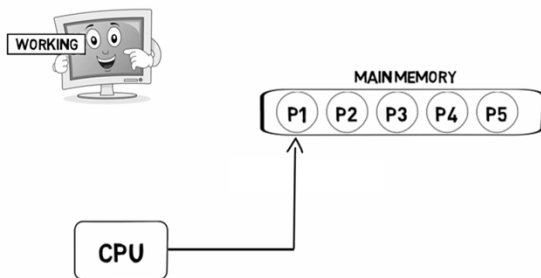
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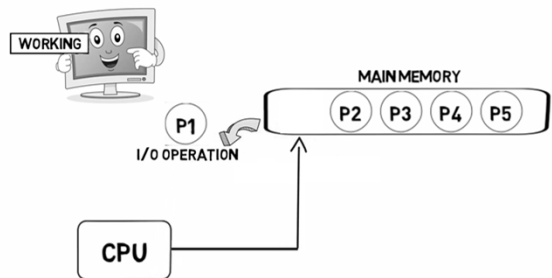
How does it work?



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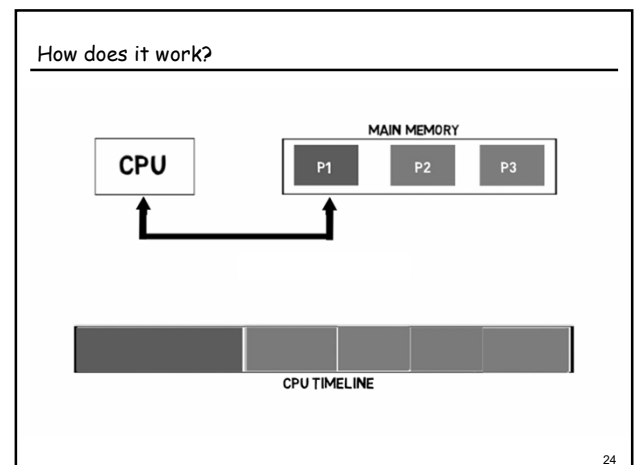
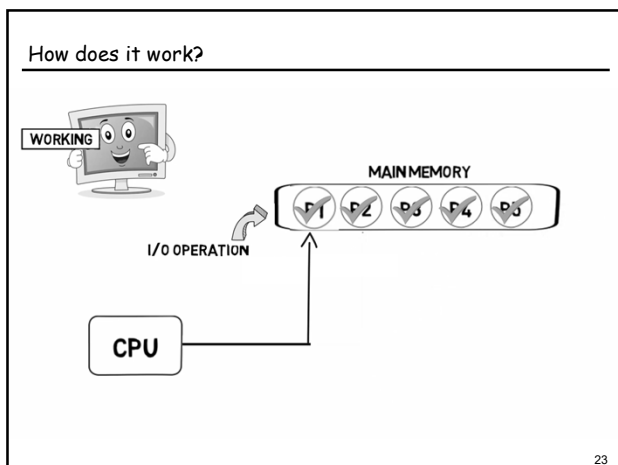
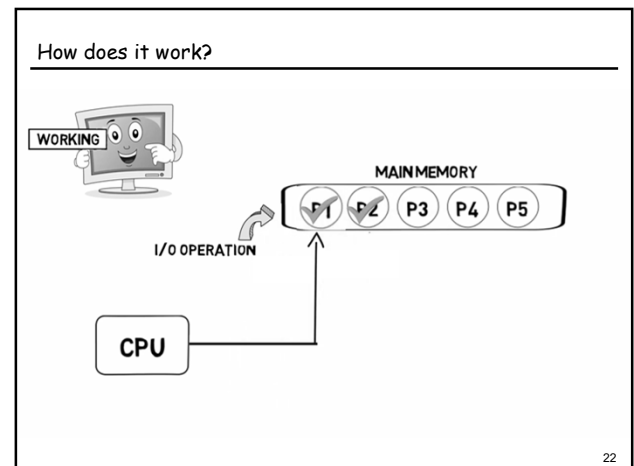
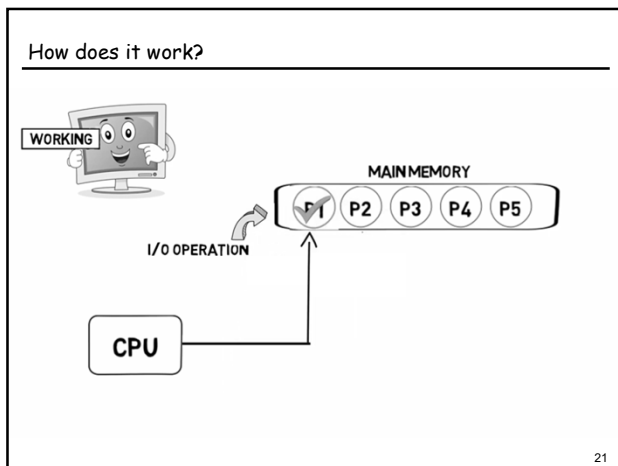
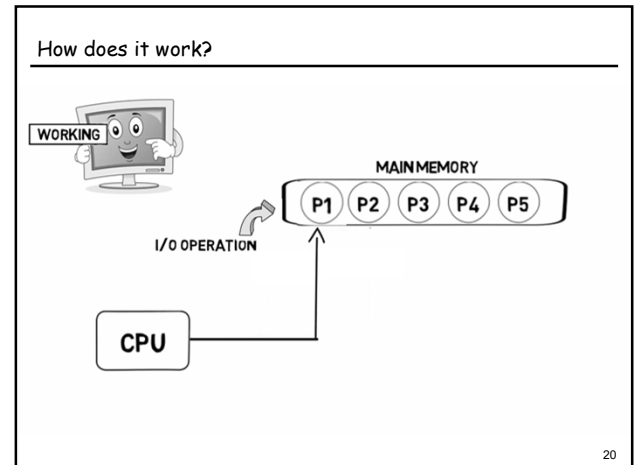
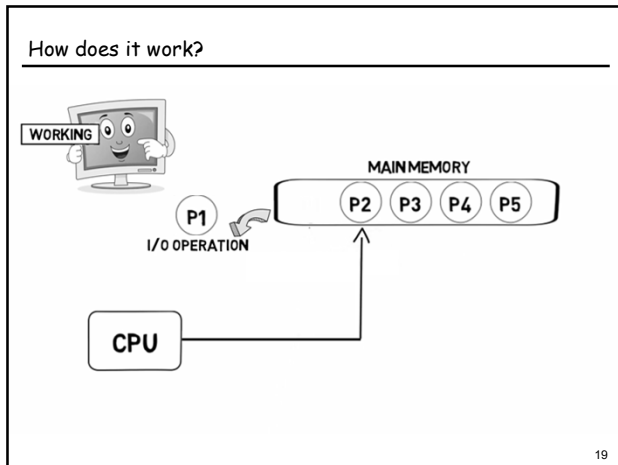
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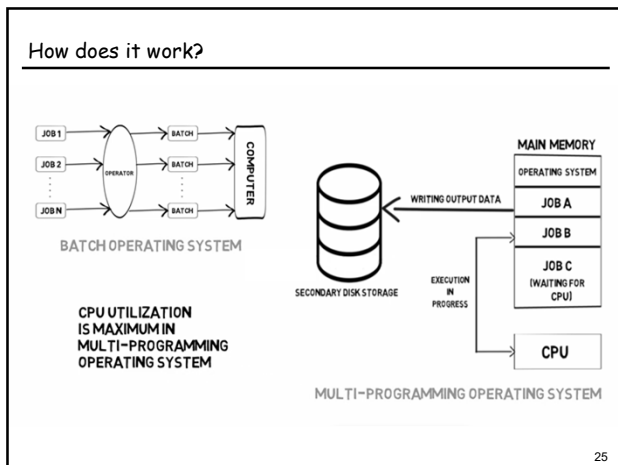
How does it work?



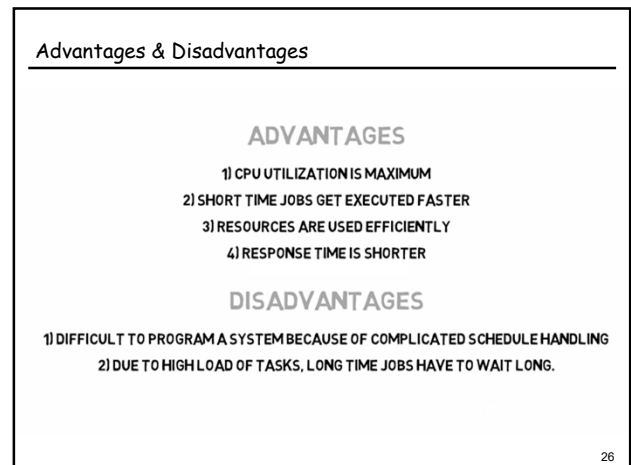
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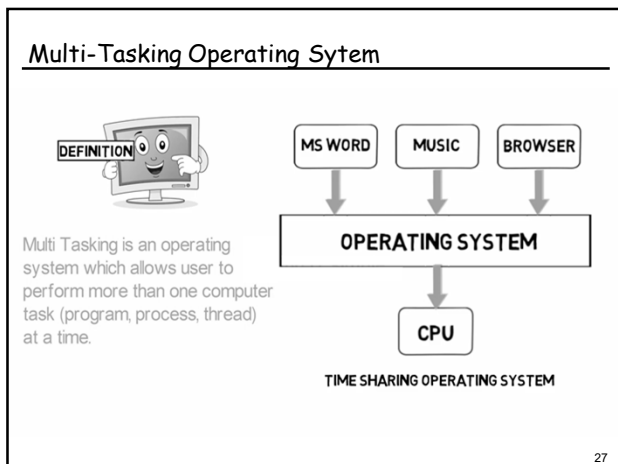




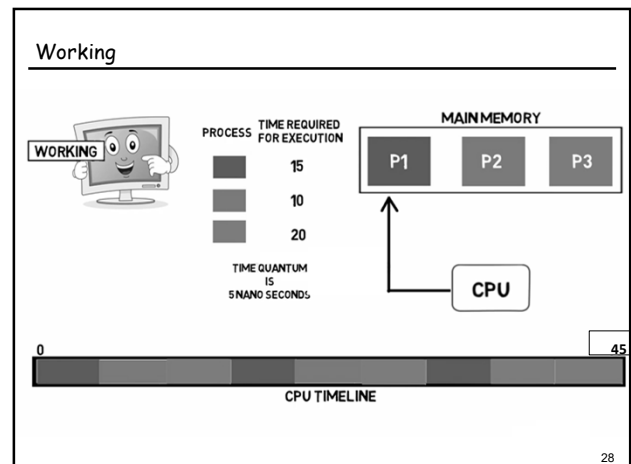
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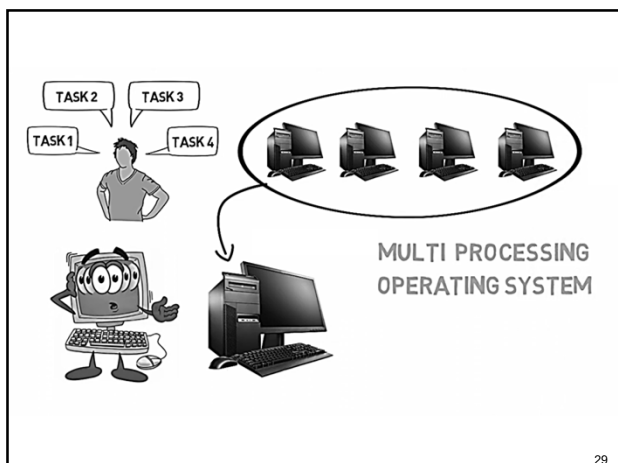
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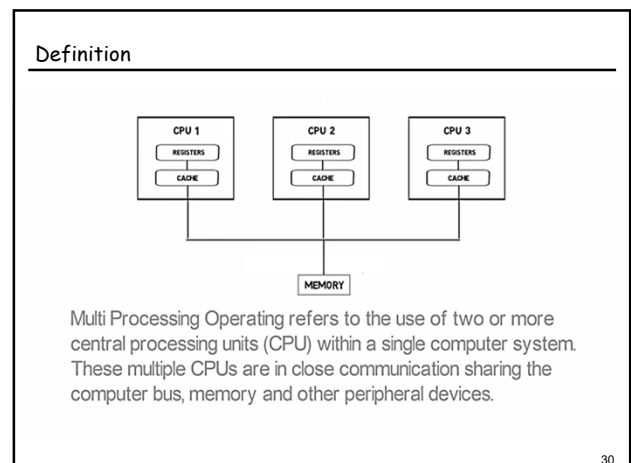
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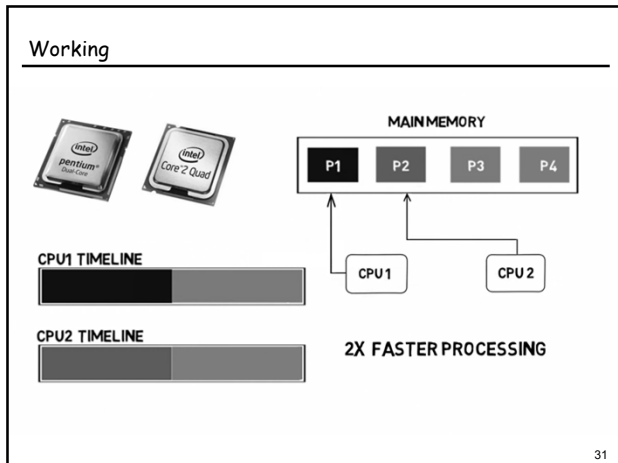
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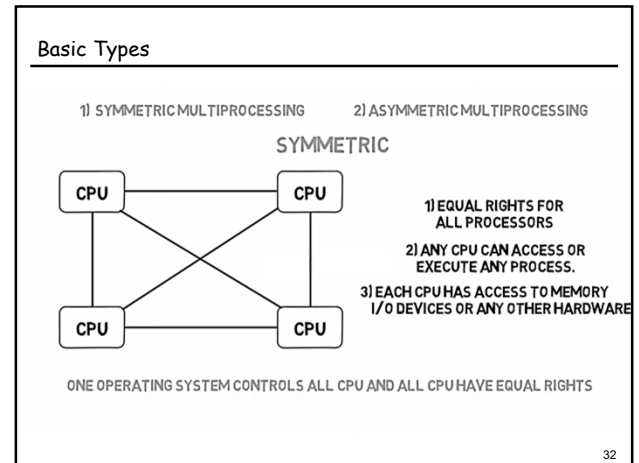
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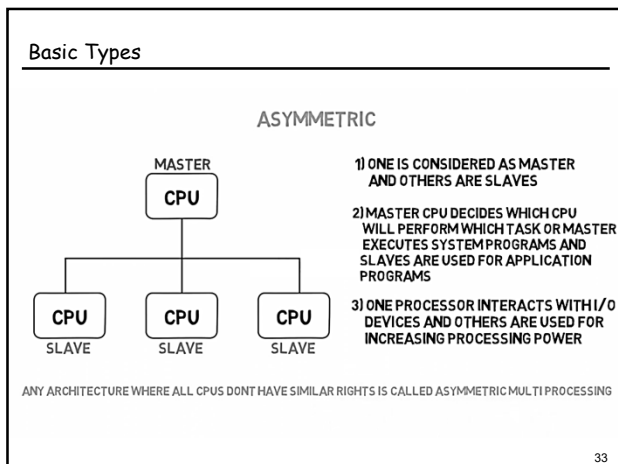
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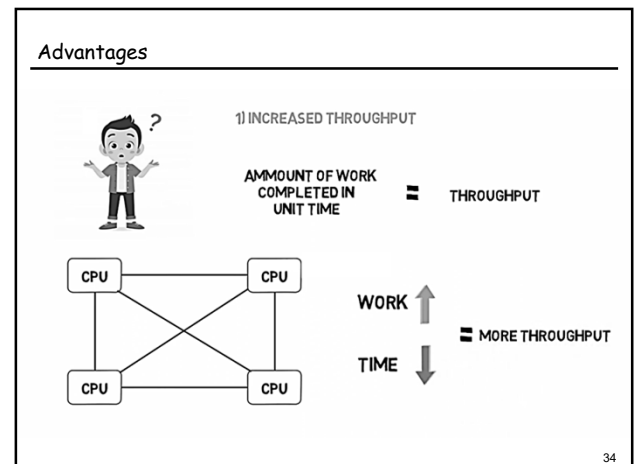
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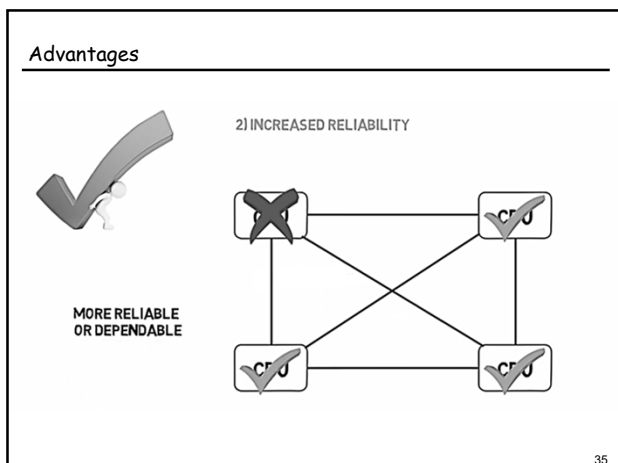
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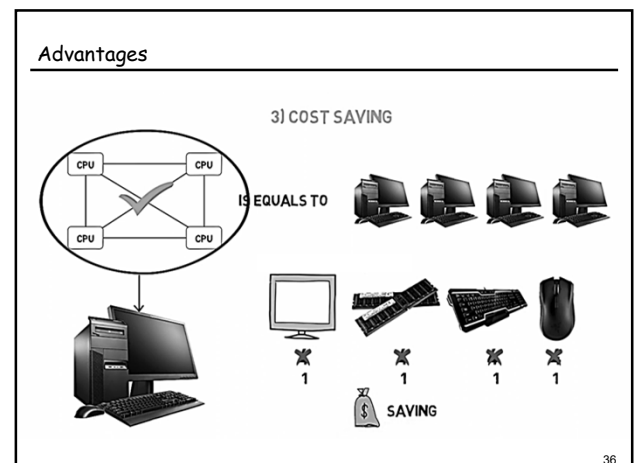
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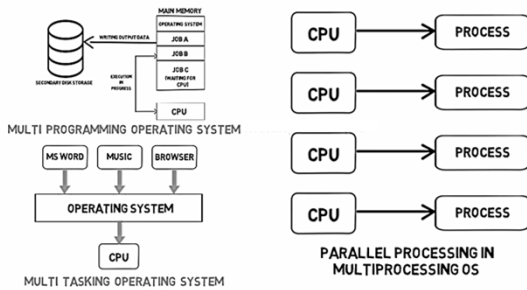
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Advantages

4) PARALLEL PROCESSING

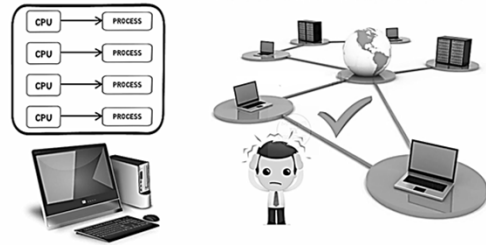


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MULTI-PROCESSOR OPERATING SYSTEM

DISTRIBUTED OPERATING SYSTEM



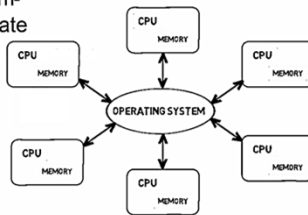
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Definition

DISTRIBUTED OPERATING SYSTEM

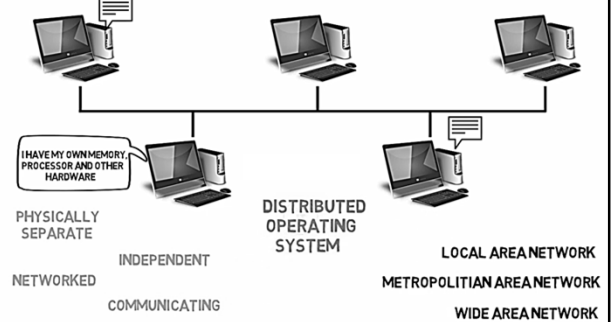
A distributed operating system is the software over a collection of independent, networked, communicating and physically separate computational nodes.



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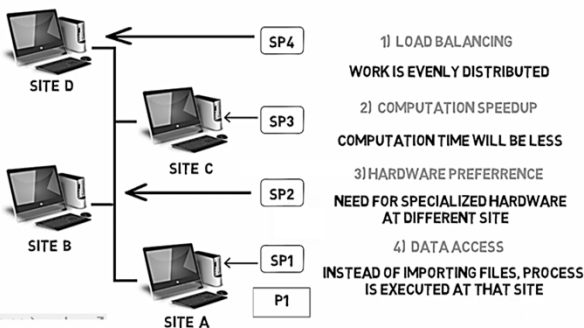
Definition



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Definition

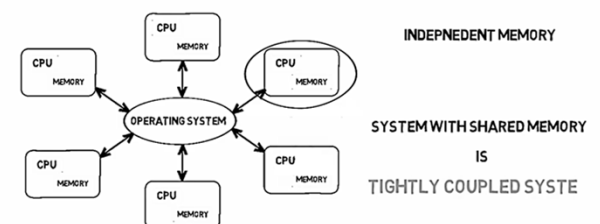


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What is loosely coupled?

LOOSELY COUPLED SYSTEM

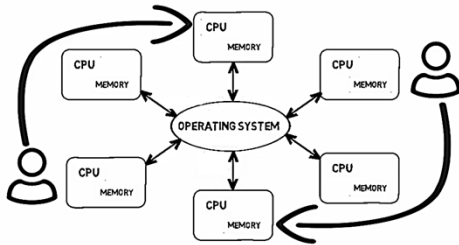


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Goals/Features

1) CONNECTING USERS & RESOURCES

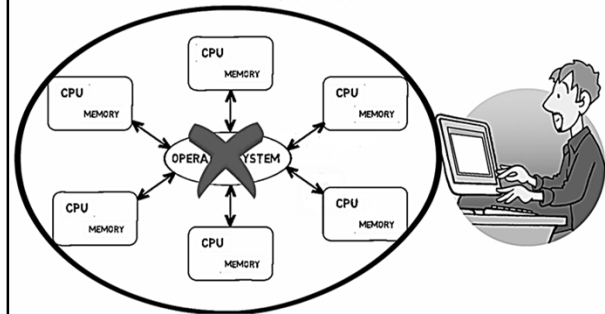


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Goals/Features

2) TRANSPARENCY

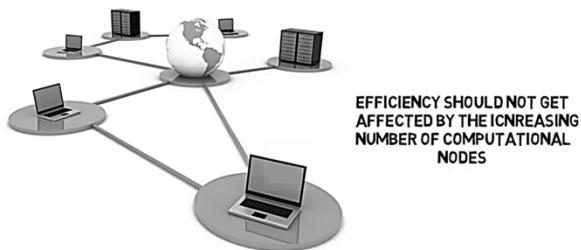


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Goals/Features

3) SCALABILITY

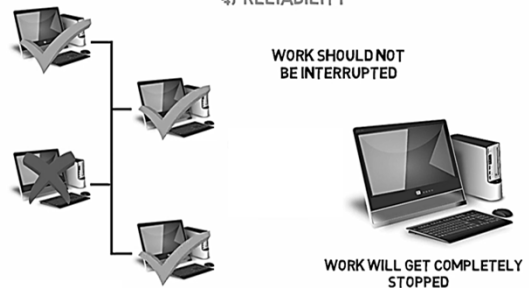


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Goals/Features

4) RELIABILITY



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Goals/Features

5) PERFORMANCE



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Real-Time Operating System (RTOS)

- Time-sharing systems had a drawback in that response time increased with increased load, but some computations could not bear the delay. In the 1980s, new computer systems were developed to provide real-time processing, which is crucial in defense applications.
- Real-time systems are divided into hard and soft types, with hard systems having hard deadlines and all defence applications being of this type. Soft systems, such as digital audio, multimedia systems, and virtual reality, allow for delayed audio or video data without harm. However, soft real-time systems must be bounded and predictable, not infinite.

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Real-Time Operating System (RTOS)

- Real-time operating systems (RTOS) are designed to meet the special needs of real-time systems, providing timely responses to applications.
- The main challenge for RTOS is scheduling real-time tasks based on deadline information, ensuring all deadlines are met.
- Fault tolerance is also a feature of real-time systems, providing redundancy in hardware and software to ensure continuous operation. RTOS must use special techniques to tolerate faults and continue operations, ensuring no critical functioning is stopped or delayed.

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