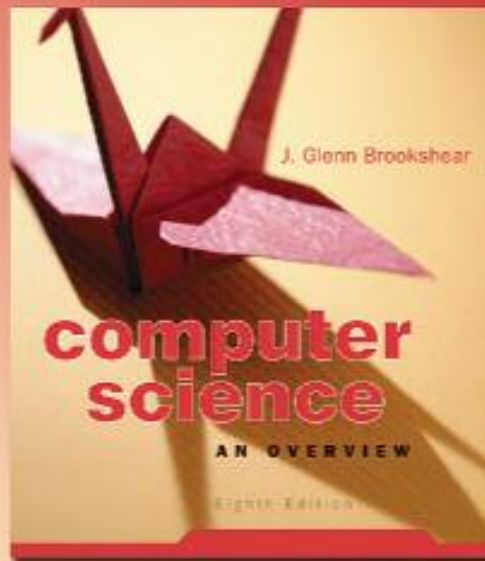


## Chapter 3



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## Chapter 3 Operating Systems

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## Some functions of an operating system

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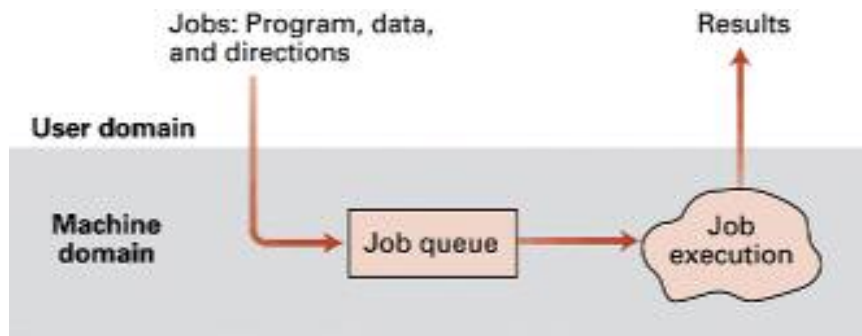


## Evolution of shared computing

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**Figure 3.1** Batch processing

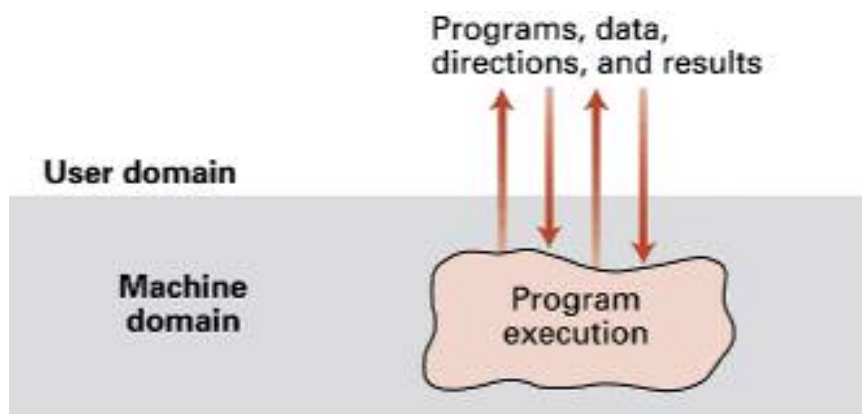


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3-5



**Figure 3.2** Interactive processing



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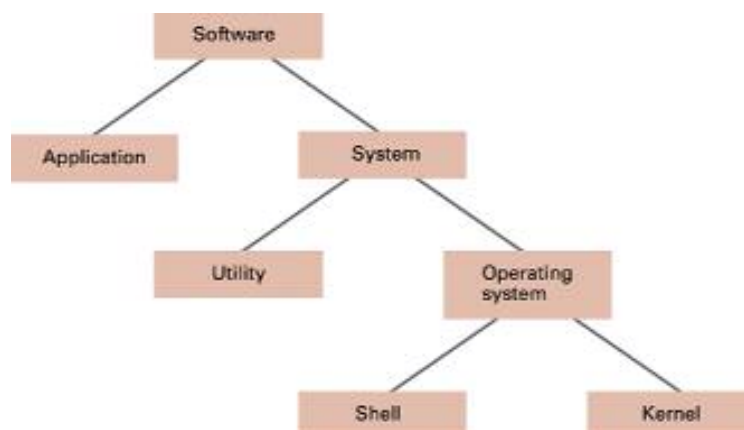


## Types of software

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## Figure 3.3 Software classification



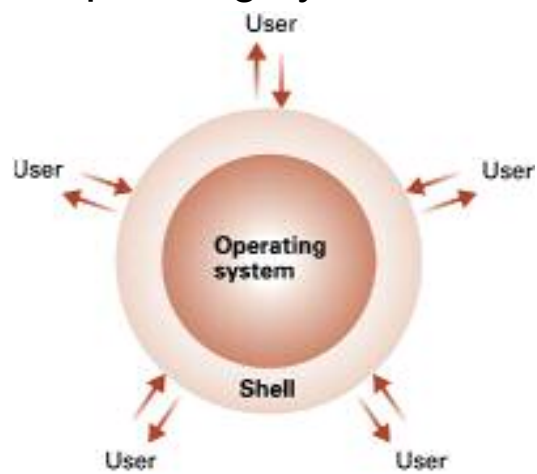


## Components of an operating system

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## Figure 3.4 The shell as an interface between users and the operating system





## File Manager

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## Memory manager

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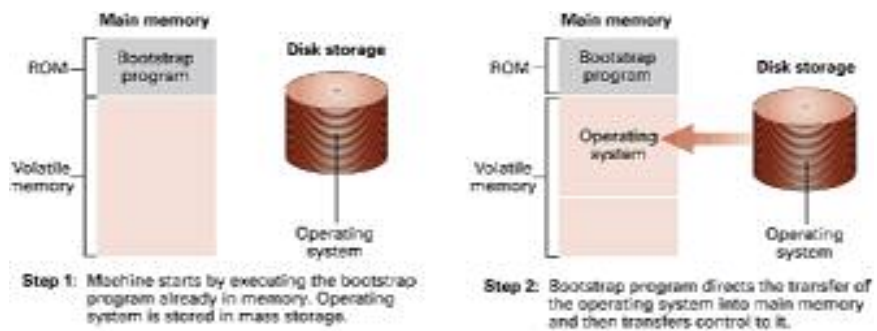


## Getting it started (bootstrapping)

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## Figure 3.5 The booting process





## Processes

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## Process administration

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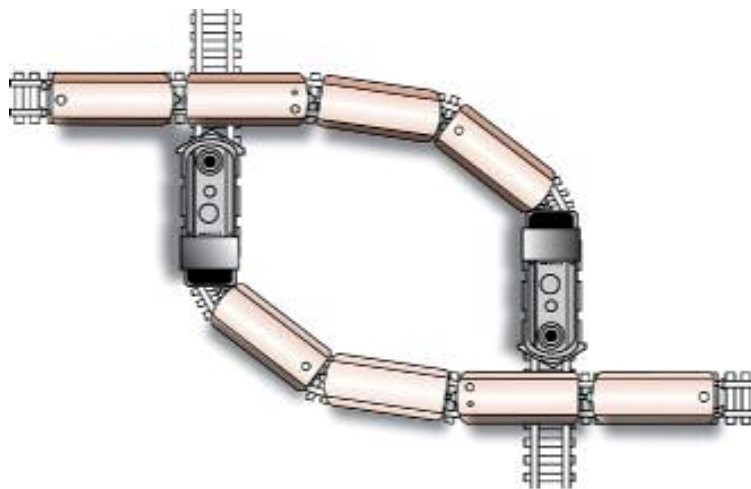


## Deadlock

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**Figure 3.7** A deadlock resulting from competition for nonshareable railroad intersections





## Spooling

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## Security from outside attacks

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## Security from attacks from within

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