What is an OS?

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Operating System

- Machine does little without one, OS…
  - Manages hardware and system resources
  - Shares out and accounts for resources
  - Offers secure environment for applications
  - Provides common device or I/O system
- Includes kernel and system library interface
  - Don't consider *
    - Applications and services
    - Desktop environment

**** In practice distinction can be hard to maintain***

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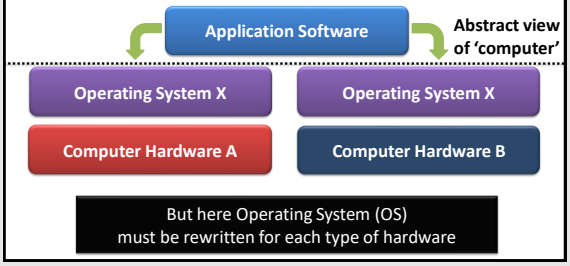
Benefit of Abstraction

- Operating System gives known abstract environment within which application can operate



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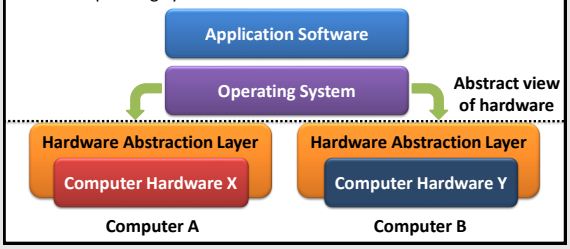
Benefit of Abstraction

- Hardware abstraction allows us to hide hardware differences from Operating System
  - Operating System can then run on different hardware



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Operating Systems

- Embedded/ Real-Time, emphasis on
  - Proven long term reliability and strict timing guarantees
  - Small footprint, no unnecessary code
  - Certification process for safety critical systems
- Server, emphasis on
  - Fairly sharing resources
  - Reliability
- Desktop, emphasis on
  - Interactivity
  - GUI and graphics/ media

Could be same OS running with different parameters

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Operating Systems

- There are many, but…
- Unix and (Windows) NT
  - Dominate market
  - Have huge application and support base
  - User view driven by graphical interface
    - Arguably not part of OS
    - Can be quite different to underlying OS
  - Not necessarily where we'd start from today

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