

Real-Time Embedded Systems

CpE-450 Spring 06

Class 14

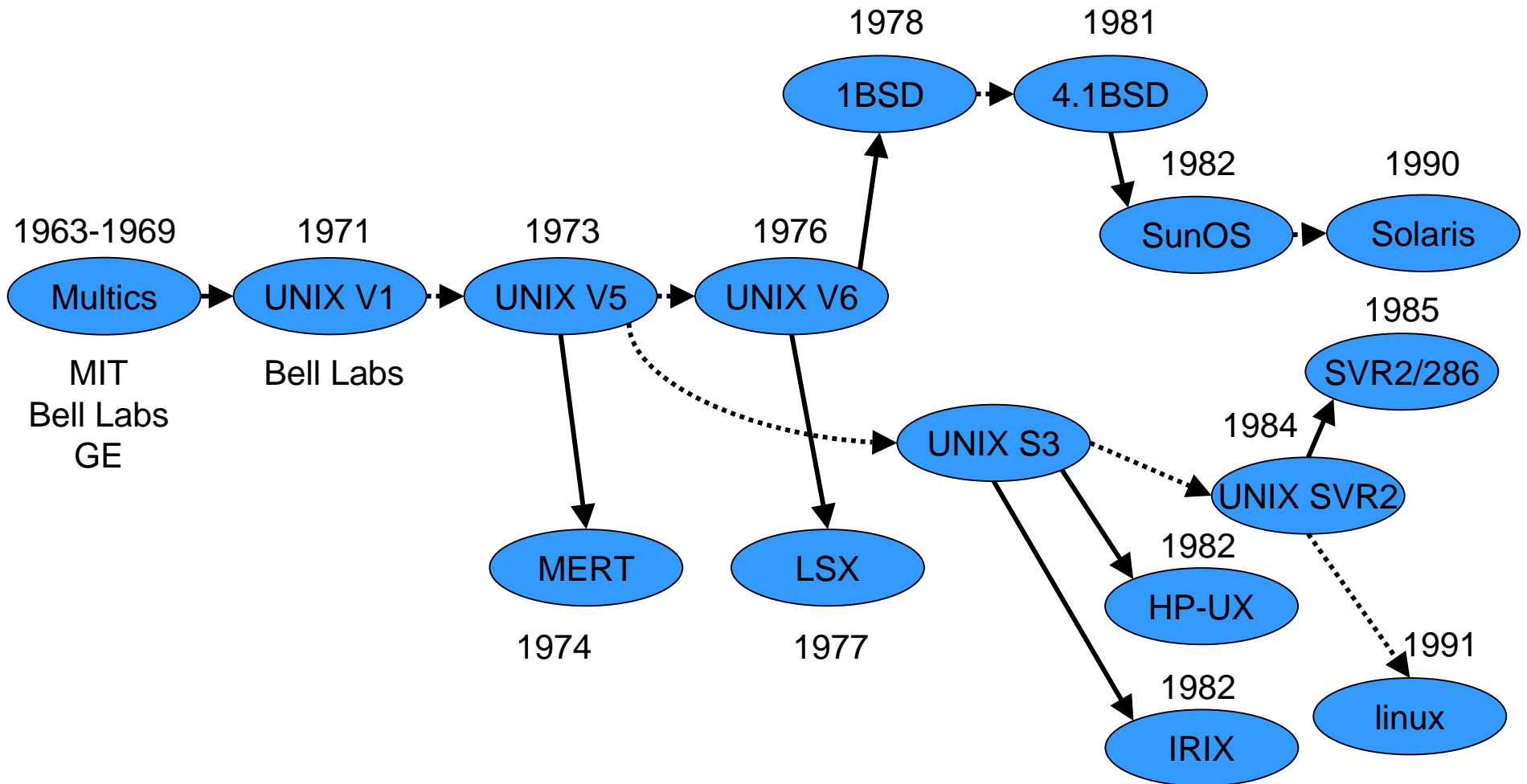
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Outline

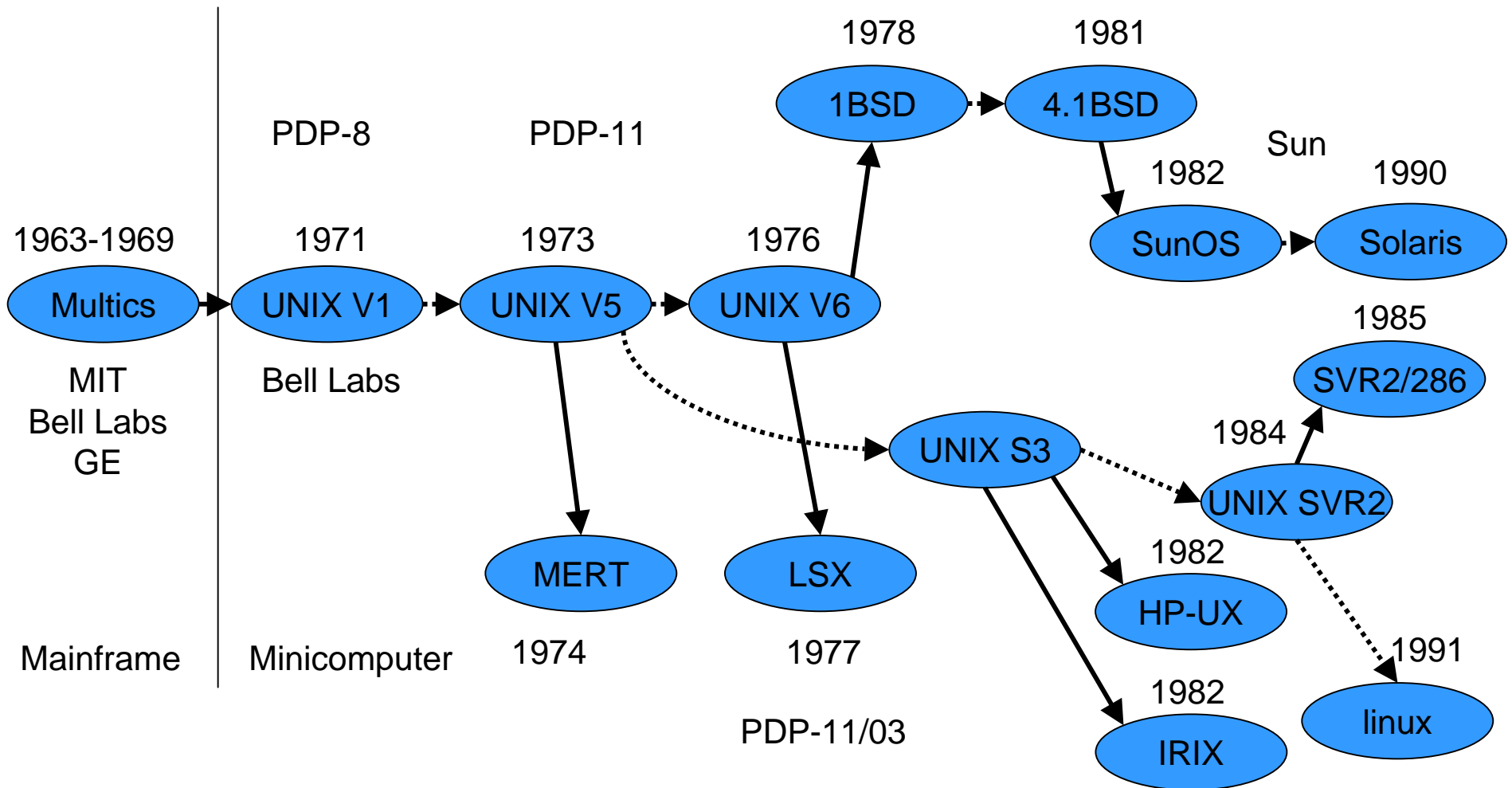
- Embedded linux
- Wrap-up

Brief Early History of (*ix *ux *ics)



Semi-complete history at <http://www.levenez.com/unix/history.html#00>

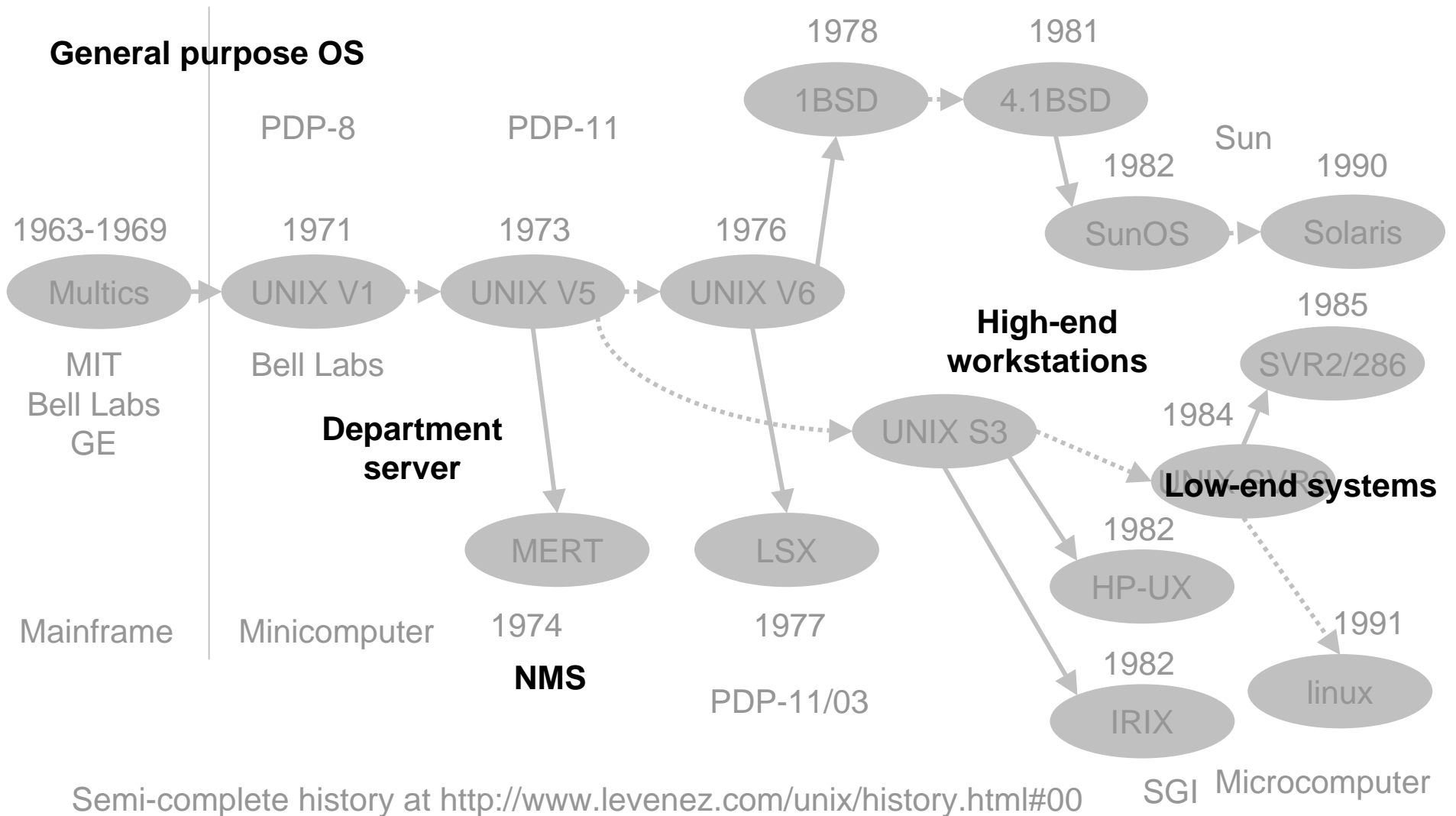
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SGI Microcomputer









UNIX/linux Applications



UNIX/linux Characteristics

- Files = devices = directories
- Process I/O = File I/O
 - Redirection
 - Pipes
- Enforcement of process/user permissions
- Potential for lightweight system
- System functions to support reliable system operation
- Extensive process prioritization capabilities
- Scripted (shell) and compiled (generally C) extensibility

UNIX/linux Characteristics – and relevance to embedded systems

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Sample Embedded linux Systems



Wireless router with web server interface



Webcam with web server interface



gumstix™ embedded platform

Wrap-up

- What should CpE450 evolve to?
 - What is the right HW/SW mix?
 - Should it include a lab?
 - Should it replace CpE390?
 - Should there be an integrated sequence with Switching Theory, Microprocessors, others?
- What changes would you make to the ECE curriculum?
- What changes would you make to Senior Design?

Homework #11

- Have a great summer/new job/new degree program