Back to the Future:
A Historical Perspective

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CS 3410, Spring 2013
Computer Science
Cornell University
Announcements

Prelim3 Results (w/out bonus)

• Mean 69.5 ± 12.9 (median 71.5), Max 95.5, out of 98
• Pickup in Homework Passback Room (305 Upson)
Announcements

Prelim3 Results (w/ bonus)

- Mean 69.8 ± 13.1 (median 72.3), Max 95.5, out of 98
- Pickup in Homework Passback Room (305 Upson)
Announcements

How to improve your grade?

*Submit a course evaluation and drop lowest homework score*

- To receive credit, Submit before Tuesday, May 7th
CacheRace Games Night was great!

- Winner: Team *Brycebits*

**Bryce Evans and Dominick Twitty**
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**Bryce Evans** and **Dominick Twitty**
Announcements

Final Project
Design Doc sign-up via CMS
  sign up Sunday, Monday, or Tuesday
  May 5\textsuperscript{th}, 6\textsuperscript{th}, or 7\textsuperscript{th}
Demo Sign-Up via CMS.
  sign up Tuesday, May 14\textsuperscript{th}
  or Wednesday, May 15\textsuperscript{th}
CMS submission due:
  • Due 6:30pm Wednesday, May 15\textsuperscript{th}
Goal for Today: Back to the Future

Can multiple entities interact with processor at once?
Back to the Future: Timesharing

Can multiple entities interact with processor at once?

Memory

Register file

Instruction Fetch

Instruction Decode

Instruction Execute

Memory Access

Write-Back
Back to the Future: Timesharing
Fernando J. Corbató (MIT)

- Known for pioneering time sharing systems and MULTICS operating system (later influence UNIX)
- Influences: Turing Award Recipient (1990).
  - "for his pioneering work in organizing the concepts and leading the development of the general-purpose, large-scale, time-sharing and resource-sharing computer systems"
- Corbató's Law: "Regardless of whether one is dealing with assembly language or compiler language, the number of debugged lines of source code per day is about the same!"
Back to the Future: Timesharing

1963 Timesharing: A Solution to Computer Bottlenecks

http://www.youtube.com/watch?v=3lkP7gZIprk&feature=youtu.be (cc)
http://www.youtube.com/watch?v=Q07PhW5sCEk&feature=youtu.be

- Reporter John Fitch at the MIT Computation Center in an extended interview with MIT professor of computer science Fernando J. Corbato
- The prime focus of the film is timesharing, one of the most important developments in computing