

Brief and Yet Bountiful the History of Computing, Why do Students Need it?

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Intro: Why Learning History?

- ◆ History has made us who we are
- ◆ Dense and compact with events and consequences. We can easily skip an era or two
- ◆ Provide correct and insightful perspectives
- ◆ Enthuse students who consequently will make greater contributions
- ◆ Learn not to make the same mistakes again

Current Offering Status

- ◆ Topic not included until Curricula 1991
- ◆ Only one lecture hour allocated in Curricula 2001
- ◆ Assigned as Social and Professional Issues
- ◆ Mostly covered briefly in intro CS courses
- ◆ Not many colleges are offering it
- ◆ Some offered in History dept.
- ◆ Rarely offered as a CS course

Books, Journals and Task Force

- ◆ Many books written since 1980
- ◆ IEEE Annals of History of Computing
- ◆ The International Federation of Information Processing (IFIP) Working Group 9.7 (WG9.7) established in 1992

Libraries, both Physical and Virtual

- ◆ Computer History Museum

- ◆ Virtual Museum of History of Computing

- ◆ National Archive for the History of Computing in UK

ShortComing

- ◆ Lack of a comprehensive textbook
- ◆ Such a book can be used throughout the curriculum. Teaching professionals could use the various subjects related to their area

Why History Not Taught

◆ Facts:

- Computer Science expanded rapidly
- Contents exploded
- Adding new topics means taking some away
- Computer Science ever changing, need to catch up with what is happening today.

Why History Not Taught

✦ Assumptions:

– The past already occurred, will not come back

– Present is more important and practical



The Past Will Influence our Future

- ◆ Encouraged by past successes
- ◆ We can build upon what has been done, rather than start from scratch
- ◆ Become more intelligent through learning from past mistakes
- ◆ If not learned, reflected, analyzed, mistakes will be repeated

Continued

- ◆ History will aid our claims. Historical facts will help students understand certain perspectives, instead of those perspectives being taught or given by us
- ◆ Understand the social climate and circumstances behind the historical inventions
- ◆ So that they can in the future recognize the right moment and make their own inventions

Continued

- ◆ Stereotype of CS students: know logic but cannot write. History course helps writing across curriculum, helps learn the basic skills to succeed in the real world
- ◆ Helps future educators to lighten the classroom
- ◆ Norm of other disciplines to have an independent history course

Lessons Learned (example)

- ◆ Apple had to redesign memory manager byte, which took three years
- ◆ IBM made a similar mistake in the 1960's
- ◆ If history had been studied by Andy Hertzfeld, it would not have been repeated

History at Upper-Division Level

- ◆ History is much more than a chronology of events
- ◆ Much more than the birthdates and names of historical figures
- ◆ Yet those perhaps are as much as can be done in a lower-division course

History at Upper-Division Level

- ◆ History is about the evolution of science and technology
- ◆ History is about the reasoning of why certain mistakes are made
- ◆ History is about the awakening to do things better in the future

History at Upper-Division Level

- ◆ History is about exploring the intertwined relationships among the different subjects

- ◆ History is about gaining a more comprehensive understanding of the discipline

- ◆ If history does not teach these, then it would fail its responsibility and lose its meaning

History at Upper-Division Level

- ✦ To fully and Really appreciate what history can teach us, students need to be well-prepared in
 - Programming
 - Data structure
 - Computer organization
 - Certain theories

History at Upper-Division Level

- ◆ Students need to have certain knowledge first
 - To understand the historical environment of key design decisions from a technical point of view
 - To integrate diverse topics of the discipline and understand the interrelationships

History at Upper-Division Level

- ◆ Students can better understand the marketing and business environment
- ◆ Help them with their choice of Capstone Project

History Course Objectives

- ◆ To provide the development of computing within the context of social, scientific, technological and business environments
- ◆ To connect computing history to other disciplines such as economics, sociology, science, mathematics, and technology
- ◆ To provide in-depth treatment of the history of computing within the core areas of hardware, software, theory and applications

Conclusion

- ◆ History of computing deserves more than a brief survey
- ◆ History of computing merits a three-credit hour full-blown course

Conclusion

- ✦ It will help students with their
 - Perspectives
 - Insights
 - Comprehensive understanding of the discipline
 - Avoiding making similar mistakes
 - Creativity
 - Inspiration
 - Reading and Writing
 - Teaching
 - Making sound decisions

Points to Ponder

- ◆ Do we want to know where we come from, how we get to where we are today, our past, our roots that is part of us?
- ◆ Do we want our posterities to dig and pound to find the path that leads them to where they are, to find the footsteps that their forefathers took?
- ◆ Can historians truly preserve our path and footsteps? Do we trust them?