Four Instructions to Help Explain Superscalar Out-of-Order

James C. Hoe Computer Architecture Lab (CALCM) Carnegie Mellon University



- Advanced graduate-level design course
 - 2 pre-req courses in computer architecture
 - 15~20 students (self-selected group)
 - Has been taken by a few seniors
 - Multiple design projects

Emphasis

- deep/true understanding
- hands-on implementation
- teamwork and time management

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Concluding Remarks

- Most unexpected outcome
 - everyone finished on time and liked it
- Most challenging design problem
 - fast branch rewind (register freelist)
- Most rewarding feedback
 - company recruiters loved it!!
- Project materials
 - http://www.ece.cmu.edu/~jhoe/superscalar



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