Exam 1 review

Misc. things

- Things you can bring
  - 3.5 Notecard
  - Scientific or standard calculator (no graphing or programmable)
- I will supply copy of the green sheet (same as the one on blackboard)
- 25 Multiple choice
- 7 Free Response

Multiple Choice

- Order from silicon to IC
- CPU Power consumption
- What affects performance of a program
- What types are RISC
  - ARM MIPS RasPi

MC

- What is a word?
- Which storage can be accessed the fastest
- Negative numbers in binary
- Bitwise shift (<< or >>)
- Stack pointers, frame pointers

MC

- Process to start a program

  A. compiler → assembler → linker → loader

  B. loader → compiler → linker → assembler

  C. compiler → linker → loader → assembler

  D. loader → linker → compiler → assembler

  E. linker → compiler → assembler → loader

MC

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MC

- How many registers in MIPS?
- Which instructions modify registers
- Pipeline Hazards, how to fix
- Write – back cache
- Write – through Cache

MC

- Magnetic disc vs flash memory
- A computer writes random values continuously to a single block of memory on a flash disk for an indefinite amount of time. Which failure is most likely to occur?
- A. The drive overheats
- B. The drive capacity is exceeded
- C. Some bits on the drive fail to change values
- D. The drive seek time increases
- E. The drive RPM decreases

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MC

- How is memory stored in DRAM?
- General CPU Pipelines
- Data, Control, Double Data, Load, Structure Hazards
- How to detect hazards (the Boolean statements)
- What does an ALU do

MC

- Number of Opcodes MIPS can support
- Spatial vs temporal locality

Free Response

- Computing MIPS
- Computing number of instructions
- Computing number of clock cycles

FR

- Power consumption
- Capacitive load

FR

- IC Yield
- Cost per die

FR

- Convert MIPS to machine code
- Convert MIPS to C

FR

- Processor Control Diagram
- Cache Write Through table
- Compute read time from HDD