Computer Architecture
CSL3020

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ISA

ISA is an abstract interface between hardware and software that encompasses all the information necessary to write a machine language program.

Example of instructions in an ISA

- Arithmetic instructions: add, sub, mul, div
- Logical instructions: and, or, not
- Data transfer/movement instructions

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Slide credit: SR Sarangi

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- **Generic**: Instructions should not be too specialized, e.g. add14 (adds a number with 14) instruction is too specialized.
- **Simplicity**: Should not be very complicated.

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- **CISC**: Complex Instruction Set Computer.

  CISC implements complex instructions that are irregular, take multiple operands, and implement complex functionalities. The number of instructions is large e.g. Intel x86