Compilers

Alignment

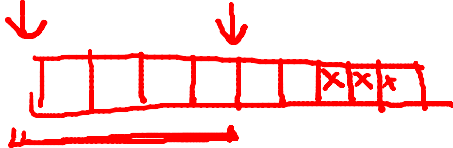Alex Aiken

- Most modern machines are 32 or 64 bit
  - 8 bits in a byte
  - 4 or 8 bytes in a word
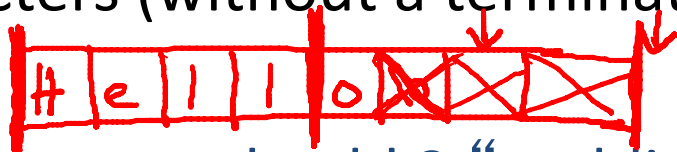 - Machines are either byte or word addressable

- Data is *word aligned* if it begins at a word boundary

- Most machines have some alignment restrictions
  – Or performance penalties for poor alignment

10x   slower

- Example: A string

"Hello"

Takes 5 characters (without a terminating \0)

- To word align next word, add 3 "padding" characters to the string

- The padding is not part of the string, it's just unused memory

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