UCLA

Introducing Regular Expressions

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Introducing Regular Expressions

- Textual Data Often Follows Very Precise Rules And Formats
- One Rule Can Apply To A Gargantuan Amount Of Data…

Introducing Regular Expressions

- The Expression Language Is Made Up Of Literal Text And MetaCharacters
  - Understanding The Power Of MetaCharacters Is Key

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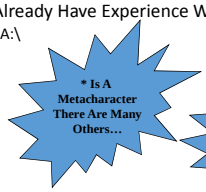

Introducing Regular Expressions

- I'll Describe Just Enough To Handle Our Robot Commands…
  - Character Matching Syntax
  - Quantifier Syntax Supports Repetition
- There Is ALot More Than I'm Describing
  - Things Can Get Very Complex Very Fast…

Character Matching Syntax

- A Text Character Matches Itself
  - A matches A, B matches B, etc.
  - May be concatenated dog matches dog
- **.** Is A MetaCharacter That Matches Any Single Character Except \n
  - b.d matches bad, bid, bed, b3d, bcd, b(d, etc.

Character Matching Syntax

- You Can Specify Sets Of Characters To Match
  - [aeiou] matches a single vowel in the set
  - [^aeiou] matches a character NOT in the set
  - [A-Z] use hyphen to match contiguous ranges
- You Can Also Specify Alternatives
  - (n|s|e|w) matches one of the letters in the set

Quantifier Syntax

- Quantifiers Specify Repetition Of Characters Or Groups
  - + Means One Or More
  - * Means Zero Or More
  - ? Means Zero Or One
  - {#} Means Exactly # Matches
  - {#,} Means AtLeast # Matches
  - {n,m} Means AtLeast N, No More Than M

Online Expression Tester

- A Nice Online Regular Expression Tester
  http://www.regexpal.com/
- Each Line Of Text Will Get Matched Against The Regular Expression
- Blue Text Means The String Matched The Regular Expression Pattern

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Roving Robot Command Regular Expression

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  - An Optional Leading + or -
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- `[+\-]*[1-9][0-9]?[0-9]?(ne|nw|se|sw|n|s|e|w)`