

TLUG Meeting

Grep and Regular Expressions

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Outline

- Grep
 - What is grep?
 - Why should you care?
 - Grep variants
- Regular Expressions
 - What are they?
 - Why should you care?
 - RegExp flavours
 - Examples

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What is grep?

- Pattern matching
- Part of standard UNIX, Linux, etc.
- Name origin
- UNIX grep
- GNU grep

History

- Glantz, 1957
 - Automated pattern matching
- Thompson, 1968
 - grep, NFA
- Aho, 1976
 - egrep: enhanced grep, DFA
- Present
 - egrep: extended regular expression
 - Combination of several algorithms

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Why should you care?

- The single most-used software engineering program
- Applications
 - Program comprehension
 - Software maintenance
 - Structured text databases
 - Indexing file systems
 - Searching natural text

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Grep Variants

- UNIX grep, fgrep, egrep
- GNU grep, fgrep, egrep
- ja-grep: Japanese grep
- lgrep: multilingual grep
- pcregrep: Perl-Compatible grep
- cgrep: context grep

Grep Variants

- `sgrep`: structure grep
- `agrep`: approximate grep
- `nr-grep`: nondeterministic reverse grep
- `ggrep`: Grouse grep
- `grep.py`: Python grep
- `freegrep`: grep under BSD license

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What are regular expressions?

- Patterns for matching strings
- Regular languages, context free grammars, and Turing machines
- Example of a regular language
- Example of a regular expression
- More?

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Why should you care?

- Text Editing
 - Interactive (e.g., vi) and batch (e.g., scripts)
- Applications
 - Program comprehension
 - Software maintenance
 - Structured text databases
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Regular Expression Flavours

- BRE: basic regular expressions
 - . * ^ \$ [...] \n (...) {n,m}
- ERE: extended regular expressions
 - BRE ? |
- PCRE: Perl-compatible regular expressions
 - *? {n,m}?
 - Many more
 - Most (all?) of Perl

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Examples

Thank You!

Question or comments?

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