

ANTLR IDE / GUI Discussion

Terence Parr
University of San Francisco
parrt@cs.usfca.edu
parrt@ANTLR.org

Grammar editor

- Highlight keywords
- Refactoring
 - left-factor decision
 - reduce lookahead requirement
 - introduce new rule
 - inline rule, ...
- Have grammar browser with rules, subrules
- Give sample tree as constructed by rule
- Dynamic symbol, keyword expansion
- Incremental parsing
- Local history / RCS?

Prototyping

- Test recognition without building app; done frequently to test language recognition before actions added
- 3.0 has a simple interpreted lexer/parser
- Should be able to build and show trees too

Nondeterminism “debugger”

- I want to know from decision, how can “ID SEMI” be matched ambiguously
- Show lookahead languages for any decision (even real LL phrase prefixes versus regular approximation)
- Show lookahead depth summary for various decisions
- Can it make suggestions about what nondeterminisms could be removed?

Run-time debugging

- highlight location, potential matches in grammar
- single-stepping
- token stream view
- parse tree view
- derivation
- Have events triggered from executing generated code ala Scott Stanchfield's ParseView?
- Use sockets to allow non-Java targets to use the Java-based IDE
- Batch mode for dumping "everything" any particular instant to a file for later review? Good for big inputs perhaps

Integrated with target language IDE(s)

- Eclipse, IntelliJ integration?
- Certainly don't want to force separate ANTLR IDE
- But plug-in architectures have problems
 - poorly documented?
 - moving target?
 - must use non-Java GUI elements in eclipse

Portability

- Write GUI in Java
- Java well-known even if GUI're a pain
- Easily connects with ANTLR 3.0 code

“Derive new grammar”

- Want a live cut-n-paste
- Can derive a new grammar by live copy and then get updates fed into your derivation
- Properly done with tool not ANTLR proper
- All attempts at composition are complicated
- Inheritance works well for some things, but not worth the complication in the ANTLR tool probably; used in tree parsers a lot
- Support for adding actions to existing grammar?

Access “grammar repository”

- Have a repository on antlr.org where the IDE can look for a specific grammar (like an IDE looking for plug-ins)