

編譯器設計

Project 1

Scala Lexical Definition

Scala : A Simple Scala Language

- ◆ Project 1
 - Use *lex* to specify the lexical definition
- ◆ Deadline
 - 1:20pm, May 19 (Tuesday)
- ◆ Character set
 - ASCII characters
 - No control characters are used
 - Case sensitive, i.e. Ident ≠ ident ≠ IDENT
- ◆ Tokens
 - Tokens to be passed to the parser
 - Tokens to be discarded

Tokens to Be Passed to the Parser

◆ Integer constants

- A sequence of one or more digits

◆ Boolean Constants

- Either *true* or *false*

◆ Real Constants

- A sequence of one or more digits containing a decimal point, optionally preceded by a sign (+, -), and optionally following by an E and exponent.

Tokens to Be Passed to the Parser

◆ String constants

- A sequence of zero or more ASCII characters appearing between double-quote (") delimiters
- A double-quote (") appearing with a string must be written twice
 - ◆ e.g. "aa""bb" denotes the string constant aa"bb

Example

```
/* Hello World Example */
object HelloWorld {
  def main ( ) {
    // Print text to the console
    println ("Hello World")
  }
}
```

```
1: /* Hello World Example */
<OBJECT>
<id: HelloWorld>
<'{'>
2: object HelloWorld {
<DEF>
<id: main>
<'('>
<')'>
<'{'>
3:   def main ( ) {
4:     // Print text to the console
<PRINTLN>
<'('>
<string:Hello World>
<')'>
5:     println ("Hello World")
<'}'>
6:   }
<'}'>
7: }
```

Symbol Table:
HelloWorld
main