# Token + lexeme: std::string + terminal: tokenType + next: Token\* + Token ()

# Regex

+ Token (std::string, tokenType, Token\*)

### Info

- + regex : regex\_t\*
- + terminal : tokenType
- + Info (regex\_t\* , tokenType)

## ReadInput

- + readInput (int, char): char
- + readInputFromFile ( const char\* ) : char

### Scanner

+ scan (const char\*) : Token\*

## ScannerTestSuite

- + s : Scanner\*
- + test\_setup\_code ()
- + test\_terminal\_boolKwd ()
- + test\_terminal\_trueKwd ()
- + test\_terminal falseKwd ()
- + test\_terminal\_whileKwd ( )
- + test\_terminal\_leftParen ()
- + test\_terminal\_rightParen ()
- + test\_terminal\_leftCurly ()
- + test\_terminal\_rightCurly ()
- + test\_terminal\_leftSquare ()
- + test\_terminal\_rightSquare ()
- + test\_terminal\_semiColon ()
- + test\_terminal\_colon ()
- + test\_terminal\_intKwd ()
- + test\_terminal\_floatKwd ()
- + test\_terminal\_stringKwd ()
- + test\_terminal\_matrixKwd ()
- + test\_terminal\_letKwd ()
- + test\_terminal\_inKwd ()
- + test\_terminal\_endKwd ()
- + test\_terminal\_ifKwd ()
- + test\_terminal\_thenKwd ( )
- + test\_terminal\_elseKwd ()
- + test\_terminal\_repeatKwd ( )
- + test\_terminal\_repeatKwd ()
- + test\_terminal\_printKwd ( )
- + test\_terminal\_toKwd ()
- + test\_terminal\_intConst ()
- + test\_terminal\_floatConst ()
- + test\_terminal\_stringConst ()
- + test\_terminal\_assign ()
- + test\_terminal\_plusSign ()
- + test\_terminal\_star ()
- + test\_terminal\_star ()
- + test\_terminal\_star ()

# Parser\_tests

- + Scanner
- + Parser
- + test\_setup\_code
- + test\_parse\_bad\_syntax
- + test\_parse\_sample\_1
- + test\_parse\_sample\_2
- + test\_parse\_sample\_3
- + test\_parse\_sample\_4
- + test\_parse\_sample\_5
- + test\_parse\_mysample
- + test\_parse\_forestLossV2

```
Parser
```

- + stokens : Token\*
- + s : Scanner\*
- + tokens : ExtToken\*
- + currToken : ExtToken\*
- + prevToken : ExtToken\*
- + parse (const char\*) : ParseResult
- + parseProgram (): ParseResult
- + parseDecl ( ) : ParseResult
- + parseStandardDecl (): ParseResult
- + parseMatrixDecl ( ) : ParseResult
- + parseStmts (): ParseResult
- + parseStmt ( ) : ParseResult
- + parseExpr (rbp : int) : ParseResult
- + parseTrueKwd (): ParseResult
- + parseFalseKwd (): ParseResult
- + parseIntConst ( ) : ParseResult
- + parseFloatConst (): ParseResult
- + parseStringConst ( ) : ParseResult
- + parseCharConst (): ParseResult
- + parseVariableName ( ) : ParseResult
- + parseNestedExpr (): ParseResult
- + parseNotExpr (): ParseResult
- + parseLetExpr (): ParseResult
- + parselfExpr(): ParseResult
- + parseAddition (ParseResult) : ParseResult
- + parseMultiplication (ParseResult) : ParseResult
- + parseSubtraction (ParseResult) : ParseResult
- + parseDivision (ParseResult) : ParseResult
- + parseRelationalExpr (ParseResult) : ParseResult
- + match (tokenType) : void
- + attemptMatch (tokenType) : bool
- + nextls (tokenType) : bool
- + nextToken ( ) : void
- + terminalDescription (tokenType) : std::string
- + makeErrorMsg (tokenType) : std::string
- + makeErrorMsgExpected (tokenType) : std::string
- + makeErrorMsg (const char\*) : std::string

