

CS3423 Programming Assignment 1

Khobragade Sanket Anil - cs15btech11020
Parinay Agrawal - cs15btech11039

August 22, 2017

1 COOL Compiler

COOL PARSER

The working of the grammars

1. The program is made of the classes i.e. list of classes (As the cool program is based on classes only).[program = class_list EOF]
 2. The list of class contains the classes separated by semicolons(';').[class_list = (class ;)*]
 3. Each class contains atleast a feature. Each class hence contains list of features.[class = ((method|variables) SEMICOLON)*]
 4. Feature list have features (features contains member variable and member functions).
- >Variable can be assigned at the time of declaration.
->Function can be void or have a return type and also can have arguments or without arguments.
->Argument list contains arguments seperated by COMMA(',').

Cool is a expression language hence any statement in the function will be expression.

Expression types are :

1. Block Expressions.
2. Let expressions.
3. Branch expressions.

Expressions contain :

1. function call of objects
2. ATSM is used in CASE
3. Calling constructor
4. if statement
5. while loop
6. multiply expression
6. divide espression
7. plus expression
8. minus expression
9. LT expr
10. LE expr
11. EQUALS expr
12. NOT expr
13. TILDE expr
14. ISVOID expr
15. OBJECTID ASSIGN expr
16. LBRACE block_expr_lst RBRACE
17. OBJECTID
18. INT_CONST

- 20. STR_CONST
- 21. BOOL_CONST
- 22. CASE expr OF branch_lst ESAC
- 23. NEW TYPEID
- 24. let expression
- 25. Block expressions

test1 :

It contains the correct code.

test2 :

Here function main should only contains expression separated by SEMICOLON.

test3 :

It have a missing closer of if statement hence error.

test4 :

Contains the wrong assignment as string is assigned to Int.

test5 :

Contain an error in using new.