JAVA COMPILER MANUAL

MINI JAVA COMPILER

(6TH Sem Compiler Project)

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CMPILATION STEPS:

1. Compile lex file

lex lex\_file.l

2. Compile yacc file

Bison -d yacc\_file.y

3. Compile generated files

Gcc lex.yy.c y.tab.c -lfl -ly

4. Run

./a.out < test.c

SYSTEM REQIUREMENT:

1. Java environment

2. Linux Platform ( preferred)

3. Bison / Yacc ( anyone)

4. Gcc compiler

5. Lex.

What it does:->

Detects syntactical errors and gives appropriate suggestion.

Tools Used : FLEX , BISON/YACC

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-----------------This compiler detects syntactical errors in a java file.-----------------------------

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It detects as follows:

->missing package name;

->missing import;

->incomplete import statement;

->missing class keyword and name;

->missing parent class if any;

->missing variable name;

->missing curly braces;

->missing semicolon;

->missing paranthesis in method name, while, if, for, do while

->missing parameters of method;

->missing initializers(array initializer if initialized);

->missing end expression in initiaizers

->missing exceptions thrown;

->for loop errors:

->wrong initialization;

->wrong predicate;

->wrong incrementation;

->missing initializer/predicate/incrementation;

->incomplete mathematical expression {+, -, \*, /};

->incomplete left/right operands in logical operators{ <, > };

->missing expression in variable declarator statement;

->constructor errors:

->paranthesis missing;

->expected parameters;

->expression ',' missing in parameters;

->Jump statements errors:

->missing semicolon in break, continue, return, throw;

->try without catch

->catch without exception

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------------------------ISSUES AND CHALLANGES:---------------------------------

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Syntactic:

->cannot detect missing both opening and closing paranthesis in one statement;

Symantic:

->type specifiers not detected;

->semantic errors;

->variables used without declaration;

->wrong keyword;

->missing return type;

->missing prototype;

->scope of variables and methods;

->runtime errors{meemory allocation};

->missing object instantiate;

--------------------------------------------------------TEST CASE---------------------------------------------------------------

----test.java-----

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package ja;

import java.\*;

public class b extends a {

int a = { 10,3,4 };

public b (int x)

{

int x

}

public int meth1 ( int x,) {

}

public void meth int x, ) throws {

if (a <b) {

for ( i = 0 ; i< 10 ;i= i+){

}

while a < 10) {

a = c \* ;

continue;

}

}

this.meth1 ( n )

try {

}

catch ( Exception e ) { }

}

public static void main(){

int ;

}

};

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DETECTED ERROR

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Expected semicolon : 13

Expected Parameter : 15

Expected opening braces of method : 18

Expected Parameter : 18

Expected exception : 18

Incomplete Expression : 20

Expected ( at the end of expression in line 23

Incomplete Expression : 24

Expected { : 29

Expected } : 35

variable name missing : 36