

**WACC Test Preview**

**TestSummary.txt: 1/1**

**ka1023(j2)**

```
1: WACC Test Preview: Summary for ka1023 of j2
2: -----
3:
4:   Autotester:
5:     Make Success:    1 / 1
6:     Valid Tests:    228 / 228
7:     Syntax Tests:   59 / 59
8:     Semantic Tests: 78 / 78
9:
10: Git Repo: git@gitlab.doc.ic.ac.uk:lab2425_spring/WACC_56.git
11: Commit ID: c3f79
```

```

1: === Start of Test ===
2:
3: Building the compiler.
4: ----- make stdout -----
5: scala --power package . --server=false --jvm system --graalvm-jvm-id graalvm-java21 --native-image --force -o wacc-compiler
6: Warning: The option '-H:ReflectionConfigurationFiles=/tmp/9035968333295668320.json' is experimental and must be enabled via '-H:+UnlockExperimentalVMOptions' in the future.
7: Warning: The option '-H:Name=wacc-compiler' is experimental and must be enabled via '-H:+UnlockExperimentalVMOptions' in the future.
8: Warning: The option '-H:Path=/tmp/d20250207-34-xhbzw8' is experimental and must be enabled via '-H:+UnlockExperimentalVMOptions' in the future.
9: Warning: Please re-evaluate whether any experimental option is required, and either remove or unlock it. The build output lists all active experimental options, including where they come from and possible alternatives. If you think an experimental option should be considered as stable, please file an issue.
10: =====
11: GraalVM Native Image: Generating 'wacc-compiler' (executable)...
12: -----
13: For detailed information and explanations on the build output, visit:
14: https://github.com/oracle/graal/blob/master/docs/reference-manual/native-image/BuildOutput.md
15: -----
16: [1/8] Initializing... (16.5s @ 0.09GB)
17: Java version: 21.0.2+13, vendor version: GraalVM CE 21.0.2+13.1
18: Graal compiler: optimization level: 2, target machine: x86-64-v3
19: C compiler: gcc (linux, x86_64, 13.2.0)
20: Garbage collector: Serial GC (max heap size: 80% of RAM)
21: 2 user-specific feature(s):
22: - com.oracle.svm.polyglot.scala.ScalaFeature
23: - com.oracle.svm.thirdparty.gson.GsonFeature
24: -----
25: 3 experimental option(s) unlocked:
26: - '-H:Name' (alternative API option(s): -o wacc-compiler; origin(s): command line)
27: - '-H:ReflectionConfigurationFiles' (origin(s): command line)
28: - '-H:Path' (origin(s): command line)
29: -----
30: Build resources:
31: - 2.88GB of memory (75.6% of 3.81GB system memory, determined at start)
32: - 4 thread(s) (100.0% of 4 available processor(s), determined at start)
33: [2/8] Performing analysis... [*****] (34.5s @ 0.41GB)
34:   5,472 reachable types (79.6% of 6,876 total)
35:   6,935 reachable fields (59.5% of 11,650 total)
36:   27,636 reachable methods (44.0% of 62,802 total)
37:   1,508 types, 132 fields, and 870 methods registered for reflection
38:   57 types, 57 fields, and 52 methods registered for JNI access
39:   4 native libraries: dl, pthread, rt, z
40: [3/8] Building universe... (5.2s @ 0.50GB)
41: [4/8] Parsing methods... [**] (3.1s @ 0.65GB)
42: [5/8] Inlining methods... [****] (2.9s @ 0.42GB)
43: [6/8] Compiling methods... [*****] (22.6s @ 0.78GB)
44: [7/8] Layouting methods... [**] (2.6s @ 0.60GB)
45: [8/8] Creating image... [**] (3.6s @ 0.80GB)
46:   8.56MB (40.67%) for code area: 15,599 compilation units
47:   11.13MB (52.87%) for image heap: 125,253 objects and 51 resources
48:   1.36MB ( 6.46%) for other data
49:   21.04MB in total
50: -----
51: Top 10 origins of code area: Top 10 object types in image heap:
52:   4.16MB java.base          2.56MB byte[] for code metadata
53:   1.15MB parsley_3-5.0.0-M10.jar 2.27MB byte[] for java.lang.String
54:   1.13MB scala-library-2.13.15.jar 1.39MB java.lang.Class
55:   994.71kB svm.jar (Native Image) 1.23MB java.lang.String
56:   686.63kB library.jar        470.25kB com.oracle.svm.core.hub.DynamicHubCompanion
57:   113.71kB java.logging       287.80kB byte[] for general heap data
58:   65.00kB org.graalvm.nativeimage.base 266.09kB byte[] for reflection metadata
59:   47.59kB jdk.proxy1         248.86kB java.util.HashMap$Node
60:   45.84kB jdk.proxy3         247.27kB java.lang.String[]

```

**WACC Test Preview****testResults.txt: 2/2**

ka1023(j2)

```
61: 27.06kB jdk.internal.vm.ci
62: 69.50kB for 8 more packages
63: -----
64: Recommendations:
65: INIT: Adopt '--strict-image-heap' to prepare for the next GraalVM release.
66: HEAP: Set max heap for improved and more predictable memory usage.
67: CPU: Enable more CPU features with '-march=native' for improved performance.
68: -----
69:           9.1s (9.8% of total time) in 125 GCs | Peak RSS: 1.45GB | CPU load: 3.08
70: -----
71: Produced artifacts:
72: /tmp/d20250207-34-xhbzw8/wacc-compiler (executable)
73: -----
74: Finished generating 'wacc-compiler' in 1m 31s.
75: -----
76:
77: Now Running Front-End Tests...
78: === End of Test ===
79:
```

----- VALID TESTS OUTPUT -----

.....  
Found 231 potential tests.

(test file processing completed)

Error Messages:

.....  
Passed 228/228

----- VALID Test Errors -----

----- SYNTAX TESTS OUTPUT -----

Found 59 potential tests.

(test file processing completed)

Error Messages:

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/array/arrayExpr.wacc

===== Frontend =====

Starting parsing... finished!

Error detected during compilation!

Syntax error in arrayExpr.wacc --{12, 23}--

unexpected ++
expected ";" or end
array concatenation is not supported by WACC

```
10|
11|begin
12| int[] b = [1, 2, 3] ++ [4] ;
13| println b[3]
14|end
```

=====

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/basic/badComment.wacc

===== Frontend =====

Starting parsing... finished!

Error detected during compilation!

Syntax error in badComment.wacc --{12, 7}--

unexpected comma
expected array index or assignment

```
10|
11|begin
12| oops, this is supposed to be a comment
13| print "Hello World!\n"
14|end
```

=====

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/basic/badComment2.wacc

===== Frontend =====

Starting parsing... finished!

Error detected during compilation!

Syntax error in badComment2.wacc --{12, 20}--

unexpected identifier I
expected array index or assignment

```
10|
11|begin
12| int x = 10 ; can I put in-line comments after the ';'?
13| x = 20 ; #yes, but only if you remember to use the '#' character!
14| exit x
```

=====

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/basic/badEscape.wacc

===== Frontend =====

Starting parsing... finished!

Error detected during compilation!

Syntax error in badEscape.wacc --{12, 14}--

unexpected "H"
expected end of escape sequence
valid escape sequences are "\", "\", \\0, \\\\", \\b, \\f, \\n, \\r or \\t

```
10|
11|begin
12| char a = '\H'
13|end
14|
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/basic/beginNoend.wacc
===== Frontend =====
```

```
Starting parsing... finished!
Error detected during compilation!
```

```
Syntax error in beginNoend.wacc --{12, 1}--
unexpected end of file
expected ";" or end
a scope, function or the main body is unclosed
```

```
10|
11|begin skip
12|
13|^.-----
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/basic/bgnErr.wacc
===== Frontend =====
```

```
Starting parsing... finished!
Error detected during compilation!
```

```
Syntax error in bgnErr.wacc --{11, 1}--
unexpected identifier bgn
expected begin
all program body and function declarations must be within 'begin' and 'end'
```

```
9|# Program:
10|
11|bgn skip end
12|
13|^.-----
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/basic/multipleBegins.wacc
===== Frontend =====
```

```
Starting parsing... finished!
Error detected during compilation!
```

```
Syntax error in multipleBegins.wacc --{15, 1}--
unexpected keyword begin
expected end of file
all scopes have already been closed
```

```
13|end
14|
15|begin
16|skip
17|end
18|^.-----
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/basic/noBody.wacc
===== Frontend =====
```

```
Starting parsing... finished!
Error detected during compilation!
```

```
Syntax error in noBody.wacc --{11, 7}--
unexpected keyword end
expected function declaration or statement
missing main program body
```

```
9|# Program:
10|
11|begin end
12|
13|^.-----
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/basic/skpErr.wacc
===== Frontend =====
```

```
Starting parsing... finished!
Error detected during compilation!
```

```
Syntax error in skpErr.wacc --{11, 11}--
unexpected keyword end
```

```
expected array index or assignment
```

```
9|# Program:  
10|  
11|begin skip end  
12|.....^~^.....
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/basic/unescapedChar.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in unescapedChar.wacc -={12, 13}=-  
unexpected """  
expected escape sequence or graphic character
```

```
10|  
11|begin  
12|.....  
13| char a = ""  
14|.....^.....
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/expressions/missingOperand1.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in missingOperand1.wacc -={12, 11}=-  
unexpected operator *  
expected array literal, expression, fst, function call, pair literal or snd  
expressions may be literals, identifiers or operators applied to expressions, null, parenthesised expressions and array indexing operations
```

```
10|  
11|begin  
12|.....  
13| int b = * 6  
14|.....^.....
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/expressions/missingOperand2.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in missingOperand2.wacc -={13, 1}=-  
unexpected keyword end  
expected "(", -, boolean literal, character literal, identifier, integer literal, null, string literal or unary operator
```

```
11|begin  
12|.....  
13| int b = 2 -  
14|.....^.....
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/expressions/printLnConcat.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in printLnConcat.wacc -={12, 22}=-  
unexpected space  
expected digit
```

```
10|  
11|begin  
12|.....  
13| println "Hello " ++ "World!"  
14|.....^.....
```

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/function/badlyNamed.wacc  
Frontend

```
=====  
Starting parsing... finished!  
Error detected during compilation!
```

```
Syntax error in badlyNamed.wacc -={12, 7}=-  
unexpected opening bracket  
expected array index or assignment
```

```
10  
11 begin  
12   intf() is  
13   return 42  
14 end
```

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/function/badlyPlaced.wacc

```
=====
Starting parsing... finished!
Error detected during compilation!
```

```
Syntax error in badlyPlaced.wacc -{11, 1}-
  unexpected keyword int
  expected begin
    all program body and function declarations must be within 'begin' and 'end'
```

```
9 # Program:  
10  
11 int foo()  
12     ^^^.....  
13     return 4  
14 end
```

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/function/funcExpr.wacc

```
=====
Starting parsing... finished!
Error detected during compilation!
```

Syntax error in funcExpr.wacc -={15, 12}=-  
unexpected opening bracket  
function calls may not appear in expressions and must use 'call'

```
13     return 0
14   end
15   .....
16   int x = f(
17   .....
```

-----  
Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/function/funcExpr2.wacc

=====  
Starting parsing... finished!

Syntax error in funcExpr2.wacc -={17, 14}=-  
unexpected opening bracket  
function calls may not appear in expressions and must use [call]

```
15  println "init x" ;
16  int x = 2 ;
17  .....
18  while x > f(x) do
19  .....
20  println x ;
```

=====  
Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/function/functionConditionalNoReturn.wacc

===== Frontend =====

Starting parsing... finished!

Error detected during compilation!

```
Syntax error in functionConditionalNoReturn.wacc -={11, 3}=-  
function `f` is missing a return on all exit paths
```

```
9  
10 begin  
11   bool f ( bool b ) is  
12     if ( b ) then  
13       return b
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/function/functionEndingNotReturn.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in functionEndingNotReturn.wacc -={11, 3}=-  
function `f` is missing a return on all exit paths
```

```
9  
10 begin  
11   int f() is  
12     return 2;  
13   println "How on Earth did we get here?"
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/function/functionLateDefine.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in functionLateDefine.wacc -={17, 8}=-  
unexpected function declaration  
all functions must be declared at the top of the main block
```

```
15 int x = call f();  
16 println x ;  
17 int g() is  
18   return 1  
19 end
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/function/functionMissingCall.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in functionMissingCall.wacc -={15, 12}=-  
unexpected opening bracket  
function calls may not appear in expressions and must use 'call'
```

```
13   return 0  
14 end  
15 int x = f()  
16 end  
17
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/function/functionMissingPType.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in functionMissingPType.wacc -={12, 9}=-  
unexpected identifier x  
expected closing bracket or type
```

```
10  
11 begin  
12   int f(x) is  
13     return 0
```

```
14| end
```

=====

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/function/functionMissingParam.wacc

===== Frontend =====

Starting parsing... finished!  
Error detected during compilation!

Syntax error in functionMissingParam.wacc -{12, 22}=-  
unexpected closing bracket  
expected type

```
10|  
11|begin  
12|.....  
13| int f(int x, int y,) is  
14|.....^.....  
14| end
```

=====

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/function/functionMissingType.wacc

===== Frontend =====

Starting parsing... finished!  
Error detected during compilation!

Syntax error in functionMissingType.wacc -{12, 4}=-  
unexpected opening bracket  
expected array index or assignment

```
10|  
11|begin  
12|.....  
13| f() is  
14|.....^.....  
14| return 0  
14| end
```

=====

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/function/functionNoReturn.wacc

===== Frontend =====

Starting parsing... finished!  
Error detected during compilation!

Syntax error in functionNoReturn.wacc -{11, 3}=-  
function `f` is missing a return on all exit paths

```
9|  
10|begin  
11|.....  
11| int f() is  
11|.....^.....  
12|.....^.....  
12| bool b = true  
13| end
```

=====

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/function/functionReturnInLoop.wacc

===== Frontend =====

Starting parsing... finished!  
Error detected during compilation!

Syntax error in functionReturnInLoop.wacc -{12, 3}=-  
function `f` is missing a return on all exit paths

```
10|  
11|begin  
12|.....  
12| int f(int n) is  
12|.....^.....  
13|.....^.....  
13| int i = 0;  
14|.....^.....  
14| while i < n do
```

=====

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/function/functionScopeDef.wacc

===== Frontend =====

Starting parsing... finished!  
Error detected during compilation!

```
Syntax error in functionScopeDef.wacc -={13, 10}=-  
unexpected function declaration  
all functions must be declared at the top of the main block
```

```
11 begin  
12  begin  
13  .....  
13  int f() is  
14  .....^  
14  return 0  
15 end
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/function/mutualRecursionNoReturn.wacc  
===== Frontend =====  
Starting parsing... finished!  
Error detected during compilation!
```

```
Syntax error in mutualRecursionNoReturn.wacc -={23, 3}=-  
function `r2` is missing a return on all exit paths
```

```
21 end  
22 .....  
23 int r2(int y) is  
24 .....^.....  
24  print "r2: received " ;  
25  println y ;
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/function/noBodyAfterFuncs.wacc  
===== Frontend =====  
Starting parsing... finished!  
Error detected during compilation!
```

```
Syntax error in noBodyAfterFuncs.wacc -={15, 1}=-  
unexpected keyword end  
expected function declaration or statement  
missing main program body
```

```
13 return 0  
14 end  
15 .....  
15 end  
16 .....  
17
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/function>thisIsNotC.wacc  
===== Frontend =====  
Starting parsing... finished!  
Error detected during compilation!
```

```
Syntax error in thisIsNotC.wacc -={12, 13}=-  
unexpected pointer type  
expected array type or identifier  
pointers are not supported by WACC
```

```
10 begin  
11 .....  
12 int f(int *x) is  
13 .....^.....  
13  *x = *x + 1;  
14  return 0
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/if/ifNoElse.wacc  
===== Frontend =====  
Starting parsing... finished!  
Error detected during compilation!
```

```
Syntax error in ifNoElse.wacc -={15, 3}=-  
unexpected keyword fi  
expected ";" or else  
all if statements must have an else clause
```

```
13 then  
14 skip  
15 .....
```

```
15|| fi  
16||...^.....  
17||
```

=====

Finished with exit code 100

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/if/ifNofi.wacc
```

```
===== Frontend =====
```

Starting parsing... finished!  
Error detected during compilation!

Syntax error in ifNofi.wacc -={17, 1}=-  
unexpected keyword end  
expected ";" or fi  
unclosed if statement

```
15|| else  
16|| skip  
17||...^.....  
18||
```

=====

Finished with exit code 100

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/if/ifNothen.wacc
```

```
===== Frontend =====
```

Starting parsing... finished!  
Error detected during compilation!

Syntax error in ifNothen.wacc -={13, 3}=-  
unexpected keyword else  
expected binary operator or then  
the condition of an if statement must be closed with 'then'

```
11|begin  
12| if true  
13| else  
14| skip  
15| fi
```

=====

Finished with exit code 100

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/if/ifiErr.wacc
```

```
===== Frontend =====
```

Starting parsing... finished!  
Error detected during compilation!

Syntax error in ifiErr.wacc -={12, 7}=-  
unexpected keyword true  
expected array index or assignment

```
10|  
11|begin  
12| ifi true  
13| then  
14| skip
```

=====

Finished with exit code 100

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/literals/charLiteralSingle.wacc
```

```
===== Frontend =====
```

Starting parsing... finished!  
Error detected during compilation!

Syntax error in charLiteralSingle.wacc -={13, 16}=-  
unexpected "e"  
expected end of character literal

```
11|  
12|begin  
13| char c = 'Hello Jamie'  
14|end
```

=====

Finished with exit code 100

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/literals/stringLiteralNoNewlines.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Error detected during compilation!
```

```
Syntax error in stringLiteralNoNewlines.wacc -={12, 22}=-  
unexpected newline  
expected end of string literal or graphic ASCII string character
```

```
10|begin  
11|.....  
12|..... string s = "hello  
13|.....^.....  
14|world"  
15|end
```

```
=====  
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/literals/stringLiteralOnlyAscii.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Error detected during compilation!
```

```
Syntax error in stringLiteralOnlyAscii.wacc -={12, 18}=-  
unexpected "é"  
expected end of string literal or graphic ASCII string character
```

```
10|begin  
11|.....  
12|..... string s = "héllø world  
13|.....^.....  
14|end  
15|
```

```
=====  
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/pairs/badLookup01.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Error detected during compilation!
```

```
Syntax error in badLookup01.wacc -={13, 11}=-  
unexpected keyword fst  
expected expression  
expressions may be literals, identifiers or operators applied to expressions, null, parenthesised expressions and array indexing operations  
tuple extraction is only allowed in assignments
```

```
11|begin  
12|..... pair(int, char) p = newpair(10, 'a') ;  
13|.....^.....  
14|println fst p  
15|.....^.....  
16|end  
17|
```

```
=====  
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/pairs/badLookup02.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Error detected during compilation!
```

```
Syntax error in badLookup02.wacc -={13, 11}=-  
unexpected keyword snd  
expected expression  
expressions may be literals, identifiers or operators applied to expressions, null, parenthesised expressions and array indexing operations  
tuple extraction is only allowed in assignments
```

```
11|begin  
12|..... pair(int, char) p = newpair(10, 'a') ;  
13|.....^.....  
14|println snd p  
15|.....^.....  
16|end  
17|
```

```
=====  
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/pairs/elemOfNonPair.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Error detected during compilation!
```

```
Syntax error in elemOfNonPair.wacc --{15, 15}--
unexpected opening bracket
expected fst, identifier or snd
```

```
13| int a = 5;
14| int b = fst a;
15| int c = snd (5 + 'a')
16|end
17|
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/pairs/fstNull.wacc
```

```
===== Frontend =====
Starting parsing... finished!
Error detected during compilation!
```

```
Syntax error in fstNull.wacc --{12, 15}--
unexpected keyword null
expected fst, identifier or snd
```

```
10|begin
11|...
12| int i = fst null;
13| println i
14|end
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/pairs/noNesting.wacc
```

```
===== Frontend =====
Starting parsing... finished!
Error detected during compilation!
```

```
Syntax error in noNesting.wacc --{12, 14}--
unexpected pair type
pair types may not be nested in WACC
```

```
10|begin
11|...
12| pair(pair(int, string), char) p = null
13|end
14|
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/pairs/sndNull.wacc
```

```
===== Frontend =====
Starting parsing... finished!
Error detected during compilation!
```

```
Syntax error in sndNull.wacc --{12, 15}--
unexpected keyword null
expected fst, identifier or snd
```

```
10|begin
11|...
12| int i = snd null;
13| println i
14|end
```

```
=====
```

```
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/print/printlnCharArry.wacc
```

```
===== Frontend =====
Starting parsing... finished!
Error detected during compilation!
```

```
Syntax error in printlnCharArry.wacc --{12, 11}--
unexpected array literal
expected expression
```

```
expressions may be literals, identifiers or operators applied to expressions, null, parenthesised expressions and array indexing operations
array literals can only appear in assignments
```

```
10|begin
11|...
```

```
12|| println ['H','e','l','l','o',' ','W','o','r','l','d','!'] ||  
13||end  
14||
```

=====  
Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/sequence/doubleSeq.wacc

===== Frontend =====

Starting parsing... finished!  
Error detected during compilation!

Syntax error in doubleSeq.wacc -={12, 8}=-  
unexpected ";"  
expected statement  
semi-colons are not statements and can only be used individually to separate statements

```
10||begin  
11||....  
12|| skip;;  
13||....^.....  
14||skip  
15||end
```

=====  
Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/sequence/emptySeq.wacc

===== Frontend =====

Starting parsing... finished!  
Error detected during compilation!

Syntax error in emptySeq.wacc -={11, 7}=-  
unexpected ";"  
expected function declaration or statement  
semi-colons are not statements and can only be used individually to separate statements  
missing main program body

```
9||# Program:  
10||....  
11||begin ; end  
12||....^.....
```

=====  
Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/sequence/endSeq.wacc

===== Frontend =====

Starting parsing... finished!  
Error detected during compilation!

Syntax error in endSeq.wacc -={11, 15}=-  
unexpected ";"  
semi-colons cannot follow the end of the program

```
9||# Program:  
10||....  
11||begin skip end;  
12||....^.....
```

=====  
Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/sequence/extraseq.wacc

===== Frontend =====

Starting parsing... finished!  
Error detected during compilation!

Syntax error in extraseq.wacc -={11, 13}=-  
unexpected keyword end  
expected statement

```
9||# Program:  
10||....  
11||begin skip; end  
12||....^.....
```

=====  
Finished with exit code 100

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/sequence/missingSeq.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in missingSeq.wacc -={13, 3}=-
```

```
unexpected keyword skip  
expected ";" or end
```

```
11 begin  
12 skip  
13 skip  
14 end  
15
```

```
=====  
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/variables/badintAssignments.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in badintAssignments.wacc -={12, 14}=-
```

```
unexpected integer 0  
expected ";", binary operator or end
```

```
10  
11 begin  
12 int x = 22 0 ;  
13 int y = 1A4  
14 end
```

```
=====  
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/variables/badintAssignments1.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in badintAssignments1.wacc -={12, 14}=-
```

```
unexpected integer 0  
expected ";", binary operator or end
```

```
10  
11 begin  
12 int x = 22 0  
13 end  
14
```

```
=====  
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/variables/badintAssignments2.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in badintAssignments2.wacc -={12, 12}=-
```

```
unexpected identifier A4  
expected ";", binary operator, digit or end
```

```
10  
11 begin  
12 int y = 1A4  
13 end  
14
```

```
=====  
Finished with exit code 100
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/syntaxErr/variables/bigIntAssignment.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Error detected during compilation!
```

```
Syntax error in bigIntAssignment.wacc -={12, 11}=-
```

```
literal is not within the range -2147483648 to 2147483647
```

```
10
```

```
11|begin  
12| int x = 2200000000  
13|end  
14|
```

=====  
Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/variables/varNoName.wacc

===== Frontend =====  
Starting parsing... finished!  
Error detected during compilation!

Syntax error in varNoName.wacc --{13, 7}--  
unexpected "="  
expected array type or identifier

```
11|begin  
12| int = 42  
13|end  
14|  
15|
```

=====  
Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/while/donoErr.wacc

===== Frontend =====  
Starting parsing... finished!  
Error detected during compilation!

Syntax error in donoErr.wacc --{14, 3}--  
unexpected identifier do  
expected ";" or done  
unclosed while loop

```
12| while false do  
13| skip  
14| dono  
15|end  
16|
```

=====  
Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/while/dooErr.wacc

===== Frontend =====  
Starting parsing... finished!  
Error detected during compilation!

Syntax error in dooErr.wacc --{12, 17}--  
unexpected "o"  
expected end of do

```
10|begin  
11|while false do  
12| skip  
13| done  
14|
```

=====  
Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/while/whilErr.wacc

===== Frontend =====  
Starting parsing... finished!  
Error detected during compilation!

Syntax error in whilErr.wacc --{12, 8}--  
unexpected keyword false  
expected array index or assignment

```
10|begin  
11|whil false do  
12| skip  
13| done  
14|
```

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/while/whileNodo.wacc

Starting parsing... finished!  
Errors detected during compilation:

Error detected during compilation!

Syntax error in whileNodo.wacc -={13, 5}=  
unexpected keyword skip

```
unexpected keyword skip
expected binary operator or do
the condition of a while loop must be closed with 'do'
```

```
11||begin
12||  while false
13||  .....
13||  skip
14||  ....^~~~....
14||  done
15||end
```

Finished with exit code 100

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/syntaxErr/while/whileNodone.wacc

-----  
Simplifying the equation, we get

Starting parsing... finished!

Syntax error in whileNode.vacc -[14, 1]-

```
yntax error in whitespace  
unexpected keyword end  
expected ";" or done  
unclosed while loop
```

```
12|     while false do
13|         skip
14|     end
15|     ^^^.....
```

Finished with exit code 100

Passed 59/59

----- SYNTAX Test Errors -----

----- SEMANTIC TESTS OUTPUT -----

Found 78 potential tests.  
.....  
(test file processing completed)

Error Messages:

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/I0/readTypeErr.wacc  
===== Frontend =====  
Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!

Type error in readTypeErr.wacc -={13, 8}=-  
unexpected bool  
expected char or int

```
10
11 begin
12   bool b = true ;
13   .....
13   read b ;
14   .....^.
14   println b
15 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/array/arrayIndexComplexNotInt.wacc  
===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Errors detected during compilation!

Type error in arrayIndexComplexNotInt.wacc -={14, 17}=-  
unexpected string  
expected int

```
11
12 begin
13   int[] a = [1, 2];
13   .....
14   int b = a[1 - "horse"];
14   .....^.
15   int c = a[!false]
16 end
```

Type error in arrayIndexComplexNotInt.wacc -={15, 13}=-  
unexpected bool  
expected int

```
12 begin
13   int[] a = [1, 2];
14   int b = a[1 - "horse"];
14   .....
15   int c = a[!false]
15   .....^.
16 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/array/arrayIndexNotInt.wacc  
===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!

Type error in arrayIndexNotInt.wacc -={14, 13}=-  
unexpected string  
expected int

```
11
12 begin
13   int[] a = [1, 2];
```

```
14 int b = a["horse"]
15 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/array/arrayMultipleIndexError.wacc

===== Frontend =====

Starting parsing... finished!

Starting renaming... finished!

Starting type checking... finished!

Error detected during compilation!

Type error in arrayMultipleIndexError.wacc -={19, 14}=-

```
unexpected int[]
expected int[][][]
can only index sameAsA as many times as it has dimensions which is 1
```

```
16 int[][] ab = [a, b];
17
18 int[] sameAsA = ab[0];
...
19 int oops = sameAsA[0][1]
...
20 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/array/badIndex.wacc

===== Frontend =====

Starting parsing... finished!

Starting renaming... finished!

Starting type checking... finished!

Error detected during compilation!

Type error in badIndex.wacc -={14, 11}=-

```
unexpected int[]
expected at least 2-dimensional array
can only index a as many times as it has dimensions which is 1
```

```
11 begin
12
13 int[] a = [1];
...
14 println a[1][2]
...
15 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/array/indexUndefIdent.wacc

===== Frontend =====

Starting parsing... finished!

Starting renaming... finished!

Starting type checking... finished!

Error detected during compilation!

Scope error in indexUndefIdent.wacc -={13, 12}=-

variable horse has not been declared in current scope

```
10 # Program:
11 begin
12
13 char c = horse[2]
...
14 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/array/mixingTypesInArrays.wacc

===== Frontend =====

Starting parsing... finished!

Starting renaming... finished!

```
Starting type checking... finished!
Error detected during compilation!
```

```
-----  
Type error in mixingTypesInArrays.wacc -={18, 13}=-
```

```
expected int[]
array literal mismatch
literal contains mix of {int,char}
```

```
15| end
16|
17| char f = call five();
18| int[] a = [1, f]
19| end
```

```
=====  
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/array/noArrayCovariance.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
-----  
Type error in noArrayCovariance.wacc -={14, 18}=-
```

```
unexpected char[][][]
expected string[]
```

```
11|
12|begin
13| char[][] acs = [] ;
14| string[] bad = acs
15|end
```

```
=====  
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/array/noStringIndex.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
-----  
Type error in noStringIndex.wacc -={13, 12}=-
```

```
unexpected string
expected char[]
str is not an array type so cannot be indexed
```

```
10|
11|begin
12| string str = "hello world";
13| char x = str[0]
14|end
```

```
=====  
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/array/nonMatchingArrays.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
-----  
Type error in nonMatchingArrays.wacc -={15, 13}=-
```

```
unexpected int[][][]
expected int[]
```

```
12|begin
13| int[] a = [1, 2];
14| int[][] aa = [a, a];
15| int[] b = aa
```

```
16 end
```

```
=====  
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/array/wrongArrayDimension.wacc  
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
Type error in wrongArrayDimension.wacc -={14, 14}=-
```

```
unexpected int[]  
expected int[][][]  
can only index a as many times as it has dimensions which is 1
```

```
11 begin  
12   int[] a = [1, 2];  
13   .....  
14   int oops = a[1][2][3]  
15 end
```

```
=====  
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/array/wrongArrayType.wacc  
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
Type error in wrongArrayType.wacc -={13, 31}=-
```

```
unexpected char[]  
expected int[]
```

```
10 # Program:  
11  
12 begin  
13   int[] should_be_int_array = ['a', 'b', 'c']  
14 end
```

```
=====  
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/exit/badCharExit.wacc  
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
Type error in badCharExit.wacc -={12, 8}=-
```

```
unexpected char  
expected int
```

```
9 # Program:  
10  
11 begin  
12   exit 'a'  
13 end
```

```
=====  
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/exit/exitNonInt.wacc  
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
Type error in exitNonInt.wacc --{13, 8}--
unexpected char
expected int
```

```
10
11 begin
12   char x = 'f' ;
13   .....
14 exit x
15   .....
16 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/exit/globalReturn.wacc
```

```
===== Frontend =====
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
Type error in globalReturn.wacc --{12, 3}--
return outside of function is not allowed
```

```
9 # Program:
10
11 begin
12   .....
13   return 42 ;
14   .....
15   println "should not get here"
16 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/exit/returnsInMain.wacc
```

```
===== Frontend =====
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Errors detected during compilation!
```

```
Type error in returnsInMain.wacc --{14, 5}--
return outside of function is not allowed
```

```
11
12 begin
13   while true do
14     .....
15     return 3
16     .....
17     done;
18     if true then
```

```
Type error in returnsInMain.wacc --{18, 5}--
return outside of function is not allowed
```

```
15   done;
16
17   if true then
18     .....
19     return 4
20     .....
21     else
22       return 5
23     fi;
```

```
Type error in returnsInMain.wacc --{20, 5}--
return outside of function is not allowed
```

```
17   if true then
18     .....
19     return 4
20     .....
21     else
22       return 5
```

```
21 fi;  
22 begin
```

Type error in returnsInMain.wacc -={24, 5}=-  
return outside of function is not allowed

```
21 fi;  
22 begin  
23 .....  
24 return 6  
25 end  
26 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/expressions/boolOpTypeErr.wacc  
===== Frontend =====

Starting parsing... finished!

Starting renaming... finished!

Starting type checking... finished!

Errors detected during compilation!

Type error in boolOpTypeErr.wacc -={12, 12}=-  
unexpected int  
expected bool

```
9 # Program:  
10  
11 begin  
12 .....  
12 bool b = 1 || 1  
13 end
```

Type error in boolOpTypeErr.wacc -={12, 17}=-  
unexpected int  
expected bool

```
9 # Program:  
10  
11 begin  
12 .....  
12 bool b = 1 || 1  
13 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/expressions/exprTypeErr.wacc  
===== Frontend =====

Starting parsing... finished!

Starting renaming... finished!

Starting type checking... finished!

Errors detected during compilation!

Type error in exprTypeErr.wacc -={12, 14}=-  
unexpected int  
expected bool

```
9 # Program:  
10  
11 begin  
12 .....  
12 int b = 15 + 6 || 19  
13 end
```

Type error in exprTypeErr.wacc -={12, 21}=-  
unexpected int  
expected bool

```
9 # Program:
```

```
10
11 begin
12   int b = 15 + 6 || 19
13 end
```

```
Type error in exprTypeErr.wacc --{12, 18}--
unexpected bool
expected int
```

```
9 # Program:
10
11 begin
12   int b = 15 + 6 || 19
13 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/expressions/intOpTypeErr.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Errors detected during compilation!
```

```
-----
```

```
Type error in intOpTypeErr.wacc --{12, 11}--
unexpected bool
expected int
```

```
9 # Program:
10
11 begin
12   int x = true + false
13 end
```

```
-----
```

```
Type error in intOpTypeErr.wacc --{12, 18}--
unexpected bool
expected int
```

```
9 # Program:
10
11 begin
12   int x = true + false
13 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/expressions/lessPairExpr.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Errors detected during compilation!
```

```
-----
```

```
Type error in lessPairExpr.wacc --{16, 11}--
unexpected pair(int, int)
expected char or int
```

```
13  println x;
14  pair(int,int) y = newpair(2,3) ;
15  println y;
16  println x < y
17 end
```

```
-----
```

```
Type error in lessPairExpr.wacc --{16, 15}--
unexpected pair(int, int)
expected char or int
```

```
13  println x;
14  pair(int,int) y = newpair(2,3) ;
15  println y;
16  .....
16  println x < y
16  .....
17 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/expressions/mixedOpTypeErr.wacc

===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!

Type error in mixedOpTypeErr.wacc -={12, 19}=-  
unexpected bool  
expected int

```
9 # Program:
10
11 begin
11
12  int b = 1 + 2 + true + 4 + 5
12
13 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/expressions/moreArrExpr.wacc

===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Errors detected during compilation!

Type error in moreArrExpr.wacc -={14, 11}=-  
unexpected int[]  
expected char or int

```
11 begin
12  int[] x = [1,2];
13  int[] y = [3,4];
13
14  println x > y
14
15 end
```

Type error in moreArrExpr.wacc -={14, 15}=-  
unexpected int[]  
expected char or int

```
11 begin
12  int[] x = [1,2];
13  int[] y = [3,4];
13
14  println x > y
14
15 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/expressions/stringElemErr.wacc

===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!

Type error in stringElemErr.wacc -={14, 3}=-  
unexpected string  
expected at least 1-dimensional array  
str is not an array type so cannot be indexed

```
11 begin
12   string str = "hello world!" ;
13   println str ;
14   .....
15   str[0] = 'H' ;
16   .....
15   println str
16 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/function/callUndefFunction.wacc

===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!

Type error in callUndefFunction.wacc -={13, 21}=-  
Ident(fib) is not a valid function

```
10 # Program:
11 begin
12 .....
13   int result = call fib(5)
14   .....
14 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/function/doubleArgDef.wacc

===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!

Scope error in doubleArgDef.wacc -={12, 22}=-  
illegal redeclaration of x in current scope  
previously declared (in this scope) on line 12

```
9 # Program:
10
11 begin
12 .....
12   int foo(int x, int x) is
13   .....
13   return x
14 end
15
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/function/funcVarAccess.wacc

===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!

Scope error in funcVarAccess.wacc -={13, 5}=-  
variable x has not been declared in current scope

```
10
11 begin
12   int f() is
13   .....
13     x = -1 ;
14   .....
14   return 0
15 end
16   int x = 5 ;
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/function/functionAssign.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
-----
```

```
Scope error in functionAssign.wacc -={16, 3}=-
```

```
variable f has not been declared in current scope
```

```
13    return 3
14  end
15
16  .....
16  f = 2
16  ...^.....
17end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/function/functionBadArgUse.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
-----
```

```
Type error in functionBadArgUse.wacc -={13, 14}=-
```

```
unexpected int
```

```
expected bool
```

```
10
11begin
12 int f(int x) is
13
13  .....
13  bool b = x && true ;
13  ...^.....
14  return 0
15end
16 int x = call f(0)
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/function/functionBadCall.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
-----
```

```
Type error in functionBadCall.wacc -={15, 14}=-
```

```
unexpected int
```

```
expected bool
```

```
12 int f() is
13  return 0
14  end
14
15  .....
15  bool b = call f() ;
15  ...^.....
16  println b
17end
18
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/function/functionBadParam.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
-----
```

```
Type error in functionBadParam.wacc -={16, 18}=-
```

```
unexpected bool
```

```
expected int
```

```
13  return x
14  end
15  bool b = true ;
16  int x = call f(b)
17 end
18
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/function/functionBadReturn.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
Type error in functionBadReturn.wacc -={13, 16}=-  
unexpected char  
expected int  
function f can only return values of type int
```

```
10
11 begin
12 int f() is
13 ...
14 ...
15 int x = call f() ;
16 println x
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/function/functionOverArgs.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
Type error in functionOverArgs.wacc -={15, 18}=-  
unexpected 3 arguments  
expected 2 arguments  
too many arguments provided to function f
```

```
12 int f(int a, int b) is
13   return 0
14 end
15 ...
16 int x = call f(1,2,3);
17 ...
18 println x
19 end
20
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/function/functionRedefine.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
Scope error in functionRedefine.wacc -={15, 7}=-  
illegal redeclaration of function f  
previously declared on line 12
```

```
12 int f() is
13   return 0
14 end
15 ...
16 int f() is
```

```
16    return 1  
17 end  
18 int x = call f();
```

=====  
Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/function/functionSwapArgs.wacc  
===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Errors detected during compilation!

Type error in functionSwapArgs.wacc -{15, 20}=-  
unexpected bool  
expected int

```
12 int f(int a, bool b) is  
13   return 0  
14 end  
.....  
15 int x = call f(true,1);  
.....^  
16 println x  
17 end  
18
```

Type error in functionSwapArgs.wacc -{15, 25}=-  
unexpected int  
expected bool

```
12 int f(int a, bool b) is  
13   return 0  
14 end  
.....  
15 int x = call f(true,1);  
.....^  
16 println x  
17 end  
18
```

=====  
Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/function/functionUnderArgs.wacc  
===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!

Type error in functionUnderArgs.wacc -{15, 13}=-  
unexpected 1 arguments  
expected 2 arguments  
too few arguments provided to function f  
(function f has type (int,int) -> int)

```
12 int f(int a, int b) is  
13   return 0  
14 end  
.....  
15 int x = call f(1);  
.....^  
16 println x  
17 end  
18
```

=====  
Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/function/invalidReturnsBranched.wacc  
===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!

```
Scope error in invalidReturnsBranched.wacc -{15, 14}=-  
variable horse has not been declared in current scope
```

```
12 begin  
13   int f() is  
14     if true then  
15       return horse  
16     else  
17       return 1  
18   fi
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/function/mismatchingReturns.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Errors detected during compilation!
```

```
Type error in mismatchingReturns.wacc -{15, 14}=-  
unexpected char  
expected int  
function f can only return values of type int
```

```
12 begin  
13   int f(bool b) is  
14     if b then  
15       return 'c';  
16     while true do  
17       return 'd'  
18     done
```

```
Type error in mismatchingReturns.wacc -{17, 16}=-  
unexpected char  
expected int  
function f can only return values of type int
```

```
14   if b then  
15     return 'c';  
16     while true do  
17       return 'd'  
18     done  
19   else  
20     skip
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/if/ifIntCondition.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!
```

```
Type error in ifIntCondition.wacc -{12, 9}=-  
unexpected int  
expected bool
```

```
9 # Program:  
10  
11 begin  
12   if 15 + 6 then  
13     skip  
14   else  
15     skip
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/multiple/funcMess.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Errors detected during compilation!
```

```
Scope error in funcMess.wacc -={13, 5}=-
```

```
variable x has not been declared in current scope
```

```
10
11 begin
12   int f(bool b) is
13     .....
13     x = -1 ;
14     .....^.
14     return "done"
15   end
16
```

```
Type error in funcMess.wacc -={14, 12}=-
```

```
unexpected string
expected int
function f can only return values of type int
```

```
11 begin
12   int f(bool b) is
13     .....
13     x = -1 ;
14     .....^.
14     return "done"
15   end
16
17   int x = 5 ;
```

```
Type error in funcMess.wacc -={18, 18}=-
```

```
unexpected int
expected bool
```

```
15   end
16
17   int x = 5 ;
18   int y = call f(x) ;
19   println y ;
20   println x
21
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/multiple/ifAndWhileErrs.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Errors detected during compilation!
```

```
Scope error in ifAndWhileErrs.wacc -={12, 9}=-
```

```
variable tru has not been declared in current scope
```

```
9 # Program:
10
11 begin
12   .....
12   while tru do
13     .....^.
13     if 15 + 6 then
14       skip
15     else
```

```
Type error in ifAndWhileErrs.wacc -={13, 11}=-
```

```
unexpected int
expected bool
```

```
10
11 begin
```

```
12| while tru do
13|   if 15 + 6 then
14|     skip
15|   else
16|     skip
```

=====

Finished with exit code 200

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/multiple/messyExpr.wacc
===== Frontend =====
```

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Errors detected during compilation!

Type error in messyExpr.wacc -={13, 17}=-  
unexpected bool  
expected int

```
10|
11|begin
12|
13| int x = ((1 + true) * (2 - false)) || 17 ;
14| exit x
15|
16|end
```

Type error in messyExpr.wacc -={13, 30}=-  
unexpected bool  
expected int

```
10|
11|begin
12|
13| int x = ((1 + true) * (2 - false)) || 17 ;
14| exit x
15|
16|end
```

Type error in messyExpr.wacc -={13, 23}=-  
unexpected int  
expected bool

```
10|
11|begin
12|
13| int x = ((1 + true) * (2 - false)) || 17 ;
14| exit x
15|
16|end
```

Type error in messyExpr.wacc -={13, 41}=-  
unexpected int  
expected bool

```
10|
11|begin
12|
13| int x = ((1 + true) * (2 - false)) || 17 ;
14| exit x
15|
16|end
```

Type error in messyExpr.wacc -={13, 38}=-  
unexpected bool  
expected int

```
10
11 begin
12
13   int x = ((1 + true) * (2 - false)) || 17 ;
14   exit x
15
16 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/multiple/multiCaseSensitivity.wacc

===== Frontend =====

Starting parsing... finished!

Starting renaming... finished!

Starting type checking... finished!

Errors detected during compilation!

Scope error in multiCaseSensitivity.wacc --{13, 11}--  
variable NUMBER has not been declared in current scope

```
10
11 begin
12   int number = 42 ;
13   println NUMBER ;
14   int INDEX = 0 ;
15   println index ;
```

Scope error in multiCaseSensitivity.wacc --{16, 11}--  
variable index has not been declared in current scope

```
13   println NUMBER ;
14
15   int INDEX = 0 ;
16   println index ;
17
18   int miXed = 3 ;
19   println MIxED
```

Scope error in multiCaseSensitivity.wacc --{19, 11}--  
variable MIxED has not been declared in current scope

```
16   println index ;
17
18   int miXed = 3 ;
19   println MIxED
20 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/multiple/multiTypeErrs.wacc

===== Frontend =====

Starting parsing... finished!

Starting renaming... finished!

Starting type checking... finished!

Errors detected during compilation!

Type error in multiTypeErrs.wacc --{12, 11}--  
unexpected bool  
expected int

```
9 # Program:
10
11 begin
12   int i = true ;
13   bool b = 'a' ;
14   char c = 10
```

```
15|end
```

```
Type error in multiTypeErrs.wacc -={13, 12}=-  
unexpected char  
expected bool
```

```
10|  
11|begin  
12|  int i = true ;  
13|  ....  
13|  bool b = 'a' ;  
14|  ....^.....  
14|  char c = 10  
15|end
```

```
Type error in multiTypeErrs.wacc -={14, 12}=-  
unexpected int  
expected char
```

```
11|begin  
12|  int i = true ;  
13|  bool b = 'a' ;  
14|  ....  
14|  char c = 10  
15|end
```

```
=====  
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/multiple/obfuscatingReturnsWithWhile.wacc  
===== Frontend =====  
Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Errors detected during compilation!
```

```
Type error in obfuscatingReturnsWithWhile.wacc -={16, 16}=-  
unexpected char  
expected int  
function f can only return values of type int
```

```
13|  int f() is  
14|    if true then  
15|      while true do  
16|        ....  
16|        return 'a'  
17|        ....^.....  
17|      done  
18|    else  
19|      return 5
```

```
Type error in obfuscatingReturnsWithWhile.wacc -={25, 16}=-  
unexpected char  
expected int  
function f can only return values of type int
```

```
22|    ....  
23|    return 2  
23|    else  
24|      while false do  
25|        ....  
25|        return 'b'  
26|        ....^.....  
26|      done  
27|    fi;  
28|    if true then
```

```
Type error in obfuscatingReturnsWithWhile.wacc -={38, 15}=-  
unexpected string  
expected bool
```

```
35|    ....  
36|    done  
36|    fi;  
37|    while false do  
38|      ....  
38|      return !"horse"  
39|      ....^.....  
39|    done;
```

```
40 exit -1
41 end
```

```
Type error in obfuscatingReturnsWithWhile.wacc -={38, 14}=-  
unexpected bool  
expected int  
function f can only return values of type int
```

```
35     done
36   fi;
37   while false do
38     .....
38     return !"horse"
38     .....
39   done;
40   exit -1
41 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/pairs/badPairAssign.wacc
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
Type error in badPairAssign.wacc -={12, 11}=-  
unexpected pair(int, int)  
expected int
```

```
9 # Program:
10
11 begin
11
12   int x = newpair(10, 20)
12   .....
13 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/pairs/badPairExchange.wacc
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
Type error in badPairExchange.wacc -={14, 15}=-  
attempting to exchange values between pairs of unknown types  
pair exchange is only legal when the type of at least one of the sides is known or specified
```

```
11 begin
12   pair(int, int) p = newpair(4, 5);
13   pair(pair, int) q = newpair(p, 6);
13
14   fst fst q = snd fst q
14   .....
15 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/pairs/freeNonPair.wacc
===== Frontend =====
```

```
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
Type error in freeNonPair.wacc -={14, 8}=-  
unexpected int  
expected array or pair
```

```
11 begin
12   int x = 5;
13   println x;
```

```
14 free 9 ;
15 println x
16 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/pairs/mismatchedPair.wacc

===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!

Type error in mismatchedPair.wacc -={12, 24}=-  
unexpected pair(int, int)  
expected pair(char, bool)

```
9 # Program:
10
11 begin
12   pair(char, bool) x = newpair(10, 20)
13 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/pairs/noPairCovariance.wacc

===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!

Type error in noPairCovariance.wacc -={14, 30}=-  
unexpected pair(char[], char[])  
expected pair(string, string)

```
11
12 begin
13   pair(char[], char[]) pcs = null ;
14   pair(string, string) bad = pcs
15 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/pairs/nonMatchingPairs.wacc

===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!

Type error in nonMatchingPairs.wacc -={15, 8}=-  
unexpected pair(int, int)  
expected pair(char, char)

```
12 begin
13   pair(int, int) p1 = newpair(0, 0);
14   pair(char, char) p2 = newpair('a', 'a');
15   p2 = p1
16 end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/pairs/readUnknown.wacc

===== Frontend =====

Starting parsing... finished!  
Starting renaming... finished!

```
Starting type checking... finished!
Error detected during compilation!
```

```
Type error in readUnknown.wacc -={13, 8}=-  
attempting to read from unknown type  
reading from a nested pair extraction is not legal due to pair erasure
```

```
10 begin  
11   pair(pair, int) p = null;  
12   .....  
13   read fst fst p  
14 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/pairs/wrongTypeInParameterlessPair.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!
```

```
Type error in wrongTypeInParameterlessPair.wacc -={17, 14}=-  
unexpected int  
expected pair
```

```
14   pair(int, int) p = newpair(c, c);  
15   pair(pair, int) oops = newpair(p, 0);  
16   .....  
17   fst oops = c  
18 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/print/printTypeErr01.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!
```

```
Type error in printTypeErr01.wacc -={14, 15}=-  
unexpected char  
expected int
```

```
11 begin  
12   int x = 4 ;  
13   char y = 'a' ;  
14   println x + y  
15 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/read/readIntoBadFst.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!
```

```
Type error in readIntoBadFst.wacc -={13, 8}=-  
unexpected bool  
expected char or int
```

```
10 begin  
11   pair(bool, bool) p = null;  
12   .....  
13   read fst p  
14 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/read/readIntoBadSnd.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
Type error in readIntoBadSnd.wacc --{13, 8}--
```

```
unexpected bool
```

```
expected char or int
```

```
10 begin
11 pair(bool, bool) p = null;
12 ...
13 read snd p
14 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/read/readTypeErr01.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
Type error in readTypeErr01.wacc --{13, 8}--
```

```
unexpected pair(int, int)
```

```
expected char or int
```

```
10 begin
11 pair(int, int) p = newpair(1,2);
12 ...
13 read p
14 end
15
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/scope/badParentScope.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
Type error in badParentScope.wacc --{16, 12}--
```

```
unexpected int
```

```
expected array or pair
```

```
13 int x = 5;
14 begin
15 begin
16 free x
17 end;
18 int[] x = [1]
19 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/scope/badScopeRedefine.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
Type error in badScopeRedefine.wacc -{15, 9}=-  
unexpected int  
expected bool
```

```
12 int x = 12 ;  
13 begin  
14   bool x = true ;  
15   x = 5  
16 end ;  
17 exit x  
18 end
```

```
=====  
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/basicTypeErr01.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!
```

```
Type error in basicTypeErr01.wacc -{12, 11}=-  
unexpected bool  
expected int
```

```
9 # Program:  
10  
11 begin  
12   int i = true  
13 end
```

```
=====  
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/basicTypeErr02.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!
```

```
Type error in basicTypeErr02.wacc -{12, 11}=-  
unexpected char  
expected int
```

```
9 # Program:  
10  
11 begin  
12   int i = 'f'  
13 end
```

```
=====  
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/basicTypeErr03.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!
```

```
Type error in basicTypeErr03.wacc -{12, 11}=-  
unexpected string  
expected int
```

```
9 # Program:  
10  
11 begin  
12   int i = "foo"  
13 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/basicTypeErr04.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
Type error in basicTypeErr04.wacc -={12, 12}=-
```

```
unexpected int  
expected bool
```

```
9 # Program:  
10  
11 begin  
12   bool b = 1  
13 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/basicTypeErr05.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
Type error in basicTypeErr05.wacc -={12, 12}=-
```

```
unexpected char  
expected bool
```

```
9 # Program:  
10  
11 begin  
12   bool b = 't'  
13 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/basicTypeErr06.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
Type error in basicTypeErr06.wacc -={12, 12}=-
```

```
unexpected string  
expected bool
```

```
9 # Program:  
10  
11 begin  
12   bool b = "true"  
13 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/basicTypeErr07.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
Type error in basicTypeErr07.wacc -={12, 12}=-
```

```
unexpected int
```

```
expected char
```

```
9 # Program:  
10  
11 begin  
12   .....  
12   char c = 1  
13 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/basicTypeErr08.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
-----
```

```
Type error in basicTypeErr08.wacc --{12, 12}--
```

```
unexpected bool  
expected char
```

```
9 # Program:  
10  
11 begin  
12   .....  
12   char c = false  
13 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/basicTypeErr09.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
-----
```

```
Type error in basicTypeErr09.wacc --{12, 12}--
```

```
unexpected string  
expected char
```

```
9 # Program:  
10  
11 begin  
12   .....  
12   char c = "a"  
13 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/basicTypeErr10.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!
```

```
Starting renaming... finished!
```

```
Starting type checking... finished!
```

```
Error detected during compilation!
```

```
-----
```

```
Type error in basicTypeErr10.wacc --{12, 14}--
```

```
unexpected int  
expected string
```

```
9 # Program:  
10  
11 begin  
12   .....  
12   string s = 128  
13 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/basicTypeErr11.wacc
===== Frontend =====
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
-----
Type error in basicTypeErr11.wacc --{12, 14}--
unexpected bool
expected string
```

```
9 # Program:
10
11 begin
12   .....
13   string s = true
14   .....
15 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/basicTypeErr12.wacc
===== Frontend =====
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
-----
Type error in basicTypeErr12.wacc --{12, 14}--
unexpected char
expected string
```

```
9 # Program:
10
11 begin
12   .....
13   string s = 'h'
14   .....
15 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/caseMatters.wacc
===== Frontend =====
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
-----
Scope error in caseMatters.wacc --{14, 11}--
variable NUMBER has not been declared in current scope
```

```
11 begin
12
13   int number = 42 ;
14   .....
15   println NUMBER
16   .....
17 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/variables/doubleDeclare.wacc
===== Frontend =====
Starting parsing... finished!
Starting renaming... finished!
Starting type checking... finished!
Error detected during compilation!
```

```
-----
Scope error in doubleDeclare.wacc --{13, 7}--
illegal redeclaration of x in current scope
previously declared (in this scope) on line 12
```

```
10
11 begin
12   int x = 10 ;
```

```
13 int x = 20  
14 end
```

=====  
Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/variables/undeclaredScopeVar.wacc

===== Frontend =====

Starting parsing... finished!

Starting renaming... finished!

Starting type checking... finished!

Error detected during compilation!

-----  
Scope error in undeclaredScopeVar.wacc -={15, 3}=-  
variable x has not been declared in current scope

```
12 begin  
13 int x = 5  
14 end ;  
15 x = 10  
16 end
```

=====  
Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/variables/undeclaredVar.wacc

===== Frontend =====

Starting parsing... finished!

Starting renaming... finished!

Starting type checking... finished!

Error detected during compilation!

-----  
Scope error in undeclaredVar.wacc -={12, 3}=-  
variable x has not been declared in current scope

```
9 # Program:  
10  
11 begin  
12 x = 10  
13 end
```

=====  
Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/variables/undeclaredVarAccess.wacc

===== Frontend =====

Starting parsing... finished!

Starting renaming... finished!

Starting type checking... finished!

Error detected during compilation!

-----  
Scope error in undeclaredVarAccess.wacc -={13, 11}=-  
variable y has not been declared in current scope

```
10  
11 begin  
12 int x = 10 ;  
13 x = x + y  
14 end
```

=====  
Finished with exit code 200

/tmp/d20250207-34-xhbzw8/local\_tests/invalid/semanticErr/while/falsErr.wacc

===== Frontend =====

Starting parsing... finished!

Starting renaming... finished!

Starting type checking... finished!

Error detected during compilation!

-----  
Scope error in falsErr.wacc -={12, 9}=-

```
variable fals has not been declared in current scope
```

```
9 # Program:  
10  
11 begin  
12 |.....  
12 | while fals do  
12 |.....^.  
13 | skip  
14 | done  
15 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/while/truErr.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!
```

```
Scope error in truErr.wacc -={12, 9}=-  
variable tru has not been declared in current scope
```

```
9 # Program:  
10  
11 begin  
12 |.....  
12 | while tru do  
12 |.....^.  
13 | skip  
14 | done  
15 end
```

```
=====
```

```
Finished with exit code 200
```

```
/tmp/d20250207-34-xhbzw8/local_tests/invalid/semanticErr/while/whileIntCondition.wacc
```

```
===== Frontend =====
```

```
Starting parsing... finished!  
Starting renaming... finished!  
Starting type checking... finished!  
Error detected during compilation!
```

```
Type error in whileIntCondition.wacc -={12, 12}=-  
unexpected int  
expected bool
```

```
9 # Program:  
10  
11 begin  
12 |.....  
12 | while 15 + 6 do  
12 |.....^.  
13 | skip  
14 | done  
15 end
```

```
=====
```

```
Finished with exit code 200
```

```
Passed 78/78
```

```
----- SEMANTIC Test Errors -----
```