

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-xhbw8' 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:
52:   4.16MB java.base
53:   1.15MB parsley_3-5.0.0-M10.jar
54:   1.13MB scala-library-2.13.15.jar
55:  994.71kB svm.jar (Native Image)
56:  686.63kB library.jar
57:  113.71kB java.logging
58:   65.00kB org.graalvm.nativeimage.base
59:   47.59kB jdk.proxy1
60:   45.84kB jdk.proxy3
51: Top 10 object types in image heap:
52:   2.56MB byte[] for code metadata
53:   2.27MB byte[] for java.lang.String
54:   1.39MB java.lang.Class
55:   1.23MB java.lang.String
56:  470.25kB com.oracle.svm.core.hub.DynamicHubCompanion
57:  287.80kB byte[] for general heap data
58:  266.09kB byte[] for reflection metadata
59:  248.86kB java.util.HashMap$Node
60:  247.27kB java.lang.String[]
```

WACC Test Preview**testResults.txt: 2/2****ka1023(j2)**

```
61: 27.06kB jdk.internal.vm.ci          230.81kB java.lang.Object[]
62: 69.50kB for 8 more packages          1.96MB for 1409 more object types
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-xhbw8/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-xhbw8/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|.....
13|  int[] b = [1, 2, 3] ++ [4] ;
14|.....
15|  println b[3]
16|end
```

=====
Finished with exit code 100

/tmp/d20250207-34-xhbw8/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|.....
13| oops, this is supposed to be a comment
14|.....
15|  print "Hello World!\n"
16|end
```

=====
Finished with exit code 100

/tmp/d20250207-34-xhbw8/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|.....
13|  int x = 10 ; can I put in-line comments after the ';' ?
14|.....
15|  x = 20 ; #yes, but only if you remember to use the '#' charcter!
16|  exit x
```

=====
Finished with exit code 100

/tmp/d20250207-34-xhbw8/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 "\", \"'\", \"\\\", \"\b\", \"\f\", \"\n\", \"\r\" or \"\t\"

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

Finished with exit code 100

```
/tmp/d20250207-34-xhbw8/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|^.....
```

Finished with exit code 100

```
/tmp/d20250207-34-xhbw8/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|
```

Finished with exit code 100

```
/tmp/d20250207-34-xhbw8/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
```

Finished with exit code 100

```
/tmp/d20250207-34-xhbw8/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|
```

Finished with exit code 100

```
/tmp/d20250207-34-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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 |   int b = 2 -
13 | .....
14 | .....^.....
```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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-xhbw8/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-xhbw8/local_tests/invalid/syntaxErr/function/badlyPlaced.wacc
===== Frontend =====

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() is  
12|    return 42  
13|end
```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/local_tests/invalid/syntaxErr/function/funcExpr.wacc
===== Frontend =====

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|    int x = f() + f()  
16|end  
17|
```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/local_tests/invalid/syntaxErr/function/funcExpr2.wacc
===== Frontend =====

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

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|    while x > f(x) do  
18|        println x ;  
19|        x = x - 1
```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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|.....
11|  bool f ( bool b ) is
12|.....
12|    if ( b ) then
13|      return b
```

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

```
/tmp/d20250207-34-xhbw8/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|.....
11|  int f() is
12|.....
12|    return 2;
13|    println "How on Earth did we get here?"
```

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

```
/tmp/d20250207-34-xhbw8/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|.....
17|  int g() is
18|.....
18|    return 1
19|  end
```

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

```
/tmp/d20250207-34-xhbw8/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|.....
15|  int x = f()
16|.....
16|  end
17|
```

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

```
/tmp/d20250207-34-xhbw8/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|.....
12|  int f(x) is
13|.....
13|    return 0
```

```
14| end
```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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| .....  
12|   int f(int x, int y,) is  
13| .....  
13|     return 0  
14| end
```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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| .....  
12|   f() is  
13| .....  
13|     return 0  
14| end
```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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  
12| .....  
12|     bool b = true  
13| end
```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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  
13| .....  
13|     int i = 0;  
14|     while i < n do
```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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|    int f() is
.....^.....
14|        return 0
15|    end
```

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

```
/tmp/d20250207-34-xhbw8/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|    print "r2: received " ;
25|    println y ;
```

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

```
/tmp/d20250207-34-xhbw8/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|end
.....^.....
16|
17|
```

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

```
/tmp/d20250207-34-xhbw8/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|
11|begin
.....
12|    int f(int *x) is
.....^.....
13|        *x = *x + 1;
14|        return 0
```

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

```
/tmp/d20250207-34-xhbw8/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| fi
16| ..^^.....
17| end
```

=====

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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| end
19| ^^^.....
```

=====

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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| .....
14| else
15| ^^^.....
16| skip
17| fi
```

=====

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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| .....
13| ifi true
14| ^^^.....
15| then
16| skip
```

=====

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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| .....
14| char c = 'Hello Jamie'
15| .....
16| end
```

=====

Finished with exit code 100

```
/tmp/d20250207-34-xhbw8/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|
11|begin
   |.....
12|   string s = "hello
   |.....^.....
13| world"
14|end
```

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

```
/tmp/d20250207-34-xhbw8/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|
11|begin
   |.....
12|   string s = "héello world"
   |.....^.....
13|end
14|
```

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

```
/tmp/d20250207-34-xhbw8/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|   println fst p
   |.....^^.....
14|end
15|
```

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

```
/tmp/d20250207-34-xhbw8/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|   println snd p
   |.....^^.....
14|end
15|
```

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

```
/tmp/d20250207-34-xhbw8/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-xhbw8/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|
11| begin
.....
12|   int i = fst null;
.....^^^.....
13|   println i
14| end
```

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

```
/tmp/d20250207-34-xhbw8/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|
11| begin
.....
12|   pair(pair(int, string), char) p = null
.....^.....
13| end
14|
```

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

```
/tmp/d20250207-34-xhbw8/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|
11| begin
.....
12|   int i = snd null;
.....^^^.....
13|   println i
14| end
```

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

```
/tmp/d20250207-34-xhbw8/local_tests/invalid/syntaxErr/print/printlnCharArray.wacc
```

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

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

```
-----
Syntax error in printlnCharArray.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|
11| begin
.....
```

```

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

```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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| .....^.....
11| begin
12|     skip;;
13|     skip
14| end

```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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|.....
13|   int x = 2200000000
14|.....^.....
15|end
16|

```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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|.....
13|   int = 42
14|.....^.....
15|end
16|

```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/local_tests/invalid/syntaxErr/while/donoErr.wacc
===== Frontend =====

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

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

```

12|   while false do
13|       skip
14|       dono
15|       ..^^^
16|   end
17|

```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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|.....
12|   while false doo
13|       ..^^^
14|       skip
15|       done
16|   end
17|

```

Finished with exit code 100

/tmp/d20250207-34-xhbw8/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|.....
12|   whil false do
13|       ..^^^
14|       skip
15|       done
16|   end
17|

```

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

/tmp/d20250207-34-xhbw8/local_tests/invalid/syntaxErr/while/whileNodo.wacc
===== Frontend =====
Starting parsing... finished!
Error detected during compilation!
-----
Syntax error in whileNodo.wacc -={13, 5}=-
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|    skip
14|  done
15|end
```

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

/tmp/d20250207-34-xhbw8/local_tests/invalid/syntaxErr/while/whileNodone.wacc
===== Frontend =====
Starting parsing... finished!
Error detected during compilation!
-----
Syntax error in whileNodone.wacc -={14, 1}=-
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-xhbw8/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|  read b ;  
14|  println b  
15|end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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];  
14|  int b = a[1 - "horse"];  
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"];  
15|  int c = a[!false]  
16|end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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-xhbw8/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-xhbw8/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| .....
12| .....
    | begin
13| .....
    | int[] a = [1];
    | .....
14| .....
    | println a[1][2]
    | .....^.....
15| .....
    | end

```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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| .....
12| .....
    | begin
    | .....
13| .....
    | char c = horse[2]
    | .....^.....
14| .....
    | end

```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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
```

```
.....^.....
16end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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
12begin
13  int[] a = [1, 2];
.....
14  int oops = a[1][2][3]
.....^.....
15end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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
12begin
.....
13  int[] should_be_int_array = ['a', 'b', 'c']
.....^.....
14end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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
11begin
.....
12  exit 'a'
.....^.....
13end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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|  exit x
   | .....^.....
14|end
```

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

```
/tmp/d20250207-34-xhbw8/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|  return 42 ;
   | .....^.....
13|  println "should not get here"
14|end
```

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

```
/tmp/d20250207-34-xhbw8/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|    return 3
   | .....^.....
15|  done;
16|
17|  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|    return 4
   | .....^.....
19|  else
20|    return 5
21|  fi;
```

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

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

```

21| .....^.....
22|   fi;
23| begin

```

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

```

21|   fi;
22|
23| begin
24| .....^.....
25|   return 6
26| .....^.....
27| end
28| end

```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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| .....^.....
13|   bool b = 1 || 1
14| .....^.....
15| end

```

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

```

9| # Program:
10|
11| begin
12| .....^.....
13|   bool b = 1 || 1
14| .....^.....
15| end

```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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| .....^.....
13|   int b = 15 + 6 || 19
14| .....^.....
15| 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-xhbw8/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-xhbw8/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|   println x < y
.....^.....
17|end

```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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
.....
12|   int b = 1 + 2 + true + 4 + 5
.....^.....
13| end

```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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];
.....
14|   println x > y
.....^.....
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];
.....
14|   println x > y
.....^.....
15| end

```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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|  .....
14|  str[0] = 'H' ;
14|  ..^.....
15|  println str
16|end

```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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|
12|begin
13|  .....
13|  int result = call fib(5)
13|  .....^.....
14|end

```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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
12|  .....^.....
13|  return x
14|  end
15|

```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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 ;
13|  .....^.....
14|    return 0
15|  end
16|  int x = 5 ;

```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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|     f = 2
```

```
..^.....
```

```
17| end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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|
```

```
11| begin
```

```
12| int f(int x) is
```

```
.....
```

```
13|     bool b = x && true ;
```

```
.....^.....
```

```
14|     return 0
```

```
15| end
```

```
16| int x = call f(0)
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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
```

```
.....
```

```
15| bool b = call f() ;
```

```
.....^.....
```

```
16| println b
```

```
17| end
```

```
18|
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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-xhbw8/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|   return 'c'
.....^.....
14| end
15| int x = call f();
16| println x
```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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| int x = call f(1,2,3);
.....^.....
16| println x
17| end
18|
```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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| int f() is
```

```

.....^.....
16|   return 1
17| end
18| int x = call f();

```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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|    .....
14|    x = -1 ;
15|    .....^.....
16|    return "done"
17|  end
```

```
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|    x = -1 ;
14|    .....
15|    return "done"
16|    .....^.....
17|  end
18|  int x = 5 ;
```

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

```
unexpected int
```

```
expected bool
```

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

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

```
/tmp/d20250207-34-xhbw8/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|  .....
13|  while tru do
14|    .....^.....
15|    if 15 + 6 then
16|      skip
17|    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-xhbw8/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-xhbw8/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|
15|  int INDEX = 0 ;
16|  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-xhbw8/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|  bool b = 'a' ;
   | .....^.....
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|  char c = 10
   | .....^.....
15|end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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|        return 'a'
   | .....^.....
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|    return 2
23|  else
24|    while false do
   | .....
25|      return 'b'
   | .....^.....
26|    done
27|  fi;
28|  if true then
```

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

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

=====
Finished with exit code 200

/tmp/d20250207-34-xhbw8/local_tests/invalid/semanticErr/pairs/badPairAssign.wacc

=====
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
.....
12|   int x = newpair(10, 20)
.....^.....
13| end
```

=====
Finished with exit code 200

/tmp/d20250207-34-xhbw8/local_tests/invalid/semanticErr/pairs/badPairExchange.wacc

=====
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);
.....
14|   fst fst q = snd fst q
.....^.....
15| end
```

=====
Finished with exit code 200

/tmp/d20250207-34-xhbw8/local_tests/invalid/semanticErr/pairs/freeNonPair.wacc

=====
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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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|  
11|begin  
12|  pair(pair, int) p = null;  
.....  
13|  read fst fst p  
.....^.....  
14|end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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-xhbw8/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-xhbw8/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|  
11|begin  
12|  pair(bool, bool) p = null;  
.....  
13|  read fst p  
.....^.....  
14|end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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|  
11|begin  
12|  pair(bool, bool) p = null;  
   |.....  
13|  read snd p  
   |.....^.....  
14|end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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|  
11|begin  
12|  pair(int, int) p = newpair(1,2);  
   |.....  
13|  read p  
   |.....^.....  
14|end  
15|
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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|  char c = 1
  .....^.....
13|end
```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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|  char c = false
  .....^.....
13|end
```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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|  char c = "a"
  .....^.....
13|end
```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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|  string s = 128
  .....^.....
13|end
```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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 |   string s = true
```

```
.....^.....
```

```
13 | end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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 |   string s = 'h'
```

```
.....^.....
```

```
13 | end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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 |   println NUMBER
```

```
.....^.....
```

```
15 |
```

```
16 | end
```

=====

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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-xhbw8/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 |     while fals do
13 |         skip
14 |     done
15 | end
```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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 |     while tru do
13 |         skip
14 |     done
15 | end
```

Finished with exit code 200

/tmp/d20250207-34-xhbw8/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 |     while 15 + 6 do
13 |         skip
14 |     done
15 | end
```

Finished with exit code 200

Passed 78/78

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