

Test Result	End Goal	Test Condition
<pre> 721 PM/Project 2 Skeleton Code \$./compile <test5.txt 1 // Function With a Real and Character Variables and Literals 2 3 function main returns character; 4 a: real is 7.8e-1; 5 begin 6 when a < .45, '\n' : 'A'; 7 end; </pre>	<pre> \$./compile < test5.txt 1 // Function with a Real and Character Variables and Literals 2 3 function main returns character; 4 a: real is 7.8e-1; 5 begin 6 when a < .45, '\n' : 'A'; 7 end; Compiled Successfully </pre>	Function with a Real and Character Variables and Literals
<pre> \$./compile <test6.txt 1 // Function with an If Statemnt 2 3 function main a: integer returns integer; 4 begin 5 if a < 10 then 6 1; 7 elsif a < 20 then 8 2; 9 elsif a < 30 then 10 3; 11 else 12 4; 13 endif; 14 end; </pre>	<pre> 1 // Function with an If Statement 2 3 function main returns integer; 4 a: integer is #A; 5 begin 6 if a < 10 then 7 1; 8 elsif a < 20 then 9 2; 10 elsif a < 30 then 11 3; 12 else 13 4; 14 endif; 15 end; </pre>	Function with an If Statemnt
<pre> \$./compile <test7.txt 1 // Left and Right Fold Statement 2 3 4 function main returns integer; 5 a: list of integer is (1, 2, 3); 6 begin 7 switch a(1) is 8 case 1 => 9 fold right - (2,3, 4) endfold; 10 case 2 => syntax error, unexpected CASE, expecting OTHERS 11 fold left + a endfold; 12 others => 13 0; 14 endswitch; 15 end; </pre>	<pre> \$./compile < test7.txt 1 // Left and Right Fold Statement 2 3 4 function main returns integer; 5 a: list of integer is (1, 2, 3); 6 begin 7 switch a(1) is 8 case 1 => 9 fold right - (2,3, 4) endfold; 10 case 2 => 11 fold left + a endfold; 12 others => 13 0; 14 endswitch; 15 end; Compiled Successfully </pre>	Left and Right Fold Statement
<pre> \$./compile <test8.txt 1 // Multiple Integer Variable Initializations 2 3 function main returns integer; 4 b: integer is 5 + 1 - 4; 5 c: integer is 2 + 3; 6 begin 7 b + 1 - c; 8 end; </pre>		Multiple Integer Variable Initializations

	<pre>\$./compile < test8.txt 1 // Multiple Integer Variable Initializations 2 3 function main returns integer; 4 b: integer is 5 + 1 - 4; 5 c: integer is 2 + 3; 6 begin 7 b + 1 - c; 8 end;</pre> <p>Compiled Successfully</p>	
<pre>\$./compile <test9.txt 1 // Single Parameter Declaration 2 3 function main a: integer returns integer; 4 begin 5 a + 1; 6 end;</pre>	<pre>\$./compile < test9.txt 1 // Single Parameter Declaration 2 3 function main a: integer returns integer; 4 begin 5 a + 1; 6 end;</pre> <p>Compiled Successfully</p>	Single Parameter Declaration
<pre>\$./compile <test10.txt 1 // Two Parameter Declarations 2 3 function main a: integer, b: real returns real; 4 c: real is .7; 5 begin 6 a + b * c; 7 end;</pre>	<pre>\$./compile < test10.txt 1 // Two Parameter Declarations 2 3 function main a: integer, b: real returns real; 4 c: real is .7; 5 begin 6 a + b * c; 7 end;</pre> <p>Compiled Successfully</p>	Two Parameter Declarations
<pre>\$./compile <test11.txt 1 // Arithmetic Operators 2 3 function main returns integer; 4 begin 5 9 + -2 - (5 - 1) / 2 % 3 * 3 ^ 1 ^ 2; 6 end;</pre>	<pre>\$./compile < test11.txt 1 // Arithmetic Operators 2 3 function main returns integer; 4 begin 5 9 + ~2 - (5 - 1) / 2 % 3 * 3 ^ 1 ^ 2; 6 end;</pre> <p>Compiled Successfully</p>	Arithmetic Operators
<pre>\$./compile <test12.txt 1 // Relational and Logical Operators 2 3 function main returns integer; 4 begin 5 when 5 > 8 & 3 = 3 9 < 1 & !(3 <> 7) 6 <= 7 & 3 >= 9, 1 : 0; 6 end;</pre>	<pre>\$./compile < test12.txt 1 // Relational and Logical Operators 2 3 function main returns integer; 4 begin 5 when 5 > 8 & 3 = 3 9 < 1 & !(3 <> 7) 6 <= 7 & 3 >= 9, 1 : 0; 6 end;</pre> <p>Compiled Successfully</p>	Relational and Logical Operators

<pre>\$./compile <test13.txt 1 // Comprehensive Test with Nested If 2 3 function main a: integer, b: character, c: real returns real; 4 d: integer is #8e; 5 e: real is 3.75; 6 f: character is 'A'; 7 g: list of integer is (1, 3, 5); 8 begin 9 if ~a > 5 & a < 1 & !(c = 5.8 c <> .7E4) then 10 if c >= 7.5E-2 & c <= 5.2 then 11 when a = d, a + 2 - 7.0E+2 / 9 * 4 : 8.9; 12 elsif g(1) = a ^ 2 % 3 then 13 a % 2 - 5 / c; 14 else 15 fold left + (1, 2, 3) endfold; 16 endif; 17 else</pre>	<pre>\$./compile < test13.txt 1 // Comprehensive Test with Nested If 2 3 function main a: integer, b: character, c: real returns real; 4 d: integer is #8e; 5 e: real is 3.75; 6 f: character is 'A'; 7 g: list of integer is (1, 3, 5); 8 begin 9 if ~a > 5 & a < 1 & !(c = 5.8 c <> .7E4) then 10 if c >= 7.5E-2 & c <= 5.2 then 11 when a >= d, a + 2 - 7.9E+2 / 9 * 4 : 8.9; 12 elsif g(1) = a ^ 2 % 3 then 13 a % 2 - 5 / c; 14 else 15 16 fold left + (1, 2, 3) endfold; 17 endif; 18 else 19 fold right - g endfold; 20 endif; 21 end;</pre> <p>Compiled Successfully</p>
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Comprehensive Test with Nested If

<pre>1 // Comprehensive Test with Nested Switch 2 3 function main a: integer, b: real returns real; 4 c: integer is 8; 5 d: real is .7E2; 6 begin 7 switch a is 8 case 1 => a * 2 / d ^ 2; 9 case 2 => a + 5.3E+2 - b; syntax error, unexpected CASE, expecting OTHERS 10 case 3 => 11 switch d is 12 case 1 => a % 2; 13 others => 9.1E-1; 14 endswitch; 15 case 4 => a / 2 - c; 16 others => a + 4.7 * b; 17 endswitch;</pre>	<pre>\$./compile < test14.txt 1 // Comprehensive Test with Nested Switch 2 3 function main a: integer, b: real returns real; 4 c: integer is 8; 5 d: real is .7E2; 6 begin 7 switch a is 8 case 1 => a * 2 / d ^ 2; 9 case 2 => a + 5.3E+2 - b; 10 case 3 => 11 switch d is 12 case 1 => a % 2; 13 others => 9.1E-1; 14 endswitch; 15 case 4 => a / 2 - c; 16 others => a + 4.7 * b; 17 endswitch; 18 end;</pre> <p>Compiled Successfully</p>
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Comprehensive Test with Nested Switch

<pre>\$./compile <syntax1.txt 1 // Missing Operator in Expression 2 3 function main returns integer; 4 begin 5 8 + 2 9 * 3; syntax error, unexpected INT_LITERAL, expecting ';' 6 end;</pre>	
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Missing Operator in Expression

		<p>Error in Function Header, Missing Colon</p>
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```
*$ ./compile <syntax2.txt

1 // Error in Function Header, Missing Colon
2
3 function main a integer returns integer;
syntax error, unexpected INTEGER, expecting ':'
4     b: integer is 3 * 2;
5 begin
6     if a <= 0 then
7         b + 3;
8     else
9         b * 4;
10    endif;
11 end;
```

```
$ ./compile < syntax2.txt

1 // Error in Function Header, Missing Colon
2
3 function main a integer returns integer;
Syntax Error, Unexpected INTEGER, expecting ':'
4     b: integer is 3 * 2;
5 begin
6     if a <= 0 then
7         b + 3;
8     else
9         b * 4;
10    endif;

11 end;

Lexical Errors 0
Syntax Errors 1
Semantic Errors 0
```

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*$ ./compile <syntax3.txt

1 // Error in Variable Declaration
2
3 function main a: integer returns integer;
4     b integer is
syntax error, unexpected INTEGER, expecting ':'
5     if a > 5 then
6         a * 3;
7     else
8         2 + a;
9     endif;
10    c: real is 3.5;
11 begin
12    if a <= 0 then
13        b + 3;
14    else
15        b * 4;
16    endif;
```

```
$ ./compile < syntax3.txt

1 // Error in Variable Declaration
2
3 function main a: integer returns integer;
4     b integer is
Syntax Error, Unexpected INTEGER, expecting ':'
5     if a > 5 then
6         a * 3;
7     else
8         2 + a;
9     endif;
10    c: real is 3.5;
11 begin
12    if a <= 0 then
13        b + 3;
14    else
15        b * 4;
16    endif;
17 end;

Lexical Errors 0
Syntax Errors 1
Semantic Errors 0
```

Error in
Variable
Declaration

```
*$ ./compile <syntax4.txt

1 // Multiple Errors, Error in Case Clause and Missing Others Clause
2
3 function main a: integer returns integer;
4 begin
5     switch a is
6         case 1 => a 2;
syntax error, unexpected INT_LITERAL, expecting ';'
7         case 2 => 5;
8     endswitch;
9 end;
```

Multiple
Errors, Error in
Case Clause
and Missing
Others Clause

	<pre>\$./compile < syntax4.txt 1 // Multiple Errors, Error in Case Clause and Missing Others Clause 2 3 function main a: integer returns integer; 4 begin 5 switch a is 6 case 1 => a 2; Syntax Error, Unexpected INT_LITERAL, expecting ';' 7 case 2 => 5; 8 endswitch; Syntax Error, Unexpected ENDSWITCH, expecting CASE or OTHERS 9 end; Lexical Errors 0 Syntax Errors 2 Semantic Errors 0</pre>	
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<pre>*\$./compile < syntax5.txt 1 -- Multiple Errors syntax error, unexpected SUBOP, expecting FUNCTION 2 3 function main a integer returns real; 4 b: integer is * 2; syntax error, unexpected MULOP 5 c: real is 6.0; 6 begin 7 if a > c then 8 b + / .4; syntax error, unexpected DIVOP 9 else 10 switch b is 11 case => 2; 12 case 2 => c;</pre>	<pre>\$./compile < syntax5.txt 1 // Multiple Errors 2 3 function main a integer returns real; Syntax Error, Unexpected INTEGER, expecting ':' 4 b: integer is * 2; Syntax Error, Unexpected MULOP 5 c: real is 6.0; 6 begin 7 if a > c then 8 b + / 4.7; Syntax Error, Unexpected MULOP 9 else 10 switch b is 11 case => 2; Syntax Error, Unexpected ARROW, expecting INT_LITERAL 12 case 2 => c; 13 endswitch; Syntax Error, Unexpected ENDSWITCH, expecting CASE or OTHERS 14 endif; 15 end; Lexical Errors 0 Syntax Errors 5 Semantic Errors 0</pre>	Multiple Errors
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