Test Result	End Goal	Test Condition
721 PM/Project 2 Skeleton Code * 5./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>\$./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'; end; Compiled Successfully</pre>	Function with a Real and Character Variables and Literals
*\$./compile <test6.txt 1="" 2<="" an="" function="" if="" statemnt="" td="" with=""><td><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></td><td>Function with an If Statemnt</td></test6.txt>	<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
\$./compile <test7.txt (1,="" 1="" 2="" 2,="" 3="" 3);="" 4="" 5="" 6="" 7="" 8="" a(1)="" a:="" and="" begin="" case="" fold="" function="" integer="" integer;="" is="" left="" list="" main="" of="" returns="" right="" statement="" switch=""> 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;</test7.txt>	<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
**./compile <test8.txt +="" -="" 1="" 2="" 3="" 3;="" 4="" 4;="" 5="" 6="" 7="" 8="" b="" b:="" begin="" c:="" c;="" end;<="" function="" initializations="" integer="" integer;="" is="" main="" multiple="" returns="" td="" variable=""><td></td><td>Multiple Integer Variable Initializations</td></test8.txt>		Multiple Integer Variable Initializations

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

\$./compile < test8.txt</pre>

```
$ ./compile < test13.txt
                                                                                                                                          Comprehensive
$./compile <test13.txt
                                                                       // Comprehensive Test with Nested If
                                                                                                                                         Test with
  1 // Comprehensive Test with Nested If
                                                                      function main a: integer, b: character, c: real returns real
    d: integer is #8e;
                                                                                                                                         Nested If
     function main a: integer, b: character, c: real returns real;
                                                                           e: real is 3.75;
f: character is 'A';
        d: integer is #8e;
         e: real is 3.75;
                                                                           g: list of integer is (1, 3, 5);
        f: character is 'A';
                                                                      begin
        g: list of integer is (1, 3, 5);
                                                                          if ~a > 5 & a < 1 & !(c = 5.8 | c <> .7E4) then
    if c >= 7.5E-2 & c <= 5.2 then
        when a >= d, a + 2 - 7.9E+2 / 9 * 4 : 8.9;
    elsif g(1) = a ^ 2 % 3 then
        a % 2 - 5 / c;
  8 begin
        if -a > 5 & a < 1 & !(c = 5.8 | c <> .7E4) then
            if c 7.5E-2 & c <= 5.2 then
               when a d, a + 2 - 7.9E+2 / 9 * 4 : 8.9;
            elsif g(1) = a ^ 2 % 3 then
              a % 2 - 5 / c;
 13
            else
              fold left + (1, 2, 3) endfold;
 15
            endif;
                                                                                    fold left + (1, 2, 3) endfold;
                                                                               endif;
                                                                                fold right - g endfold;
                                                                            endif;
                                                                  20 end;
                                                                Compiled Successfully
                                                                 ./compile < test14.txt
     // Comprehensive Test with Nested Switch
                                                                                                                                         Comprehensive
                                                                                                                                         Test with
                                                                        // Comprehensive Test with Nested Switch
     function main a: integer, b: real returns real;
                                                                                                                                          Nested Switch
                                                                   2
          c: integer is 8;
                                                                       function main a: integer, b: real returns real
          d: real is .7E2;
                                                                   4
                                                                             c: integer is 8;
  6 begin
                                                                             d: real is .7E2;
          switch a is
                                                                       begin
               case 1 => a * 2 / d ^ 2;
                                                                             switch a is
               case 2 => a + 5.3E+2 - b;
  9
                                                                                   case 1 => a * 2 / d ^ 2;
yntax error, unexpected CASE, expecting OTHERS
                                                                                   case 2 => a + 5.3E + 2 - b;
10
               case 3 =>
                                                                  10
                                                                                    case 3 =>
 11
                   switch dis
                                                                  11
                                                                                         switch d is
 12
                       case 1 => a % 2;
                                                                  12
                                                                                              case 1 => a % 2;
 13
                        others => 9.1E-1;
                                                                  13
                                                                                              others \Rightarrow 9.1E-1;
 14
                   endswitch;
                                                                  14
                                                                                         endswitch;
 15
               case 4 => a / 2 - c;
                                                                  15
                                                                                    case 4 => a / 2 - c;
 16
               others => a + 4.7 * b;
                                                                                    others \Rightarrow a + 4.7 * b;
                                                                  17
                                                                             endswitch;
                                                                      end;
                                                               Compiled Successfully
 ./compile <syntax1.txt
                                                                                                                                          Missing
                                                                                                                                         Operator in
   1 // Missing Operator in Expression
                                                                                                                                          Expression
     function main returns integer;
     begi n
         8 + 2 9 * 3;
syntax error, unexpected INT_LITERAL, expecting ';'
   6 end:
                                                                                                                                         Error in
                                                                                                                                         Function
                                                                                                                                          Header.
                                                                                                                                         Missing Colon
```

```
$./compile <syntax2.txt
                                                   $ ./compile < syntax2.txt</pre>
   1 // Error in Function Header, Missing Colon
                                                       1 // Error in Function Header, Missing Colon
                                                         function main a integer returns integer;
   3 function main a integer returns integer;
                                                   Syntax Error, Unexpected INTEGER, expecting ':'
syntax error, unexpected INTEGER, expecting ':'
         b: integer is 3 * 2;
                                                               b: integer is 3 * 2;
                                                          begin
     begi n
                                                               if a <= 0 then
        if a <= 0 then
             b + 3;
                                                               else
  8
         else
            b * 4;
                                                                   b * 4;
  9
 10
         endif;
                                                               endif;
 11 end:
                                                     11 end;
                                                   Lexical Errors 0
                                                   Syntax Errors 1
                                                   Semantic Errors 0
$./compile <syntax3.txt
                                                    $ ./compile < syntax3.txt</pre>
                                                                                                               Error in
                                                                                                               Variable
  1 // Error in Variable Declaration
                                                       1 // Error in Variable Declaration
                                                                                                               Declaration
  3 function main a: integer returns integer;
                                                           function main a: integer returns integer;
        b integer is
                                                                b integer is
syntax error, unexpected INTEGER, expecting ':'
                                                    Syntax Error, Unexpected INTEGER, expecting ':'
            if a > 5 then
                                                                    if a > 5 then
                a * 3;
  6
                                                       6
            else
                                                                    else
  8
                2 + 4;
                                                                         2 + a;
            endif;
  9
                                                                    endif;
         c: real is 3.5;
 10
                                                               c: real is 3.5;
 11
     begi n
                                                      11 begin
 12
        if a <= 0 then
                                                      12
                                                               if a \le 0 then
 13
            b + 3;
                                                      13
                                                                    b + 3;
 1 4
         else
                                                      14
                                                                else
            b * 4;
 15
                                                      15
                                                                    b * 4;
 16
         endif;
                                                      16
                                                                endif;
                                                      17 end;
                                                    Lexical Errors 0
                                                    Syntax Errors 1
                                                    Semantic Errors 0
$ . / compile < syntax4. txt
                                                                                                               Multiple
                                                                                                               Errors, Error in
   // Multiple Errors, Error in Case Clause and Missing Others Clause
                                                                                                               Case Clause
   function main a: integer returns integer;
   begi n
                                                                                                               and Missing
                                                                                                               Others Clause
        case 1 => a 2;
```

syntax error, unexpected INT_LITERAL, expecting ';'

endswitch;

```
// Multiple Errors, Error in Case Clause and Missing Others Clause
                                                                          function main a: integer returns integer;
                                                                              switch a is
                                                                    6 case 1 => a 2;
Syntax Error, Unexpected INT_LITERAL, expecting ';'
7 case 2 => 5;
                                                                      7 case 2
8 endswitch;
                                                                    Syntax Error, Unexpected ENDSWITCH, expecting CASE or OTHERS
                                                                    Lexical Errors 0
Syntax Errors 2
$ . / compile < syntax5. txt</p>
                                                                   $ ./compile < syntax5.txt</pre>
                                                                                                                                                    Multiple Errors
    1 -- Multiple Errors
                                                                       1 // Multiple Errors
syntax error, unexpected SUBOP, expecting FUNCTION
                                                                       3 function main a integer returns real;
                                                                   Syntax Error, Unexpected INTEGER, expecting ':'

4 b: integer is * 2;

Syntax Error, Unexpected MULOP
       function main a integer returns real;
           b: integer is * 2;
syntax error, unexpected MULOP
                                                                      5
6 begin
7 if a > c then
b + / 4.7;
whected
           c: real is 6.0;
    6 begin
           if a > c then
                                                                    Syntax Error, Unexpected MULOP
    8
 syntax error, unexpected DI VOP
           else
  10
              switch bis
                                                                    Syntax Error, Unexpected ARROW, expecting INT_LITERAL
                                                                                       case 2 => c;
  11
                    case => 2;
                                                                                     endswitch;
                    case 2 => c;
                                                                    Syntax Error, Unexpected ENDSWITCH, expecting CASE or OTHERS 14 endif; 15 end;
                                                                   Lexical Errors 0
Syntax Errors 5
                                                                    Semantic Errors 0
```