Test Cases

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1 Valid Test Cases

1.1 Simple 1

```
1  /* Simple test case */
2  {}$
```

Results: Valid

1.2 Simple 2

```
1  /* Test case for print statement */
2  {
3      print("i love compilers")
4  }$
```

Results: Valid

1.3 Regular

```
1  /* Test case for a 'regular' program*/
2  {
3      int a
4      a = 1
5      print(a)
6      boolean b
7      b = true
8      print(b)
9
10     {
11         int a
12         a = 2
13         print(a)
14     }
15
16     {
17         int a
18         a = 3
19         print(a)
20     }
21
22     string s
23     s = "stra"
24     print(s)
25
26     s = "strb"
27     print(s)
28
29     if (a != 5) {
```

```
30        print("true")
31    }
32
33    if (a == 5) {
34        print("false")
35    }
36 }$
```

Results: Valid

1.4   Multiple

```
1  /* Test case for multiple programs */
2  {
3      print("i love compilers")
4      int a
5      a = 2
6      string s
7      s = "ha"
8  }$
9
10 {
11     int b
12     b = 4
13     string s
14     s = "hey"
15 }$
```

Results: Valid

1.5   All Productions thx Tien

```
1  /* Test case for all productions - thx Tien */
2  {
3    /* Int Declaration */
4    int a
5    int b
6    string s
7    boolean z
8
9    z = true
10   s = "kai sucks"
11
12   a = 0
13   b = 0
14
15   /* While Loop */
16   while (a != 3) {
17       print(a)
18       while (b != 3) {
19             print(b)
20             b = 1 + b
21             if (b == 2) {
22               /* Print Statement */
23                 print("kai sucks"/* This will do nothing */)
24             }
25       }
26
27       b = 0
28       a = 1 + a
29   }
30 }$
```

Results: Valid

1.6 Crazy One Liner (Lex Pass)

```
1  /* Test case for crazy one liner */
2  +${hellotruefalse!======trueprinta=3b=0print("false true")whi33leiftruefalsestring!=
       stringintbooleanaa truewhileif{hi+++==!==}}/*aaahaha*/hahahahaha/*awao*/$
```

Results: Valid (for Lex)

1.7 Crazy One Liner Pt. 2 Thx Tien

```
1  /*Test case for all productions - thx Tien*/{/*IntDeclaration*/intaintbstringsbooleanzz=
       trues="kai sucks"a=0b=0/*WhileLoop*/while(a!=3){print(a)while(b!=3){print(b)b=1+bif(b
       ==2){/*PrintStatement*/print("kai sucks"/*Thiswilldonothing*/)}}b=0a=1+a}}$
```

Results: Valid

1.8 WhileStatement

```
1   /* Test case for WhileStatement */
2   {
3       string s
4       int a
5       a = 1
6       {
7           s = "hey there sexy"
8           int a
9           a = 2
10          print(a)
11      }
12      {
13          while (a != 5) {
14              a = 1 + a
15              print(a)
16          }
17          print(3 + a)
18          print(s)
19      }
20  } $
```

1.9 IfStatement

```
1   /* Test case for IfStatement */
2   {
3       int a
4       a = 1
5       if(1 == 1){
6           print("nums")
7       }
8       if(a == a){
9           print("ids")
10      }
11      if("hey" == "hey"){
12          print("strings")
13      }
14      if(true == (a == a)){
15          print("booleans")
16      }
17  } $
```

2 Warning Test Cases

2.1 Missing EOP

```
1  /* Missing EOP */
2  {
3      int b
4      b = 4
5      string s
6      s = "hey"
7  }
```

Results: WARNING: No EOP [$] detected at end-of-file. Adding to end-of-file...

3 Lex Fail Programs

3.1 Alan

```
1  /*  Provided By
2    - Compiler Tyrant
3    - Alan G Labouseur
4  */
5  {}$
6  {{{{{{}}}}}}$
7  {{{{{{}}}}}}$
8  {int  @}$
```

Results: ERROR: Unrecognized or Invalid Token [@] on line 8 col 5

3.2 Invalid String 1

```
1  /* Test case for placing $ in quotes */
2  {
3      print("i love com$pilers")
4      int a
5      a = 2
6      string s
7      s = "ha"
8      "
9  }$
```

Results: ERROR: Invalid character in String [$] on line 3 col 21

3.3 Invalid String 2

```
1  /* Test case for invalid characters in string */
2  {
3      string s
4      s = "cookies & cream"
5  }$
```

Results: ERROR: Invalid character in String [&] on line 4 col 17

3.4 Invalid String 3

```
1  /* Test case for placing \n in quotes */
2  {
3      "hey
4      there"
5  }$
```

Results: ERROR: Invalid character in String [\n] on line 3 col 8

3.5 Invalid String 4

```
1  /* Test case for missing ending quote */
2  int a
3  a = 4
4  string s
5  s = "hey there
```

Results: ERROR: Missing ending quote for String literal starting on line 5 col 4

3.6 Invalid Print

```
1  /* Test case for invalid print */
2  {
3      print("my name is 11")
4  }$
```

Results: ERROR: Invalid character in String [1] on line 3 col 22

3.7 Missing End Comment Brace

```
1  /* Test case for missing end comment brace */
2  {
3      print("my name is eleven")
4      /* hey i love compilers
5  }$
```

Results: ERROR: Missing ending comment brace (*/) for comment starting on line 4 col 4

4 Parse Fail Programs

4.1 Invalid StatementList

```
1  /* Test case for invalid StatementList */
2  {
3      4 + 2
4  }$
```

Results: ERROR - Expecting [TRbrace], found [TDigit] on line 3

4.2 Invalid Expr

```
1  /* Test case for invalid Expr */
2  {
3      int a
4      a = a + 2
5  }$
```

Results: ERROR - Expecting [TRbrace], found [TDigit] on line 3

4.3 Invalid VarDecl

```
1  /* Test case for invalid VarDecl */
2  {
3      int 4
4  }$
```

Results: ERROR - Expecting [Id], found [TDigit] on line 3

4.4 Invalid Print Pt. 2

```
1  /* Test case for invalid Print pt. 2 */
2  {
3      print("$)
4  }$
```

Results: ERROR - Expecting [Expr], found [TEop] on line 3
ERROR - Expecting [Block], found [TRparen] on line 3

4.5 Incomplete BooleanExpr

```
1  /* Test case for incomplete BooleanExpr */
2  {
3      s = "strb"
4      print(s)
5
6      if (a != ) {
7          print("true")
8      }
9  }$
```

Results: ERROR - Expecting [Expr], found [TRparen] on line 6

4.6 Incomplete IntExpr

```
1  /* Test case for incomplete IntExpr */
2  {
3      int a
4      a = 1 +
5      print(a)
6  }$
```

Results: ERROR - Expecting [Expr], found [TPrint] on line 5