

# 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