CPSC326 | Homework 2: SimpleParser | 2/12/2025 | Arjuna Herbst

I designed positive test cases that involved passing multiple parameters into a function, nested if else statements, and a complex while statement. The reason being that these were areas I struggled with while completing this assignment. When I thought I was done implementing the recursive descent methods, I ran the tests and found that I was getting one common error across 20+ tests. While checking for a proper function declaration, I saw that for every test the error would be "PARSE_ERROR: expecting ')' found …" where the blank was the first param being passed into the function. Once I figured out that it was my function_call method and how I was checking for return types, I ran into another problem: "PARSE_ERROR: expecting '}' …". Same as above but for the fields in the function. It turned out to be my stmt method. Since both function_call and var_rvalue start with ID, I wasn't checking for both correctly, causing my parser to be offset and break.

Positive Test Cases:

```
1.
    void foo(a: int, b: string, c: bool) {
      x = 5
    }
2.
    void check(x: int) {
      if x > 10 {
        if x < 20 {
          print("Between 10 and 20")
        } else {
          print("Greater than or equal to 20")
        }
      } else {
        print("Less than or equal to 10")
      }
    }
3.
    void loopFun() {
      while x < 10 and y != 0 {
        y = y - 1
        if y / 2 == 0 {
          print("Even decrement")
        }
      }
    }
```

For my negative tests, I figured that since I struggled with checking for brackets due to advancing where I shouldn't have, etc. it would be useful to make test cases where I am either missing a bracket or shouldn't get to the closing bracket.

Negative Test Cases:

```
1.
      void brokenFun() {
        x = 5
2.
      void brokenAssignment() {
        x = 5 +
      }
```