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Semester Project – Function Overloading

Goals:

- Implement function overloading into MyPL.
- Learn more about how function overloading implementation works.

MyPL Syntax:

- Allow the user to have functions with the same name but with different parameter types, number of parameters, and return types.

```
// different parameter types

fun int f(int x, int y) {}

fun int f(double x, double y) {}


// different parameter sequence

fun int f(int x, double y) {}

fun int f(double x, int y) {}


// different number of parameters

fun int f(int x) {}
```

eg: "f" to:
"_f_int_double"
"_f_double_int"

Plan:

- Update the SymbolTable class to take function parameters along with function names.
    - Similar to TypeInfo but since function names can no longer be our unique key (because function overloading uses the same function names) we need to add parameters to our key.
- Update Static Checker to allow for duplicate function names and to check for unique function names and parameter name sequences.

✳ might consider some of "name mangling"

form ... to re-use existing machinery ...

Test Cases:

My initial positive test cases will check for allowing the above function overloading methods, different parameter types, different parameter sequences, and different number of parameters.

My initial negative test cases will check for an error when using the same function name and parameters.