

Semantic Analysis for Falak

Pass #1

- Create 2 global symbol tables (GST), one for variables (VGST) and the other one for functions (FGST).
- Add to the FGST all the API function information.
- Visit AST and add to FGST and VGST all the function and global variable information. Skip the body of the functions.

Pass #2

- Visit AST.
- Create a local symbol table (LST) for each function. Add parameters and local variables to LST.
- Perform semantic analysis on the body of each function.

Falak example

```
var a, b;
```

```
fun(p, q) {  
    var b, c;  
    a = 1;  
    b = 2;  
    c = p + q;  
    printi(c);  
    x = 42;  
    return x;  
}
```

```
var x;
```

```
main() {  
    var y, fun;  
    y = 3;  
    fun = 5;  
    b = readi();  
    prints("Hello!");  
    println();  
    fun(a, x * fun);  
}
```