

## 17-355/17-655/17-819: Program Analysis

### Interprocedural Analysis

#### In-Class Exercises

February 11, 2019

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1. Draw an interprocedural control flow graph for the following code, and identify the problem with performing a straightforward dataflow analysis on the resulting CFG:

```
1: fun double (x: int) : int
2:   y := 2 * x
3:   return y

4: fun main () : void
5:   z := 5
6:   w := double(z)
7:   z := 10 / w
8:   z := 0
9:   w := double(z)
```

2. Analyze the following program using context-sensitive interprocedural constant propagation analysis:

```
function iid(x, y)
    if x <= 0
        return y
    else
        return iid(x-1, y)
```

```
function main(input)
    a = iid(1, 2)
    b = iid(input, 7)
```