



Daily Coding Problem #188

Problem

This problem was asked by Google.

What will this code print out?

```
def make_functions():  
    flist = []  
  
    for i in [1, 2, 3]:  
        def print_i():  
            print(i)  
        flist.append(print_i)  
  
    return flist  
  
functions = make_functions()  
for f in functions:  
    f()
```

How can we make it print out what we apparently want?

Solution

The code will print out:

```
3  
3  
3
```

The issue here is that the variable `i`, used in `print(i)`, is bound to the `i` outside of the function scope. Since it's a variable that gets updated in the for loop, it means that the last value the `i` takes

on will get used in the print, which is 3.

To remedy this, we can capture the current state of `i` inside a closure, and pass the `i` in to that function:

```
def make_functions():
    flist = []

    for i in [1, 2, 3]:
        def print_i(var):
            def print_var():
                print(var)
            return print_var
        flist.append(print_i(i))

    return flist

functions = make_functions()
for f in functions:
    f()
```

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