

## Fibonacci Function

### Fibonacci Function

For the Fibonacci function we can take the Fibonacci code that we've seen previously, and convert it into a function by adding a function name (with a `def` statement) and a return statement. We also remove all `print` statements from the function, as we prefer the main program deals with all of the user (I/O) Input/Output (where possible). Unlike the previous functions, the Fibonacci program won't return a Boolean, instead it returns an integer, and that integer is the Fibonacci number that is at the position indicated by the input parameter `InputNumber`:

#### *Fibonacci FUNCTION*

```
def CalcFib(InputNumber):
    Fib1 = 1
    Fib2 = 0
    FibNumber = 1

    while (InputNumber >= 1):
        FibNumber = Fib2 + Fib1
        Fib1 = Fib2
        Fib2 = FibNumber
        InputNumber = InputNumber - 1
    # EndWhile;
    return FibNumber

# END CalcFib.
```

As before, the main part of the program, which is code that can follow the function in the same file deals with the Input and Output (I/O) to the users:

```
GetValue = int(input("Please input value: "))
print("Fibonacci Number is", CalcFib(GetValue))
```

And if the number inputted is 10, then we will get the following output:

```
Fibonacci Number is 55
```

If we wanted to print out the first 20 Fibonacci number we can do it by changing the main program from a simple I/O request into a print statement in a loop, as follows:

```
FibCount = 1
while (FibCount < 21):
    print(FibCount, "Fib is", CalcFib(FibCount))
    FibCount = FibCount + 1
# EndWhile;
```

This calls the function 20 times with the numbers 1 to 20 in the variable `FibCount`.

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