

# Python Test File

September 24, 2020

## 1 Testing syntax

```
[1]: print("Welcome to AMATH 481: Scientific Computing")
```

Welcome to AMATH 481: Scientific Computing

```
[3]: a = 10
      a += 1
      a
```

```
[3]: 11
```

```
[4]: "Welcome to AMATH 481: Scientific Computing"
```

```
[4]: 'Welcome to AMATH 481: Scientific Computing'
```

```
[7]: a = 10
      for i in range(10):
          a += i

      print(a)
```

55

```
[9]: for i in range(10):
      print(i)
```

0  
1  
2  
3  
4  
5  
6  
7  
8  
9

## 2 Fibonacci Sequence Problem

```
[29]: def fib(n):  
      m = n*1.0  
      A = []  
      if m.is_integer() == False:  
          print("Error:  the input must be a positive integer")  
  
      elif n == 1:  
          A = [0]  
          print(A)  
      elif n == 2:  
          A = [0, 1]  
          print(A)  
      elif n > 2:  
          A = [0, 1]  
          for i in range(n-2):  
              A.append(A[i] + A[i+1])  
          print(A)  
      else:  
          print("Error:  the integrer must be positive")
```

```
[30]: fib(32)
```

```
[0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, 2584,  
4181, 6765, 10946, 17711, 28657, 46368, 75025, 121393, 196418, 317811, 514229,  
832040, 1346269]
```

```
[31]: fib(3.2)
```

```
Error:  the input must be a positive integer
```

```
[32]: fib(-2)
```

```
Error:  the integrer must be positive
```

```
[33]: fib(5)
```

```
[0, 1, 1, 2, 3]
```

```
[ ]:
```