

PSDD – Creating code – TASK 1

To complete this worksheet you require a working webserver, e.g. WOS (website on a stick).

Aim

The aim of this worksheet is to:

- Develop a php program using the design provided

Skills and knowledge

Skills and knowledge covered:

- While loops
- Php code
- coding

Outline

You have been given a problem definition, test data, algorithm design and screen design. You need to create and test the php program code for this problem.

Problem Definition

Create a program that displays the Fibonacci number sequence up to the number entered, where a Fibonacci number $F_n = F_{n-1} + F_{n-2}$.

Test Data

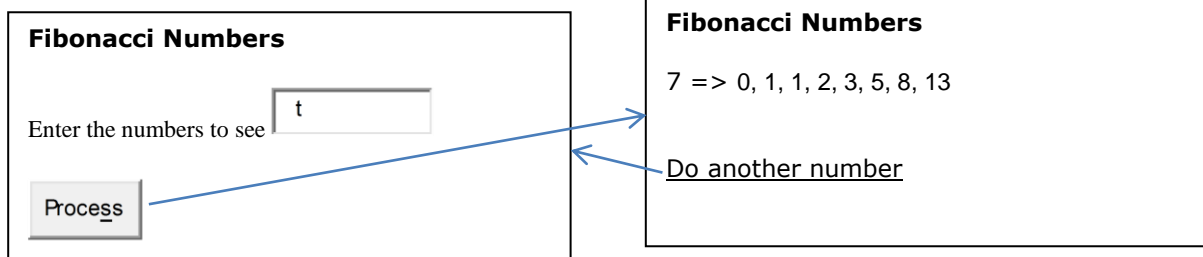
Example test data, 0 - Expected output is 0
 Example test data, 3 - Expected output is 0, 1, 1, 2
 Example test data, 5 - Expected output is 0, 1, 1, 2, 3, 5
 Example test data, 7 - Expected output is 0, 1, 1, 2, 3, 5, 8, 13

Algorithm

```
BEGIN Fibonacci(num)
count = 0
fn1 = 0
fn2 = 1
WHILE count <= num
    print fn1
    sum = fn1 + fn2
    fn1 = fn2
    fn2 = sum
    count = count + 1
ENDWHILE
END
```

```
BEGIN Main
    Get num
    Fibonacci(num)
END
```

Screen Design



Extension activity

1. Add error detection to only allow numbers ≥ 0 to be entered
2. Convert the WHILE loop to a FOR loop
3. Rewrite the algorithm to use a recursive function (very hard)