1811ICT/2807ICT/7001ICT Programming Principles Workshop 5

School of Information and Communication Technology

Griffith University

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| Goals | In this workshop we create interactive scripts that make decisions and/or use for loops. |
| When | Week 6 |

# Before your workshop class:

* Read the whole document.
* Review the lecture notes sections 1 to 14.

# Workshop activities

At any stage, when you are stuck, *ask your instructor*!

## Problem 1

*Problem:* In mathematics, the Fibonacci sequence is defined such that each Fibonacci number is the sum of the two preceding ones, starting from 0 and 1. That is,

F1 = 0, F2 = 1, F3 = 1, F4 = 2, ..., Fn = F(n-1) + F(n-2).

Write a program that given an input n, outputs the first n Fibonacci numbers. The format of output is that at most 4 numbers can be displayed in a row.

Example run:

|  |
| --- |
| Enter a positive number: 6  0 1 1 2  3 5  Enter a positive number: 10  0 1 1 2  3 5 8 13  21 34 |

*Testing*: Test your code for the above example input.

## Problem 2

*Problem:* Given an input number n, print a diamond shape with 2\*n-1 rows.

Example run:

|  |
| --- |
| Enter a positive number: 3  xxx  xxxx  xxxxx  xxxx  xxx |

*Testing*: Test your code for the above example input.



**How would you change the code to ask the user which symbol to use until a symbol that is not a number or letter is entered?**

## Problem 3

*Problem:* A palindrome is a number or a text phrase that reads the same backwards as well as forwards. Examples of palindromes are 123321, 1234321, 55555, 22, 454, 1, 0. Write a program that reads in a positive integer number and prints out whether that number is a palindrome.

Example run:

Enter a positive number: 12321

12321 is a palindrome

Enter a positive number: 1234

1234 is not a palindrome

*Testing*: Test your code for the above example input.

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**Well done for finishing these activities!**