

# INF1511 Unit 5 Visual Programming I

## Functions and Procedures

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Define tomorrow.

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# NEWS

- TUTORS – none yet linked!
- TEXTBOOK – Please use the additional resources from the safari / o'riley sources.

# Overview

- The theory of **functions and procedures** in programming.
- The practical application (and demonstration) of **functions and procedures** in programming.
- The assessment of learning in this unit.
- The additional resources available for this unit.

# Theory – What are functions and procedures in programming?

- Functions are .....
- Procedures are ...
- Parameters are ...
- A system. There is always input, processing and output.
- A function has input, processing and output.

# Functions

- YOU need to create (define) the function.
- Then you need to USE the function.
- A function is defined as a group of statements that can be *invoked* several times.
- There are built in functions (you can use) and there are own functions (you define and use).

# Functions

- To use a function, you need to call the function using a function call.
- You can also pass functions as an argument to another function!
- The **def** statement is used to define a function.
- When calling a function, the data sent is call arguments, and the variables in the function that receive the arguments are call parameters.

# Functions and variables

- Variables
- Local – only scope within the body of the function
- Global – scope not bound by function

# Application of functions to sequences

- Strings, lists and tuples
- Methods: filter(), map() and reduce().
- Implement methods, we use functions:
- Filter(function, sequence)



## Other function applications

- Iterators and generators and the `yield` statement
- Module – a file that consists of functions and variables used for a task. Can be imported and reused. Use the *import* statement.
- E.g. calendar module

# Programming elements

- Literals - \_\_\_\_\_
- Variables - \_\_\_\_\_
- Keywords (30 in Python ... and else elif exec ... )
- Comments #
- A keyword is IF and ELIF
- A keyword is FOR
- A keyword is WHILE
- Functions are declared! The keyword is .....

## Assessment for Unit 5

- **Theory MCQ quiz** will become available today. One attempt. Available until 9 October 2023.
- **Programming activities** for this unit on Jupyter Notebook page. Practise! Use this to complete Assignment 5.
- **Practical MCQ quiz** (Assignment 5) will become available today. One attempt. Available until 9 October 2023.

# Practical application

- Demonstrate the syntax and use of functions and procedures.
- Using ANACONDA programming environment.
- Please download the Jupyter notebook page or the PDF.



# Thank you

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