Introduction to Programming

Exercises

Week 1

Prior to attempting these exercises ensure you have read the lecture notes and/or viewed the video, and also completed the practical. You may wish to use the Python interpreter in interactive mode to help work out the solutions to some of the questions.

Download and store this document within your own filespace, so the contents can be edited. You will be able to refer to it during the test in Week 6.

Enter your answers directly into the highlighted boxes.

For more information about the module delivery, assessment and feedback please refer to the module within the MyBeckett portal.

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*Answer:*

The name of the programming language that we will be using on this module is python. The version of programming language we are using is python 3.2

ddssdSs=aaaasddddfssshssddasssassddssdsddddssddPhassddhss

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A computer program takes some *input*, performs some *processing* then…. what?

*Answer:*

A computer program takes some input, performs some processing then provides output.

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What generation of programming language is *machine code*?

*Answer:*

Machine code is first generation programming language.

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Which of the following is known as a second generation programming language?

* C++
* Java
* Assembly
* R
* Python

*Answer:* Assembly

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State one problem associated with writing code in Assembly Language.

*Answer:*

Programming is still fairly difficult and time consuming.

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What generation of programming language is *Python*?

*Answer:*

Python is third generation programming language.

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What is the purpose of a *compiler*?

*Answer:*

A compiler is used to convert code into assembly/machine code.

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The Python interpreter uses an interaction model called **REPL**. What does this stand for?

*Answer:*

REPL stands for Read-Eval-Print Loop.

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Is it true that Python development always has to take place using *interactive-mode* within the Python interpreter?

*Answer:*

Yes it is true that Python development always has to take place using *interactive-mode* within the Python interpreter.

# \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What does the term IDE stand for?

*Answer:*

IDE stands for Integrated Development Enivronment.

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What is the main reason why programmers use *code libraries*?

*Answer:*

The main reason is to optimized code to simply and expedite their development process.

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The Python language is often used in the field of *data-science*. What other language specifically supports *data-science*?

*Answer:*

SQL, R and SPSS are other language specifically supports data-science.

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An expression within a programming language consists of *operands* and *operators*.

Given an expression such as: 20 + 10, which part of this is the *operator*?

*Answer:*

The operator is +

And, which part of this is the *operand*?

*Answer:*

The operand is 20 and 10

# \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Within Python, what calculation is performed by the ‘\*’ operator?

*Answer:*

Within python, multiplication is performed by the \* operator.

And, what calculation is performed by the ‘/’ operator?

*Answer:*

And, division is performed by the / operator.

And, what calculation is performed by the ‘\*\*’ operator?

*Answer:*

And, exponentiation is performed by the \*\* operator.

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Using the information about expression evaluation provided in the related tutorial, evaluate each of the following expressions **in your head** and type the result in the answer boxes below. Remember that an operator precedence is applied, but can be overridden by the use of parentheses.

1. 100 + 200 - 50 *Answer:*

250

1. 10 + 20 \* 10 *Answer:*

210

1. 20 % 3 *Answer:*

2

1. 20 / (2 \* 5) *Answer:*

20/2\*5=20/10=2

1. 20 / 2 \* 5

*Answer:*

2

1. 10 \* 2 + 1 \* 3 *Answer:*

20+3=23

1. 5 + 10 \*\* 2 *Answer:*

5+100=105

1. (10 + 2 / 2) + ((10 \* 2) \*\* 2) *Answer:*

(10+2/2)+400=(10+1)+400=411

# \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the Python interpreter to input and then execute a simple Python expression that adds the three numbers 100.6, 200.72 and 213.3, then write the result in the answer box below.

*Answer:*

514.62

# \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the Python interpreter to input and then execute a simple Python expression that multiplies the three numbers 20.25, 100 and 23.9, then write the result in the answer box below.

*Answer:*

48397.5

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*Answer:*

Run time Exception.

# \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What type of error is typically easier to identify? A *syntax* error? Or a *logical* error?

*Answer:*

Syntax error is typically easier to identify.

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What type of message is used by the Python interpreter to report run-time errors?

*Answer:*

Trackback message is used by the python interpreter to report run-time errors.T

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What command can be used to exit the Python interpreter?

*Answer:*

To exit the python interpreter you can use exit() and quit() commands.

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**Exercises are complete**

Save this logbook with your answers. Then ask your tutor to check your responses to each question.