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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What is the name of the programming language that we will be using on this module? What version of the language are we using?

Answer:The name of the programming language that we will be using on this module is python. We are using version python3. 

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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 output.

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What generation of programming languages is machine code?



Answer:Machine code is the first generation of 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 is known as a second generation programming language.

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State one problem associated with writing code in Assembly Language.



Answer:Different CPUs require different Assembly Language.

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What generation of programming language is Python?



Answer: Python is a third generation programming language.

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What is the purpose of a compiler?



Answer:A compiler translates third generation languages 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:No,Python development can be used interactive-mode not always.

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What does the term IDE stand for?



Answer:IDE stands for Integrated Development Environment.

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What is the main reason why programmers use code libraries?



Answer: It provides pre-written code that programmers can use to create applications quickly and easily.

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



Answer: R 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: Operator is the +.

And, which part of this is the operand?



Answer: Operands are the numbers 20 and 10

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



Answer: Multiplication is performed by the ‘\*’ operator.

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

Answer: Division is performed by the ‘/’ operator.

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



Answer: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.

a) 100 + 200 - 50



Answer: 250

b) 10 + 20 \* 10



Answer: 210

c) 20 % 3



Answer: 2

d) 20 / (2 \* 5)



Answer: 2.0

e) 20 / 2 \* 5

Answer: 50.0

f) 10 \* 2 + 1 \* 3



Answer: 23

g) 5 + 10 \*\* 2



Answer: 105

h) (10 + 2 / 2) + ((10 \* 2) \*\* 2)



Answer: 411.0

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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

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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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Use the Python interpreter to input and then execute a simple Python expression that divides the number 10 by 0, then write the result in the answer box below.



Answer: ZeroDivisionError: division by zero.

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



Answer: A syntax error is easier to identify.

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



Answer: The interpreter will stop with a message describing the exception.

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What command can be used to exit the Python interpreter?



Answer: exit() is used to exit the Python interpreter.

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Exercises are complete

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