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:

Python, we are using Python 3.10.7

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

Answer:

Then gives the output

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What generation of programming language is machine code?

Answer:

1GL

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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:

Writing code in assembly language consumes a lot of time and effort while it’s also very complex and difficult to understand and remember the syntax.

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What generation of programming language is Python?

Answer:

3GL

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What is the purpose of a compiler?

Answer:

A compiler translates high-level programming language into machine-level language

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

Answer:

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, it’s not true.

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What does the term IDE stand for?

Answer:

Integrated Development Environment

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What is the main reason why programmers use code libraries?

Answer:

Code libraries are useful tools that provide pre-written code which makes programmer’s job

easier as they can use it 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:

JavaScript, Scala, R, SQL, etc.

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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:

“+” is the operator.

And, which part of this is the operand?

Answer:

20 and 10 are operands.

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

Answer:

Multiplication

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

Answer:

Division

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

Answer:

Exponent

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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

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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

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

Answer:

Traceback message

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What command can be used to exit the Python interpreter?

Answer:

Quit()

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Exercises are complete

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

question.