COMP101

Introduction to Programming 2019-20

Assignment-01

Issue Date: **Monday 7th October 2019**

Submission Date: **Monday 14th October (12:00 noon)**

Summary:

Assignment-01 is worth 12% of the total marks for COMP101.
The assignment uses **sequencing and I/O control of strings and numbers**
You must submit an attempt at this assignment else a fail grade for the module will be awarded.

Guidance:

Assessment is based on design, clarity, accuracy and appropriate use of code, testing and documentation.

Deadline and submission details:

a) Submit **one** .py file with filename in format of:

familyName_givenName-CA01.py e.g. Smith_John-CA01.py

Within the code, the first 3 lines should be comment lines as follows:
#Your University id and filename
#Month and Year of coding
#Brief description of the problem solved

b) Submit one .pdf file containing your Python code listing, test table and pseudocode.
If you attempt it, put your extended requirements test table and explanation in the document after these
Use the testing template for your evidence of testing

c) Your documents are to be submitted electronically via the department submission server at https://sam.csc.liv.ac.uk/COMP/Submissions.pl

Earlier submission is possible, but any submission after the deadline attracts the standard lateness penalties - see http://www.csc.liv.ac.uk/department/regulations/practical.html

Plagiarism and collusion guidelines will apply throughout the assignment submission

COMP101 Assignment-01 2019-20

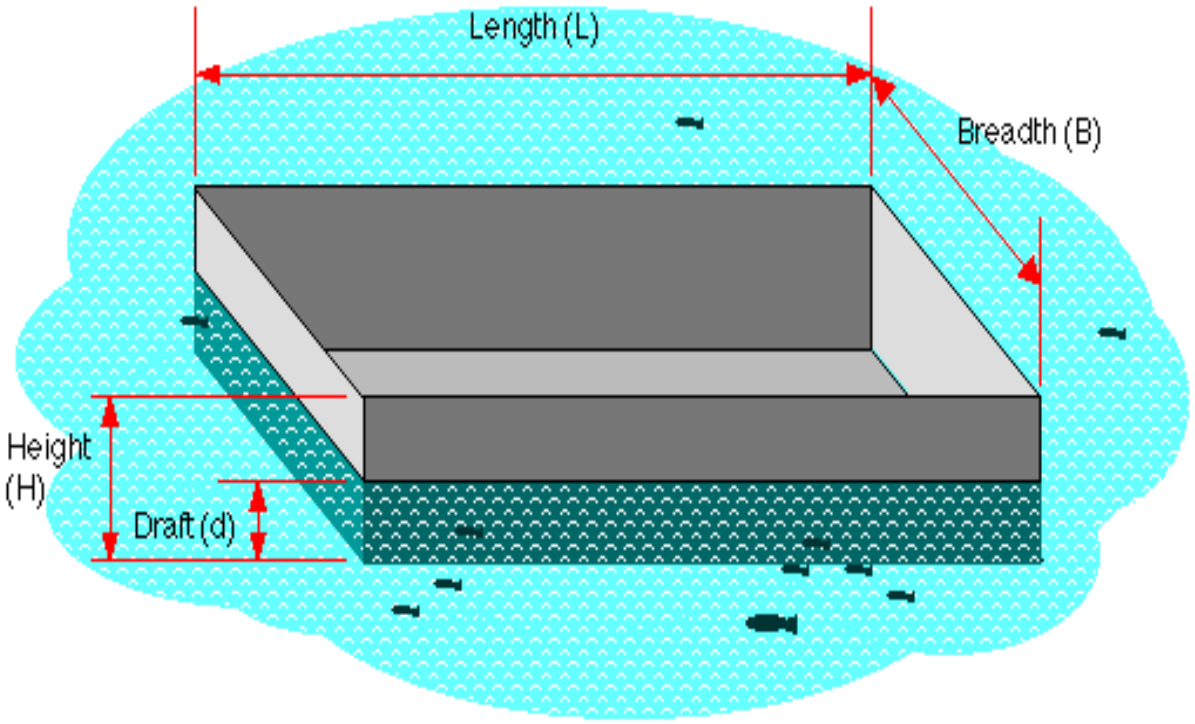
Assessment Information

Assignment Number	01 (of 07)
Weighting	12%
Assignment Circulated	See front page
Deadline	See front page
Submission Mode	e-submission
Learning outcome assessed	LO4: Use a suitable Integrated Development Environment to carry out implementation, interpretation/compilation, testing and execution LO7: Develop debugging skills to correct a program
Purpose of assessment Marking criteria	Assessment of using sequence constructs to control I/O of strings and numbers in successful calculations for a given problem Total marks over seven questions as a percentage
Submission necessary in order to satisfy module requirements?	Yes Assignments are not marked anonymously
Late Submission Penalty	Standard UoL Policy.

Problem Specification:
Develop and implement a Python program which, given an iron barge defined in terms of inputs (in metres) for length (L), breadth (B) and height (H), outputs the draft and interim calculations.

The barge is basically an ‘empty box’ with no lid.

External factors such as the superstructure, the density of the water, combined weight of personnel etc do not need to be factored in.



Input:
Use suitable prompts for input.
No validation is required - assume input of valid numeric values

Process (Calculation):
a) weight of iron = 1.06kg per square metre

b) draft = mass of barge / (length*breadth)

c) mass = surface area of barge * weight of iron

d) surface area = total of area of each of the four walls plus the area of the floor

Output:
Output should be user-friendly and should include:

The values that were input
The surface area calculated
The mass calculated
The draft calculated
The height of the barge that is above the water line

Output design is at your discretion.

Mark scheme
Analysis and Design 20%
No pseudocode is needed for this first assignment

Implementation 60%

Testing 20%
Use appropriate test tables to show functionality for reasonable data

The mark scheme looks for:
A sequence construct (do not employ selection and iteration constructs)

Efficient use of variables to handle the input data and the use of these variables to make the code clear and readable, thus aiding maintenance and debugging

Appropriate output that benefits the user understanding

In-line comments, used sparingly, but effectively:
i.e. do not comment every single line

Appropriate testing to determine accuracy and/or problems – use a test table