A Level Bridging Work

Department: Computer Science

<table>
<tr><td colspan="2">A Level Syllabus and Assessment Structure:

Paper 7517
Paper 1, on computer, 40%
Paper 2, on paper, 40%
NEA, 20%</td></tr>
<tr><td>Required (Task Time: 10 mins)</td><td>Your first task is to install Python. Version 3.9 will be installed in school so you are advised to install this version. In reality, any version 3.4 will work without issue. You can install Python on Apple, Linux and Windows systems. Indeed some may come with a version pre-installed – just check the version.

You can download Python from https://www.python.org/. For some platforms, you will find it in the repository/app store. Again, just check what version you are installing.

Python is free software: you do not have to pay for it. You also do not need high end kit for it to run on. It runs well on a Raspberry Pi which costs less than £30.</td></tr>
<tr><td>Highly Recommended (Task Time: 1hr)</td><td>Introduction to Python - For anyone who did not complete a GCSE in Computer Science

Below is a list of mini-challenges for you to consider. This section is really only for students who have not completed a GCSE in Computer Science.

○ print the phrase "Hello World" on the screen. Ask the user to enter their age in years and return an approximate value in months.

○ Write a program that counts up to 100 (extension: can you do it without using for or while?)

○ Write a program that asks for a number and prints the corresponding times table. So if the user entered 7, it would print:
• 0 x 7 = 0
• 1 x 7 = 7
• 2 x 7 = 14
• 3 x 7 = 21
• ...

○ Write a program that asks the user for a number and prints a message indicating whether the number is a prime number or not.</td></tr>
<tr><td>Optional</td><td>If you have some prior experience of programming you might wish to consider one or two the following ideas:

• Create a higher lower guessing game. The computer selects a number between 1 and 100 and the takes guesses until they find the number. The program should prompt the user to guess higher or lower.
• Create a hangman style game. Give the computer a list of 100 random words to pick the target word from.
• Noughts and Crosses. Too easy? Then build a computer player to play against. Or build it so that two players can play on different machines.
• Draughts
• A basic platform game. Advanced. You will probably want to use the PyGame module for this. It can be downloaded for free too.</td></tr>
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