**BTEC Computing Python Baseline Test**

**Instructions**

* In the lesson today, you must work **independently** through the following challenges **without** looking back your previous programs
* Start at the beginning and do each challenge in turn, aiming to get as many challenges working as possible in the time available
* Write the solution to each challenge in a separate Python program
* Use the name of the challenge as the file name e.g. “1 Input and Output”
* At the end of the test upload the .py files for all your programs, whether they are working or not and complete the table below to show what you are handing in

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| --- | --- | --- | --- | --- |
| **Program file name to use** | **Challenge Description** | **Working** | **Not working** | **Not attempted** |
| **1**  **Input and Output** | Get the user to write in their name, age, address and favourite colour.  Print out “Hello ….. your address is ….. your age is ……… and your favourite colour is ……..” filling in the blanks using their input. | X |  |  |
| **2**  **Casting** | Ask the user for two numbers, add them together and then print out the answer on the screen as: “Your answer is …” | X |  |  |
| **3**  **Selection** | A user needs to input a number but it must be above 0 and below 100.  Write a program that will check whether the number is in the correct range. If it is, tell them they’re correct otherwise tell them whether the number is too high or too low. | X |  |  |
| **4**  **Iteration While** | Ask the user to enter a word. Have the program keep asking them to enter one while the user writes “continue” as their word. | X |  |  |
| **5**  **Iteration While** | Ask the user to enter a word. Have the program keep asking them to enter one until the user writes “quit” as their word. | X |  |  |
| **6**  **Arrays/Lists** | Make a list containing 5 TV show names.  Print out to the screen the first, third and fourth show in your list | X |  |  |
| **7**  **Iteration For** | Use a for loop that will read through your previous list and print out the name of each TV show in your list.  Your code should be set up so it would work on a list of any size | X |  |  |
| **8**  **Functions** | Make a function that takes two numbers as parameters. Your function will then multiply these two numbers together and return the result. Write a program that will use your function to show that it works correctly. | X |  |  |
| **9**  **String Manipulation** | Store your whole name as a string. Now use slicing to write out, on different lines:  The first letter  The last letter  The middle three letters | X |  |  |
| **10**  **File Handling** | You will find a text file attached to the test called names.txt. Download a copy to the same folder as where you are writing your programs.  The file has a name on each line. Write a program that will say “Hello” then a name for each one in the file. | X |  |  |
| **11**  **Decomposition** | Read the problem below and then implement it in code. You do not need to submit your written decomposition of how you’ve worked it out but make sure to comment your code to explain what you’ve done.  A computer generates a random number from 0 – 10. It then asks the user to make a guess. They have 5 attempts to get it right. If they get it correct, the program says they’ve won and ends. If they’re wrong, they’re asked to guess again and told how many attempts they have remaining. | X |  |  |
| **12**  **Binary Search** | Using your list from Challenge 6, ask the user for a TV show name and implement a binary search to inform the user whether or not the name the entered is in the list or not | X |  |  |