

Chapter 2: Iteration P1

Question Sheet 1

Instructions

You will need to use the textbooks from the shelf to complete the questions/tasks. GCSE for OCR Computer Science Student Book. You have all been given your own copy, so just type directly into this document.

1. What does the term iteration mean? the repetition of a process
2. What is the program construct called that causes iteration? A loop
3. What are the key programming terms that are used in most programming languages that signify a loop? Either something like for this amount of time or until also could be seen as a thing such as repeat 4 times ect...
4. What is the difference between a **definite loop** and an **indefinite loop**? A definite loop has a set amount until the iterations will stop whereas, as an indefinite loop has no set number of iterations and the iterations will only cease when a condition is met
5. Look at the pseudocode at the bottom of page 27 in the text book. To program that in Python you need to type the following. Type the code below into Python or Repl.it and explain what happened when you run the code.

It printed dog cat lama and goat on a separate line each

```
1 for i in ["dog", "cat", "lama", "goat"]: # repeat four times
2     print (i)
3
```

The letter i is just a variable we created to count the number of items in the list. We could've used the word WOW in place of i and the program would still work.

6. What kind of loop was used in the code above? for
7. Look at the pseudocode near the top of page 28 in your textbook. The code below is how you would program that pseudocode in Python. Type the code below into Python or Repl.it and explain what it does.

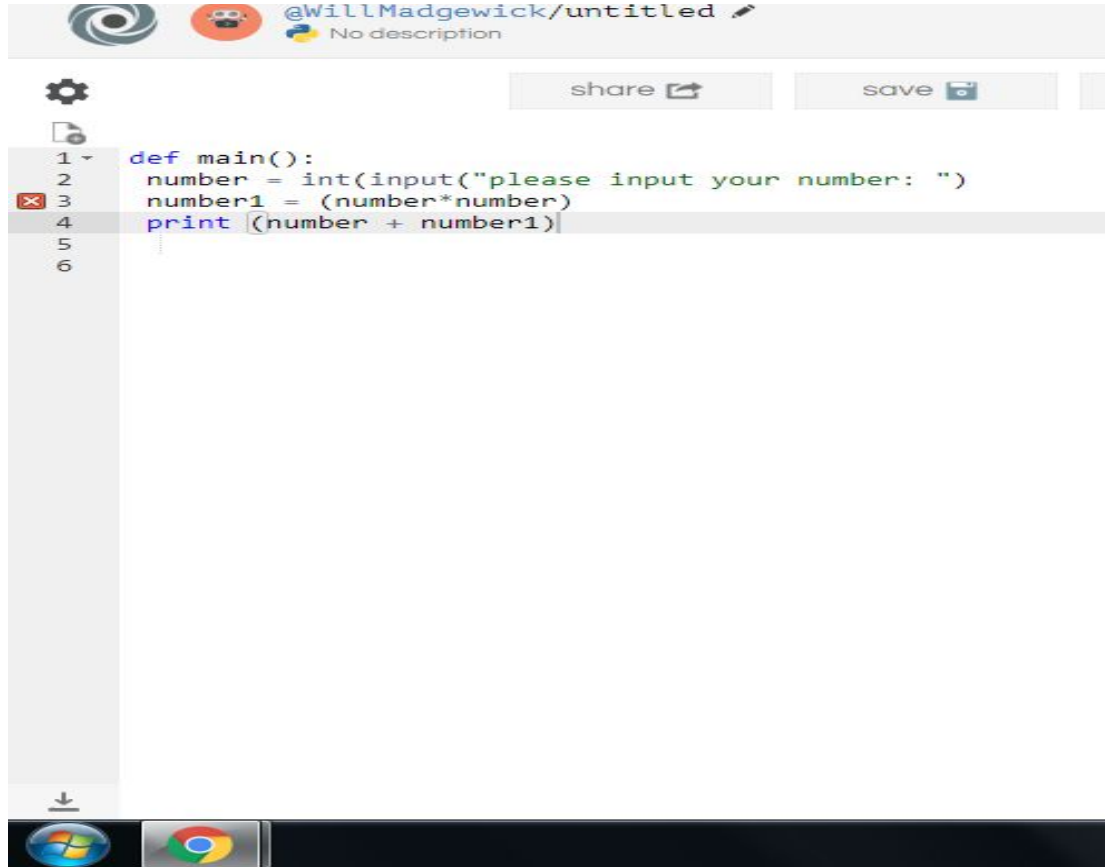
```
1 i = 0
2 while i < 10:
3     print (i)
4     i = i + 1
5
```

8. What kind of loop was used in the code above? A indefinite loop
9. Were the two code examples above definite or indefinite examples of iteration? indefinite

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10. Look at the worked example at the bottom of page 28 in the textbook. Try and program this pseudocode design in Python. Remember it is just pseudo code (English steps to solve a problem) so typing that as it is into Python wont work. Print screen your code below. Some tips that might help you:
- The input will need to be changed into a number by using int
 - You will also need a variable to count how many times it has been around the loop



The screenshot shows a web-based Python IDE interface. At the top, there's a header with a logo, a GitHub handle '@WillMadgewick/untitled', and a 'No description' label. Below the header, there are 'share' and 'save' buttons. The main area is a code editor with a line number margin on the left (1-6). The code is as follows:

```
1 def main():
2     number = int(input("please input your number: "))
3     number1 = (number*number)
4     print (number + number1)
5
6
```

At the bottom of the IDE, there are icons for Windows and Google Chrome.

11. The code below is slightly different to the task above. Explain how the code below is different from the example above? How do you get the program below to print different times tables? It is only going to print a set amount of times tables

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L 0

```
1  #Definite Loops
2
3  def TimesTable(times):
4      till = 12
5      counter = 0
6      while counter < till:
7          answer = counter * times
8          print (times, "X ", counter, "= ", answer)
9          counter = counter + 1
10
11     print("Times Table Complete")
12
13 TimesTable(4)
14
```

12. You have now finished all the tasks for today. If there is still time left in the lesson please continue to read the rest of Chapter 2. Do not pester your cover teacher and behave like good boys and girls :)