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| Worksheet IV |

1) Trace the following Python code and determine the variables’ value for each for-loop.



Assume that you will enter ‘2010’ as an input, start tracing the Python code when the value of variable *i* is as follows:

Note: yob stands for ‘year of birth’

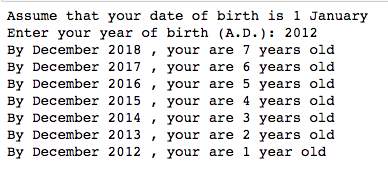
|  |  |  |
| --- | --- | --- |
| i | yob\_count | if i == yob |
| 2012 |  |  |
| 2013 |  |  |
| 2014 |  |  |
| 2015 |  |  |

- What is the purpose of yob\_count = yob\_count + 1 in this Python code? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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2) Rewrite the above Python code using While-Loop.

3) Modify the Python code in exercise 1) to generate the following outputs:

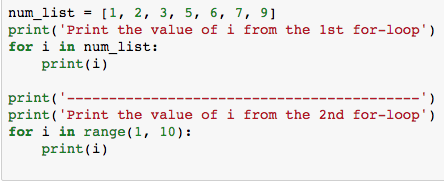


Hint: use range(start, end, -1) to start the range from a higher value down to a lower value with a

step -1. For example, range(5, 1, -1) is equivalent to 5, 4, 3, 2

4) Rewrite the Python code in exercise 3) using While-Loop.

5) Try the following Python code and **explain the difference** between the value of variable *i* printed from the 1st and 2nd loop.

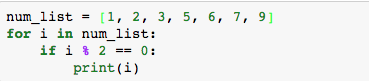


Discuss the difference between for ’i in num\_list’ and ‘for i in range(1,10)’

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6) What does the following Python code do?



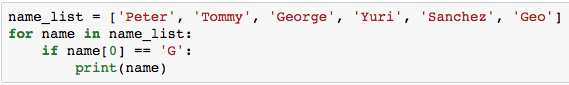
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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7) Modify the Python code in exercise 6) to print an odd number that is higher than 5 from num\_list.

8) Modify the Python code in exercise 6) to print a number that is higher than or equal to 3, but less than 7.

9) Explain what the following Python code does



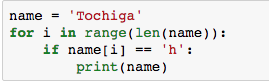
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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10) Modify the Python code in 9) to print a name from the name\_list if the third character of the name is alphabet ‘o’ and ‘i’.

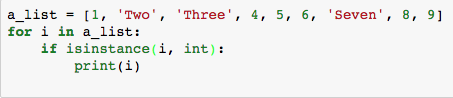
11)



This for-loop will go through each character in the variable, name. It then checks if a character ‘h’ appears in the variable, name. If yes, it prints that name on the screen.

12) Based on exercises 9) and 11), modify the Python code in 9) to print all the name in name\_list that contains character ‘o’.

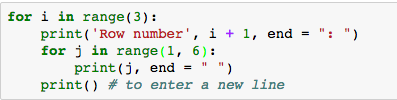
13)

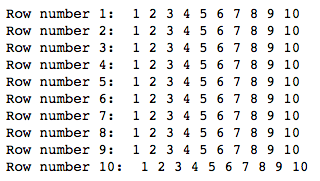


* What does the above Python code do?
* What is the purpose of the built-in function isinstance(x, int)? (Google to find the answer)

14) Modify the above Python code to print ‘Two’, ‘Three’ and ‘Seven’ on the screen.

15) Try the following Python code.



* Modify the code to print 10 rows each with values 1 to 10.
* Modify the code again to print odd rows (rows no. 1, 3, 5, 7 and 9) with even values (2, 4, 6, 8, 10) for each low.