Practical Computer Science Test – Quarter 2

Name: _____ Date: 18/11/2021

Squares and Powers - This program will print out the number, squares and powers of a number.

Work through the test from the beginning. Your program should build and grow –do not start new program for each point. You may use any textbook, OFS class resources and code from our class examples, worksheet answers and your own code/homework for this test. ***You are not allowed to search the Internet***. **Note:** The power of a number here means the input number to the power of the values from 1 up to and including the input number.

Instructions	***Program Display***
1. Output your name on the screen.	`John Jones`
2. Input a number	`Enter a number less than 10:  3`

3. Outputs all the values 1, 2, 3 etc. up to the input number.	`Enter a number less than 10:  3`
	`1`
	`2`
	`3`

4. Outputs the numbers and the squares correctly for all values up to the input number.	`1  1`
	`2  4`
	`3  9`

5. Outputs the number, squares and powers of all values up to the input number. In this example, the powers of the input number (3) are 3^1, 3^2, and 3^3.	`1  1  3`
	`2  4  9`
	`3  9  27`

6 Only accepts inputs between 1 and 9. This means 1 up to, and including 9.	`Enter a number less than 10:  11` `>>> Error please enter again`

7. Only accepts inputs of a number from 1 to 9. Keep asking for a number until a good one is entered.	`Enter a number less than 10:  -1`
	`>>> Error please enter again`
	`Enter a number less than 10:  10`
	`>>> Error please enter again`
	`Enter a number less than 10:`

8. The squares are aligned as shown.	`Enter a number less than 10:  5`
	`1  1  5`
	`2  4  25`
	`3  9  125`
	`4  16  625`
	`5  25  3125`

9. **All** the answers aligned (squares and powers).	`Enter a number less than 10:  9`
	`1  1  9`
	`2  4  81`
	`3  9  729`
	`4 16  6561`
	`5 25  59049`
	`6 36  531441`
	`7 49  4782969`
	`8 64  43046721`
	`9 81 387420489`

10. In the power column, place a comma every third digit as shown. The example shows for 9 but it should work for all other numbers less than 9 as well.	`Enter a number less than 10:  9`
	`1  1  9`
	`2  4  81`
	`3  9  729`
	`4 16  6,561`
	`5 25  59,049`
	`6 36  531,441`
	`7 49  4,782,969`
	`8 64  43,046,721`
	`9 81 387,420,489`