Python Practice Questiions – Set I

Q.1 Create a program that asks the user to enter their name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old.

Q. 2 Take a list, say for example this one:

a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]

(i) Write a program that prints out all the elements of the list that are less than 5.
(ii) Instead of printing the elements one by one, make a new list that has all the elements less than 5 from this list in it and print out this new list.
(iii) Write this in one line of Python.
(iv) Ask the user for a number and return a list that contains only elements from the original list a that are smaller than that number given by the user.

Q. 3 Ask the user for a number. Depending on whether the number is even or odd, print out an appropriate message to the user. Hint: how does an even / odd number react differently when divided by 2?
(i) If the number is a multiple of 4, print out a different message.
(ii) Ask the user for two numbers: one number to check (call it num) and one number to divide by (check). If check divides evenly into num, tell that to the user. If not, print a different appropriate message.

Q. 4 Create a program that asks the user for a number and then prints out a list of all the divisors of that number. (If you don't know what a divisor is, it is a number that divides evenly into another number. For example, 13 is a divisor of 26 because 26 / 13 has no remainder.)

Q. 5 Take two lists, say for example these two:
a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]
b = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13]

(i) Write a program that returns a list that contains only the elements that are common between the lists (without duplicates). Make sure your program works on two lists of different sizes.
(ii) Randomly generate two lists to test this
(iii) Write this in one line of Python

Q.6 Let's say I give you a list saved in a variable: a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]. Write one line of Python that takes this list a and makes a new list that has only the even elements of this list in it.

Q. 7 Generate a random number between 1 and 9 (including 1 and 9).
(i) Ask the user to guess the number, then tell them whether they guessed wrong or right.
(ii) Keep the game going until the user types “exit”.
(iii) Keep track of how many guesses the user has taken, and when the game ends, print this out.

Q. 8 Ask the user for a number and determine whether the number is prime or not. (For those who have forgotten, a prime number is a number that has no divisors.). Implement using functions.

Q.9 Write a program that takes a list of numbers (for example, a = [5, 10, 15, 20, 25]) and makes a new list of only the first and last elements of the given list. For practice, write this code inside a function.

Q. 10 Write a program that asks the user how many Fibonnaci numbers to generate and then generates them. Take this opportunity to think about how you can use functions. Make sure to ask the user to enter the number of numbers in the sequence to generate.(Hint: The Fibonnaci seqence is a sequence of numbers where the next number in the sequence is the sum of the previous two numbers in the sequence. The sequence looks like this: 1, 1, 2, 3, 5, 8, 13, …)

Submission Guide

1. Write Code in File.
2. Use proper variable names and comment properly.
3. Give File name proper ex. fibonacci_set1_10.py
4. Also write the procedure in file (commenting), how to run and what argument to supply.

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