

CS Homework #11

Deadline: December 19, 9:00 pm.

- Save your code as `lastname_homework11.py` and submit on Google Classroom.
- Please, run your code before submitting.
- If you get an error, try to fix it before submitting your homework.
- If you get help from anyone, please, make sure that you actually understand the solution.

Task 1

Create an empty list A. Use for loop and range to append to A all numbers from 30 to 10 (included), for example, 30, 28, 26, and so on. Create an empty list B. Append to B all *even* numbers from 40 to 20 (included).

Task 2

Create an empty list C. Write code that finds the numbers present in both A and B and append those numbers to C. Then create an empty list D. Write code that finds all *unique* numbers in A and B and append those numbers to D (that is, there should be no duplicates). Do NOT use Python sets to complete this task.

Task 3

Create a set `setA` which contains all elements of A. Create a set `setB` which contains all elements of B. Create a set `setC` that contains common elements in A and B, or "intersection". For this task, do NOT use the previously created list C. Instead, use Python set intersection method which has the following format: `x.intersection(y)`. Check if C and `setC` have the same elements (in no particular order).

Task 4

Create a set `setD` that contains all elements in A and B excluding duplicates. For this task, use Python set union method which has the following format: `x.union(y)`. Compare D and `setD`.

Task 5

Create a tuple of numbers from 1 to 8 and a tuple that contains the letters from "a" to "h". Using these two tuples, create a tuple that contains all coordinates of the chess board: ('a1', 'b1', 'c1', 'd1', 'e1', 'f1', 'g1', 'h1', 'a2', 'b2', 'c2', 'd2', 'e2', 'f2', 'g2', 'h2', 'a3', 'b3', 'c3', 'd3', 'e3', 'f3', 'g3', 'h3', 'a4', 'b4', 'c4', 'd4', 'e4', 'f4', 'g4', 'h4', 'a5', 'b5', 'c5', 'd5', 'e5', 'f5', 'g5', 'h5', 'a6', 'b6', 'c6', 'd6', 'e6', 'f6', 'g6', 'h6', 'a7', 'b7', 'c7', 'd7', 'e7', 'f7', 'g7', 'h7', 'a8', 'b8', 'c8', 'd8', 'e8', 'f8', 'g8', 'h8').

Task 6*

Using the same original tuples of numbers from 1 to 8 and letters from "a" to "h", create a nested tuple that contains all coordinates of the chess board: (('a1', 'b1', 'c1', 'd1', 'e1', 'f1', 'g1', 'h1'), ('a2', 'b2', 'c2', 'd2', 'e2', 'f2', 'g2', 'h2'), ('a3', 'b3', 'c3', 'd3', 'e3', 'f3', 'g3', 'h3'), ('a4', 'b4', 'c4', 'd4', 'e4', 'f4', 'g4', 'h4'), ('a5', 'b5', 'c5', 'd5', 'e5', 'f5', 'g5', 'h5'), ('a6', 'b6', 'c6', 'd6', 'e6', 'f6', 'g6', 'h6'), ('a7', 'b7', 'c7', 'd7', 'e7', 'f7', 'g7', 'h7'), ('a8', 'b8', 'c8', 'd8', 'e8', 'f8', 'g8', 'h8')).

Verify `yourtuple[2][2] == "c3"` is True.