

Homework #11 Lists. Sets. Tuples. Dictionaries. Introduction

Tasks:

1. Create an empty list A. Use for loop and range to append to A all even 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).
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.
3. Create a set setA which contains all elements of A. Create a set setB which contains all elements of B. Create a 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)` -- finds intersection of x and y. Check if C and setC have the same elements (in no particular order).
4. Create a 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)` -- finds union of x and y. Write code that verifies if D and setD have the same elements (again, the order does not matter).
5. Can you solve Task 4 using `x.update(y)` method. Explore what this method does using setA and setB. What is the difference between `x.union(y)` and `x.update(y)`. How can you use `x.update(y)` method to create setD that contains all elements of setA and setB, while preserving the original sets.