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1  1. Write a program that converts words present in a list into uppercase and stores them
   in a set.
2  INPUT
3  words = ['apple', 'banana', 'cherry', 'date']
4  uppercase_set = {word.upper() for word in words}
5  print("Set of uppercase words:", uppercase_set)
6  OUTPUT
7  Set of uppercase words: {'BANANA', 'CHERRY', 'DATE', 'APPLE'}
8
9  2. Write a program to create a set containing 10 random numbers in the range 15 to 45.
   Count how many of these numbers are less than 30. Delete all numbers that are greater
   than 35.
10 INPUT
11 import random
12
13 random_set = {random.randint(15, 45) for _ in range(10)}
14 less_than_30 = sum(1 for num in random_set if num < 30)
15 random_set = {num for num in random_set if num <= 35}
16
17 print("Random set:", random_set)
18 print("Count of numbers less than 30:", less_than_30)
19 print("Set after removing numbers greater than 35:", random_set)
20 OUTPUT
21 Random set: {16, 23, 30, 35}
22 Count of numbers less than 30: 2
23 Set after removing numbers greater than 35: {16, 23, 30, 35}
24
25 3. Create an empty set. Write a program that adds five new names to this set, modifies
   one existing name and deletes two names from it.
26 INPUT
27 names_set = set()
28 names_set.update(["Alice", "Bob", "Charlie", "David", "Eve"]) # Add five names
29 names_set.remove("Alice") # Delete one name
30 names_set.remove("David") # Delete another name
31 names_set.add("Allie") # Modify "Alice" to "Allie"
32 print("Modified set:", names_set)
33 OUTPUT
34 Modified set: {'Allie', 'Bob', 'Charlie', 'Eve'}
35
36 4. A set contains names which begin either with A or with B. Write a program to separate
   out the names into two sets, one containing names beginning with A and another with B.
37 INPUT
38 names_set = {'Alice', 'Andrew', 'Bob', 'Bella', 'Adam', 'Brian'}
39 a_names = {name for name in names_set if name.startswith('A')}
40 b_names = {name for name in names_set if name.startswith('B')}
41
42 print("Names starting with A:", a_names)
43 print("Names starting with B:", b_names)
44 OUTPUT
45 Names starting with A: {'Andrew', 'Alice', 'Adam'}
46 Names starting with B: {'Bella', 'Brian', 'Bob'}

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