# Module 7.5 Data Structures - Sets: Coding Questions

## Question 1: Write a function to remove duplicates from a list and return the unique elements as a set.

Hint: Convert the list to a set directly to remove duplicates, as sets do not allow duplicate elements.

## Question 2: Implement a function that takes two sets of product IDs from two different stores and finds the common IDs.

Hint: Use the intersection method or the & operator to find common elements between two sets.

## Question 3: Create a function to determine if a set is a subset of another set.

Hint: Use the issubset method to check if one set is a subset of another.

## Question 4: Write a function that takes a string and returns a set of unique characters in the string.

Hint: Convert the string to a set to automatically remove duplicate characters.

## Question 5: Develop a function that takes a list of sets representing skills required for different projects and finds the union of all skills.

Hint: Use the union method or the | operator to find the union of all sets in the list.

## Question 6: Implement a function to compare two sets and return a set of elements present in the first set but not in the second.

Hint: Use the difference method or the - operator to find elements unique to the first set.

## Question 7: Create a function that updates a set with elements from a list, ignoring any duplicates.

Hint: Use the update method to add elements from the list to the set, which will automatically ignore duplicates.

## Question 8: Write a function that accepts a set of names and sanitizes them by removing any whitespace and converting them to lowercase.

Hint: Iterate over the set, apply the strip and lower methods to each element, and store the results in a new set.

## Question 9: Develop a function that takes a set of email addresses and filters out invalid ones based on a list of valid domains.

Hint: Use a loop or set comprehension with a conditional to check the domain of each email against the valid domains.

## Question 10: Implement a function that calculates the symmetric difference between two sets of survey responses.

Hint: Use the symmetric\_difference method or the ^ operator to find elements in either set but not in both.