# TASK – WEEK 5

# TASK: Working with dictionaries, sets, and comprehensions in Python

## 1. Are two words anagrams?

- Write a Python script that checks whether two words are anagrams of each other.  
- Use a dictionary to count the frequency of each letter in both words.  
- Define two words, e.g. "listen" and "silent"  
- Modify one of the dictionaries (e.g., delete one letter) and print both to show the effect.

## 2. Invert a dictionary with duplicates in values

Given a dictionary where multiple keys may have the same value, invert it - such that values become keys, and keys become elements of a list.

Example:  
 grades = {  
 "Alice": "A",  
 "Bob": "B",  
 "Charlie": "A",  
 "Diana": "C"  
 }

Expected output:  
 {  
 "A": ["Alice", "Charlie"],  
 "B": ["Bob"],  
 "C": ["Diana"]  
 }

## 3. Set analysis for conference attendees

- There is a tech conference, and attendees are listed for three sessions:   
testing, development and devops.  
- Each attendee can choose one or more sessions.

testing = {“Ana, "Bob", "Charlie", "Diana"}  
development = {"Charlie", "Eve", "Frank", "Ana"}  
devops = {"George", "Ana", "Bob", "Eve"}

- Find attendees who attended all three sessions.  
- Find attendees who attended only one session.  
- Check if all testing attendees are also in the devops session.  
- Get a set of all unique attendees and sort them alphabetically.  
- Create a copy of the development set and clear the original.

## 4. Create data with comprehensions

- Use list comprehension to create a list of squares from 1 to 10.  
- Use set comprehension to create a set of numbers dividable by 7 between 1 and 50.  
- Use dictionary comprehension to create a new dictionary of **only students who passed   
(>= 60).**score = {"Alice": 85, "Bob": 59, "Charlie": 92}

- Use **nested dictionary comprehension** to create a weekly attendance log where:

- Students attend only on **Monday and Wednesday**  
- All other days are marked as False

- Input:

students = ["Michael", "David", "Liza"]  
 weekdays = ["Mon", "Tue", "Wed", "Thu", "Fri"]

- Expected output:

{  
 " Liza ": {"Mon": True, "Tue": False, "Wed": True, "Thu": False, "Fri": False},  
 " David ": {"Mon": True, "Tue": False, "Wed": True, "Thu": False, "Fri": False},  
 " Michael ": {"Mon": True, "Tue": False, "Wed": True, "Thu": False, "Fri": False}  
}

## Note

- Tasks are not mandatory; they are voluntary.  
- Tasks are not time-limited when they need to be done – ideally, they should follow up on a weekly presentation, but not necessarily.  
- Saved .py files send to emails:  
 [bosko.nikolic@endava.com](mailto:bosko.nikolic@endava.com)  
 [djordje.munizaba@endava.com](mailto:djordje.munizaba@endava.com)