Task 7 - Dictionaries

Dictionaries:

A **dictionary** in Python is a data structure that stores data in **key-value pairs**. Each key is associated with a value, and the key acts as a unique identifier for accessing its corresponding value.

Characteristics:

- Unordered
- Mutable
- **Efficient Lookup**: Accessing values by key is very fast.
- **No Duplicates**: Each key in a dictionary must be unique.

Syntax: `my_dict = {"key1": "value1", "key2": "value2"}`.

1. **Dictionary Operations**:
    - Adding key-value pairs: `my_dict["new_key"] = "new_value"`.
    - Accessing values: `my_dict["key1"]`.
    - Modifying values: `my_dict["key1"] = "new_value"`.
2. **Dictionary Methods**:
    - `.keys()`, `.values()`, `.items()`: Access keys, values, and key-value pairs.
    - `.get()`: Safely access values.
    - `.pop()`: Remove a key-value pair.
    - `.update()`: Update dictionary with another dictionary.

```python
student = {                                 # Creating a dictionary
    "name": "Ummed Singh",
    "sem": 5,
    "subject": "Python"
}

print("Name:", student["name"])             # Accessing a value

student["subject"] = "Java"                 # Modifying a value

student["company"] = "ByteXL"               # Adding a new key-value pair

print("Updated student record:", student) # Display updated dictionary

# Using dictionary methods
print("Keys:", student.keys())
print("Values:", student.values())
print("Items:", student.items())
```