Assignment # 04: Data Structures and Built-in methods (List and Dictionary)

Objective:

To help you understand:

- The use and implementation of Data Structures in programming for storing and manipulating records. And their built-in methods.

Part 1: SRMS using nested list

1. Write a menu-driven program to create a **Student Records Management System (SRMS)** using List and its methods. Your program must include the following features:
   a. **Add Student** - Take name, roll number, subject and marks as input and store them into a list.
   b. **Display students** - show all stored students records in a readable format.
   c. **Search Student** - Search for a student by roll number and display if found.
   d. **Update record** - Update the marks of student using roll number.
   e. **Delete Record** - Delete a student record using roll number.
   f. **Sort Record** - Sorting students records by marks (descending order).
   g. **Exit.**

Part 2: SRMS using list of dictionaries

2. Write a menu-driven program to create a **Student Records Management System (SRMS)** using List of dictionaries and its methods. Below is figure to help you visualize the structure of records:

```
records = [
        {"Name": "ALi", "Roll no": "qw321", "Course": "AI and DS", "Marks": 44},
        {"Name": "Taha", "Roll no": "we321", "Course": "AI and DS", "Marks": 55},
        {"Name": "Faheem", "Roll no": "er321", "Course": "AI and DS", "Marks": 88}
    ]

for accessing student1 record

records[0]  -> student1 records (dictionary format)
records[0]["Name"]  -> student1 name
records[0]["Roll no"]  -> student1 roll_no
records[0]["Course"]  -> student1 course
records[0]["Marks"]  -> student1 marks
```

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f. **Sort Record** - Sorting students records by marks (descending order).

g. **Exit.**