Practical 3 :-

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Problem Statement :-

You are building an e-commerce website, and you need to keep track of items in a user's shopping cart. Implement the following:

- Create an empty list called shopping_cart.
- Allow the user to add items (product names) to the cart.
- Display the current items in the cart.
- Allow the user to remove items from the cart.
- Calculate the total number of items in the cart.

In [1]:
```
shopping_cart = [] # initializing an empty list
ch = 1 # intializing the choice variable.

while ch != 0:
    print("Enter 1 to add items to the cart.")
    print("Enter 2 to display the current items in the cart.")
    print("Enter 3 to remove items from the cart.")
    print("Enter 4 to calculate the total no. of items in the cart.")
    print("Enter 0 to exit.")
    ch = int(input("Enter your choice: "))

    if ch == 1:
        product_name = str(input("\nEnter product name: "))
        shopping_cart.append(product_name)
        print(f"Item \"{product_name}\" inserted into the cart successfully.\n\n")

    elif ch == 2:
        print("\nItems in the cart are as follows :-\n")
        for i in range(0, len(shopping_cart)):
            print(f"{i+1}. {shopping_cart[i]}")
        print("\n")

    elif ch == 3:
        if len(shopping_cart) > 0:
            pos = int(input("\nEnter the postion which you want to delete: "))
            print(f"Item \"{shopping_cart[pos-1]}\" removed successfully.\n\n")
            shopping_cart.pop(pos-1)
        else:
            print("Shopping cart is already empty.")

    elif ch == 4:
        print(f"\nThe total no. of items in the cart are {len(shopping_cart)}.\n\n")

    else:
        print("\nExited the program successfully!")
```

```
Enter 1 to add items to the cart.
Enter 2 to display the current items in the cart.
Enter 3 to remove items from the cart.
Enter 4 to calculate the total no. of items in the cart.
Enter 0 to exit.
Item "Mechanical Keyboard" inserted into the cart successfully.


Enter 1 to add items to the cart.
Enter 2 to display the current items in the cart.
Enter 3 to remove items from the cart.
Enter 4 to calculate the total no. of items in the cart.
Enter 0 to exit.
Item "Sony A7 Camera" inserted into the cart successfully.


Enter 1 to add items to the cart.
Enter 2 to display the current items in the cart.
Enter 3 to remove items from the cart.
Enter 4 to calculate the total no. of items in the cart.
Enter 0 to exit.
Item "Airpods" inserted into the cart successfully.


Enter 1 to add items to the cart.
Enter 2 to display the current items in the cart.
Enter 3 to remove items from the cart.
Enter 4 to calculate the total no. of items in the cart.
Enter 0 to exit.
```

```
Items in the cart are as follows :-

1. Mechanical Keyboard
2. Sony A7 Camera
3. Airpods


Enter 1 to add items to the cart.
Enter 2 to display the current items in the cart.
Enter 3 to remove items from the cart.
Enter 4 to calculate the total no. of items in the cart.
Enter 0 to exit.
Item "Airpods" removed successfully.


Enter 1 to add items to the cart.
Enter 2 to display the current items in the cart.
Enter 3 to remove items from the cart.
Enter 4 to calculate the total no. of items in the cart.
Enter 0 to exit.
Items in the cart are as follows :-

1. Mechanical Keyboard
2. Sony A7 Camera


Enter 1 to add items to the cart.
Enter 2 to display the current items in the cart.
Enter 3 to remove items from the cart.
Enter 4 to calculate the total no. of items in the cart.
Enter 0 to exit.
The total no. of items in the cart are 2.


Enter 1 to add items to the cart.
Enter 2 to display the current items in the cart.
Enter 3 to remove items from the cart.
Enter 4 to calculate the total no. of items in the cart.
Enter 0 to exit.
Exited the program successfully!
```

Problem Statement :-

You are building a student management system. Implement the following:

- Create a dictionary called student_records where each key is a student ID (e.g., roll number) and the student's name, age, and grade value.
- Allow the user to add new student records.
- Display the details of a specific student given their ID.

In [2]:
```python
print("STUDENT MANAGEMENT SYSTEM :-\n")

student_records = {} # declared empty dictionary
ch = 1 # initalized the inital choice

while ch != 0:
    print("\nEnter 1 to add a new student record.")
    print("Enter 2 to display a specific student's details.")
    print("Enter 0 to exit.")
    ch = int(input("Enter choice: "))

    if ch == 1:
        student_id = input("\nEnter the Student ID: ")
        if student_id in student_records:
            print(f"Student ID {student_id} already exists. Please use a unique ID.\n")
        else:
            student_name = str(input("Enter student's name: "))
            student_age = int(input("Enter student's age: "))
            student_grade = str(input("Enter student's grade: "))
            # storing the given details in a dictionary
            student_records[student_id] = {"name": student_name, "age": student_age, "grade": student_grade}
            print(f"Student with ID {student_id} has been added to the records successfully.\n")

    elif ch == 2:
        student_id = input("\nEnter student ID: ")
        if student_id in student_records:
            student = student_records[student_id]
            print(f"Details for Student ID {student_id}:-")
            print(f"Name:\t {student["name"]}")
            print(f"Age:\t {student["age"]}")
            print(f"Grade:\t {student["grade"]}\n")
        else:
            print(f"No student found with ID {student_id}.\n")

    elif ch == 0:
        print("\nExited the program successfully!")
```

```
    else:
        print("Enter correct choice.\n")
```

```
STUDENT MANAGEMENT SYSTEM :-


Enter 1 to add a new student record.
Enter 2 to display a specific student's details.
Enter 0 to exit.
Student with ID A007 has been added to the records successfully.


Enter 1 to add a new student record.
Enter 2 to display a specific student's details.
Enter 0 to exit.
Student with ID A009 has been added to the records successfully.


Enter 1 to add a new student record.
Enter 2 to display a specific student's details.
Enter 0 to exit.
Student with ID A022 has been added to the records successfully.


Enter 1 to add a new student record.
Enter 2 to display a specific student's details.
Enter 0 to exit.
Details for Student ID A009:-
Name:    Divyakirti Singh
Age:     19
Grade:   B+


Enter 1 to add a new student record.
Enter 2 to display a specific student's details.
Enter 0 to exit.
No student found with ID A010.


Enter 1 to add a new student record.
Enter 2 to display a specific student's details.
Enter 0 to exit.
Student ID A009 already exists. Please use a unique ID.


Enter 1 to add a new student record.
Enter 2 to display a specific student's details.
Enter 0 to exit.
Exited the program successfully!
```

Problem Statement :-

You are developing a weather monitoring system. Implement the following:

- Collect temperature data for different cities.
- Store each city's data as a tuple containing its name and average temperature.
- Display the temperature data for all cities.

In [13]:
```
n = int(input("Enter no. of cities: "))

data = () # inital empty tuple

for i in range(n):
    city_name = input("\nEnter city name: ")
    avg_temp = float(input(f"Enter average temperature for {city_name}: "))
    # concatenating tuple with itself, as it is immutable and append() like list does not work
    data += ((city_name, avg_temp),)

print("\n", type(data))

print("\nTemperature data for all cities are as follows:-")
for city, temp in data:
    print(f"City: {city}\t\t Temperature: {temp}")
```

```
 <class 'tuple'>

Temperature data for all cities are as follows:-
City: New Delhi          Temperature: 25.0
City: Nagpur             Temperature: 30.0
City: Patna              Temperature: 22.0
City: Jaipur             Temperature: 27.0
City: Shimla             Temperature: 11.0
```