Lab Task: Exploring Python Dictionaries

Task 1: Student Database

Create a student database using dictionaries. Each student should have a unique student ID as the key, and the value should be a dictionary containing the student's name, age, and course. Implement the following operations:

Add a new student.

Retrieve information about a student using their student ID.

Update the information (name, age, or course) of a student.

Remove a student from the database.

Task 2: Word Frequency Counter

Write a program that takes a LIST as input and counts the frequency of each word in the LIST. Store the word frequencies in a dictionary where the keys are unique words, and the values are the counts. You should also ensure that words are case-insensitive (i.e., "Apple" and "apple" should be counted as the same word).

Task 3: Phonebook Application

Create a simple phonebook application that allows users to store and retrieve phone numbers of their contacts. Use a dictionary to store contact information, where the keys are contact names, and the values are phone numbers. Implement the following operations:

Add a new contact.

Retrieve the phone number of a contact.

Update the phone number of a contact.

Delete a contact from the phonebook.

Task 4: Inventory Management

Create a program for managing inventory in a store. You'll use a dictionary to represent the store's inventory, where each item's name is the key, and the value is a tuple containing the item's price and quantity in stock. Implement the following operations:

Add a new item to the inventory.

Update the price or quantity of an existing item.

Remove an item from the inventory.

Display the current inventory with item names, prices, and quantities.

Calculate the total value of the inventory (price * quantity) and display it.