Documentation : Password Management

Introduction

This document describes how to create a basic password management system where users can create accounts and log in using hashed passwords. The system uses the `hashlib` library for hashing and the `getpass` library for secure password input.

Code Overview

Libraries Used:

- `hashlib`: Used for hashing passwords with the SHA-256 algorithm.
- `getpass`: Used for secure password input that is not displayed on the console.

Data Structure:

- `password_manager`: A dictionary that stores usernames as keys and their corresponding hashed passwords as values.

Functions

1. **create_account()**
   - Prompts the user to enter a username and password.
   - Hashes the password using SHA-256 and stores it in the `password_manager` dictionary.

   ```
   def create_account():
       username = input("Enter username: ")
       password = getpass.getpass("Enter password: ")
       hashed_password = hashlib.sha256(password.encode()).hexdigest()
       password_manager[username] = hashed_password
       print("Account created successfully")
   ```

2. **login()**
   - Prompts the user to enter a username and password.

- Hashes the entered password and compares it with the stored hashed password in the `password_manager` dictionary.

```
def login():
    username = input("Enter username: ")
    password = getpass.getpass("Enter password: ")
    hashed_password = hashlib.sha256(password.encode()).hexdigest()
    if username in password_manager.keys() and password_manager[username] ==
hashed_password:
        print("Login successful")
    else:
        print("Invalid username or password")
```

3. **main()**

   - Allows the user to choose between creating an account, logging in, or exiting.

```
def main():
    while True:
        choice = input("Enter 1 to create an account, 2 to log in, or 0 to exit: ")
        if choice == '1':
            create_account()
        elif choice == '2':
            login()
        elif choice == '0':
            break
        else:
            print("Invalid choice")
```

Execution

To run the script, use the following code:

```
if __name__ == "__main__":
    main()
```