DHARMSINH DESAI UNIVERSITY

Department :
Faculty of Management and Information Science

Subject : PYTHON

Topic : Login Authentication Using Python

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Title: -

Login Authentication Using Python

Introduction: -

The name of project is “Login Authentication Using Python”.

A User Authentication System is a fundamental component of modern software applications and websites that require user interaction and access control. implements a simple user authentication system that allows users to register, log in, and reset their passwords. User data is stored in a text file, and passwords are hashed using the SHA-256 algorithm for security.

load_user_data(): This function reads user data from a file named "user_data.txt" and returns it as a dictionary where the email is the key and the hashed password is the value.

save_user_data(user_data): This function takes the user data (a dictionary) and saves it to the "user_data.txt" file in the format "email:hashed_password".

register_user(user_data, email, password): This function allows a user to register by providing an email and password. It checks if the email is already in use and, if not, hashes the provided password and adds the email and hashed password to the user data dictionary. Then, it calls `save_user_data` to save the updated user data to the file.

login_user(user_data, email, password): This function allows a user to log in by providing an email and password. It checks if the email exists in the user data, hashes the provided password, and compares it with the stored hashed password. If they match, a successful login message is displayed; otherwise, an error message is shown.

reset_password(user_data, email, new_password): This function allows a user to reset their password by providing their email and a new password. It checks if the email exists in the user data, hashes the new password, and updates the user data with the new hashed password. It then calls `save_user_data` to save the updated user data to the file.

The main part of the code consists of an interactive loop where the user can choose one of four options: register, login, reset their password, or Exit the program.

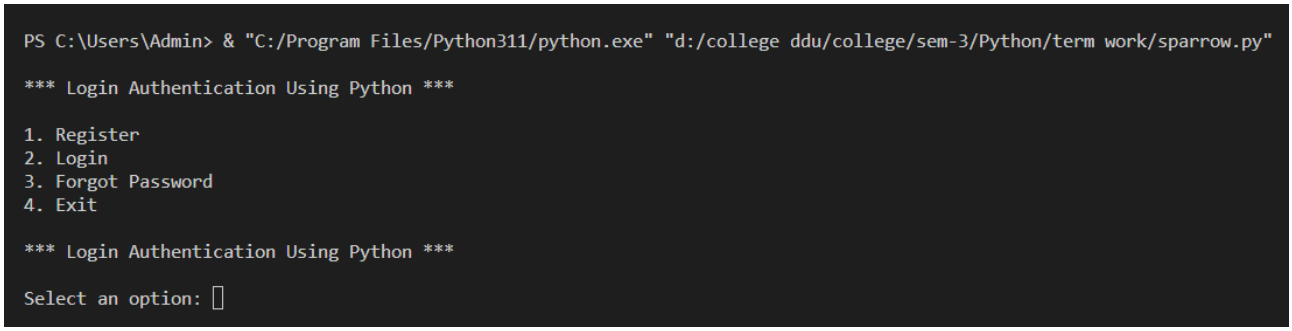
Source Code: -

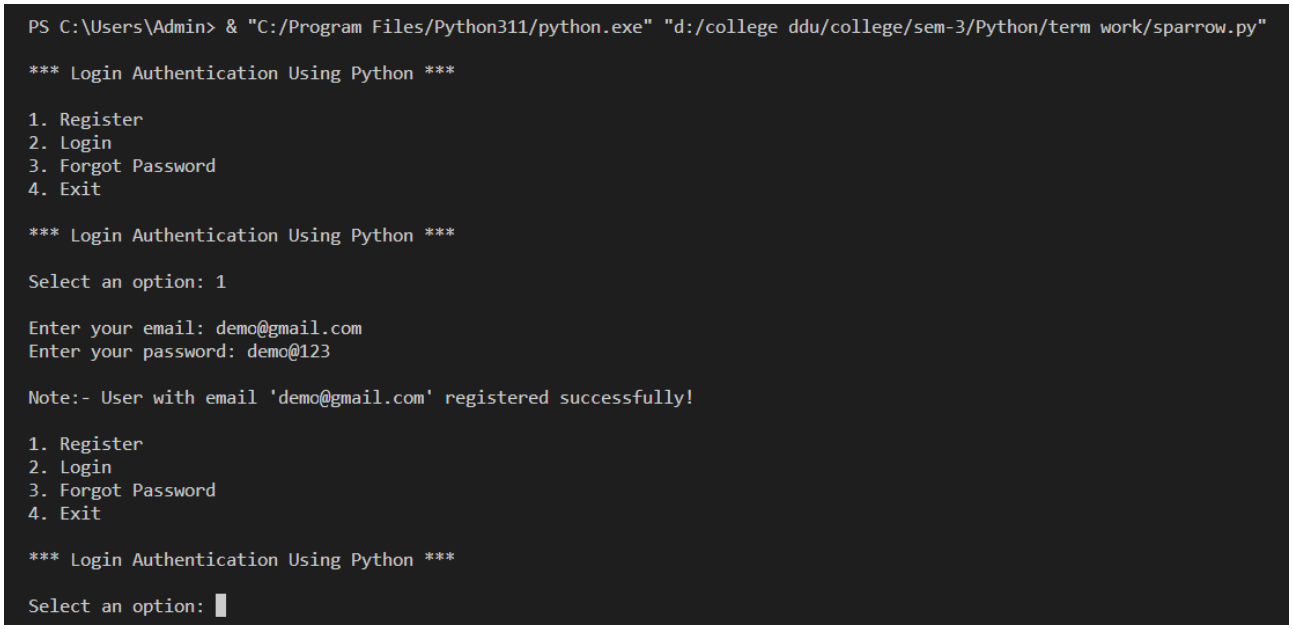
```
import hashlib

def load_user_data():
    user_data = {}
    try:
        with open("user_data.txt", "r") as file:
            for line in file:
                email, password = line.strip().split(":")
                #strip methos use to remove white space in to the line
                user_data[email] = password
    except FileNotFoundError:
        user_data = {}
    return user_data

def save_user_data(user_data):
    with open("user_data.txt", "w") as file:
        for email, password in user_data.items():
            file.write(f"{email}:{password}\n")

def register_user(user_data, email, password):
    if email in user_data:
        print("\nNote:- Email already in use. Please choose a different one.\n")
    else:
        hashed_password = hashlib.sha256(password.encode()).hexdigest()
        user_data[email] = hashed_password
        save_user_data(user_data)
        print(f"\nNote:- User with email '{email}' registered successfully!\n")

def login_user(user_data, email, password):
    if email in user_data:
```

```
            hashed_password = hashlib.sha256(password.encode()).hexdigest()
            if user_data[email] == hashed_password:
                print("\nNote:- Login successful!\n")
            else:
                print("\nNote:- Login failed. Invalid email or password.\n")
        else:
            print("\nNote:- User not found. Please register first.\n")

    def reset_password(user_data, email, new_password):
        if email in user_data:
            hashed_password = hashlib.sha256(new_password.encode()).hexdigest()
            user_data[email] = hashed_password
            save_user_data(user_data)
            print("\nNote:- Password reset successfully!\n")
        else:
            print("\nNote:- User not found. Please register first.\n")

    user_data = load_user_data()
    print("\n*** Login Authentication Using Python ***\n")
    while True:
        print("1. Register")
        print("2. Login")
        print("3. Forgot Password")
        print("4. Exit\n")

        print("*** Login Authentication Using Python ***\n")

        choice = input("Select an option: ")

        if choice == "1":
            email = input("\nEnter your email: ")
            password = input("Enter your password: ")
            register_user(user_data, email, password)

        elif choice == "2":
            email = input("\nEnter your email: ")
            password = input("Enter your password: ")
            login_user(user_data, email, password)

        elif choice == "3":
            email = input("\nEnter your email: ")
            new_password = input("Enter your new password: ")
            reset_password(user_data, email, new_password)

        elif choice == "4":
```

```
        print("\n*** Exit From Authentication System ***")
        print("\n*** THANK YOU SO MUCH ***\n")
        break
```

Screenshot: -





```
PS C:\Users\Admin> & "C:/Program Files/Python311/python.exe" "d:/college ddu/college/sem-3/Python/term work/sparrow.py"

*** Login Authentication Using Python ***

1. Register
2. Login
3. Forgot Password
4. Exit

*** Login Authentication Using Python ***

Select an option: 2

Enter your email: demo@gmail.com
Enter your password: demo@123

Note:- Login successful!

1. Register
2. Login
3. Forgot Password
4. Exit

*** Login Authentication Using Python ***

Select an option:
```

```
PS C:\Users\Admin> & "C:/Program Files/Python311/python.exe" "d:/college ddu/college/sem-3/Python/term work/sparrow.py"

*** Login Authentication Using Python ***

1. Register
2. Login
3. Forgot Password
4. Exit

*** Login Authentication Using Python ***

Select an option: 3

Enter your email: demo@gmail.com
Enter your new password: demo@321

Note:- Password reset successfully!

1. Register
2. Login
3. Forgot Password
4. Exit

*** Login Authentication Using Python ***

Select an option:
```

```
PS C:\Users\Admin> & "C:/Program Files/Python311/python.exe" "d:/college ddu/college/sem-3/Python/term work/sparrow.py"

*** Login Authentication Using Python ***

1. Register
2. Login
3. Forgot Password
4. Exit

*** Login Authentication Using Python ***

Select an option: 4

*** Exit From Authentication System ***

*** THANK YOU SO MUCH ***

PS C:\Users\Admin>
```

Thank you so much