

```
import json
import hashlib
import sys
```

```
users = {}
task_list = {}
```

```
def save_users():
    with open('users.json','w') as file:
        json.dump(users,file)
```

```
def hash(password):
    return hashlib.sha256(password.encode()).hexdigest()
```

```
def check_task_list():
    global task_list
    if len(task_list) > 0:
        return True
    else:
        print("No task present in the task list \n")
        return False
```

```
def load_users():
    global users
    try:
        with open('users.json','r') as file:
            users = json.load(file)
    except FileNotFoundError:
        print("No user present as this is the first run. Create a new user")
```

```
def register():
    global users
    print("Username not found. Create a new user 1. Yes, 2. No")
    choice = input("Press 1 for Yes. Press any other key to Exit : ")
    if choice != '1':
        sys.exit()
    while(True):
        username = input("\n Enter the username of your choice: ")
        if username in users:
            print("Username is already taken. Retry a different username or press 2 to exit \n")
        elif username == '2':
            sys.exit()
        else:
            break
    password = hash(input("Enter a strong password: "))
    users[username] = password
    save_users()
    print("\n Registration Successful !!! Re-login to create/view/modify/delete tasks \n")
    sys.exit()
```

```
def load_tasks(username):
    global task_list
    try:
        with open(f'{username}.json', 'r') as file:
            task_list = json.load(file)
```

```
except FileNotFoundError:
    task_list = {}
    print("No tasks are created. Use Add Task option to create a new task. \n \n")
```

```
def add_task():
    global task_list
    id = list(task_list.keys())[-1] if len(task_list) > 0 else 0
    id = str(int(id) + 1)
    description = input("Enter the description of the task -> ")
    status = input("Enter the status of the task -> ")
    task_list[id] = {"description": description, "status": status}
    print(f'{task_list}\n\n')
```

```
def save_tasks(username):
    with open(f'{username}.json', 'w') as file:
        json.dump(task_list, file)
    print("Tasks saved successfully")
```

```
def view_tasks():
    print("\n")
    if len(task_list) == 0:
        print("No tasks created \n")
        return
    for task in task_list:
        print(f"Task ID: {task}")
        print(f"Description: {task_list[task]['description']}")
        print(f"Status: {task_list[task]['status']}")
    print("\n")
```

```
def mark_as_complete():
    print("\n")
    view_tasks()
    task_id = input("Enter the task ID to mark as complete: ")
    if task_id in task_list:
        task_list[task_id]['status'] = 'Completed'
    else:
        print("Invalid task ID. Try Again!!! \n")
```

```
def delete_task():
    print("\n")
    view_tasks()
    task_id = input("Enter the task ID to delete: ")
    if task_id in task_list:
        del task_list[task_id]
    else:
        print("Invalid task ID. Try Again!!! \n")
```

```
def login():
    global users
    username = input("Enter username for login : ")
    if username not in users:
        register()
    password = input("Enter the password for login : ")
    if users[username] == hash(password):
        load_tasks(username)
```

```

print("Login Successful. Welcome to Task Manager")
while(True):
    print("=====")
    print("1. Add tasks")
    print("2. View tasks")
    print("3. Mark as Complete")
    print("4. Delete tasks")
    print("5. Logout")
    print("=====")
    choice = input("Enter your choice : ")
    if choice == '1':
        add_task()
    elif choice == '2':
        if check_task_list():
            view_tasks()
    elif choice == '3':
        if check_task_list():
            mark_as_complete()
    elif choice == '4':
        if check_task_list():
            delete_task()
    elif choice == '5':
        save_tasks(username)
        print("Logged out successfully")
        sys.exit()
    else:
        print("Invalid choice. Try Again!!!")
else:
    print("\n Username/Password is incorrect")

load_users()
if len(users) == 0:
    name = input("Enter the username: ")
    password = hash(input("Enter the password: "))
    users[name] = password
    save_users()
    print("Restart application to create tasks \n")
    sys.exit()
login()

```