**TASK MANAGER**

import os

import json

import hashlib

import csv

USERS\_FILE = "users.json"

TASKS\_DIR = "tasks"

EXPENSES\_FILE = "expenses.csv"

def hash\_password(password):

return hashlib.sha256(password.encode()).hexdigest()

def load\_users():

if not os.path.exists(USERS\_FILE):

return {}

with open(USERS\_FILE, "r") as file:

return json.load(file)

def save\_users(users):

with open(USERS\_FILE, "w") as file:

json.dump(users, file)

def register():

users = load\_users()

username = input("Enter a username: ")

if username in users:

print("Username already exists.")

return None

password = input("Enter a password: ")

users[username] = hash\_password(password)

save\_users(users)

os.makedirs(os.path.join(TASKS\_DIR, username), exist\_ok=True)

print("Registration successful.")

def login():

users = load\_users()

username = input("Enter username: ")

password = input("Enter password: ")

if username in users and users[username] == hash\_password(password):

print("Login successful.")

return username

print("Invalid credentials.")

return None

def get\_task\_file(username):

return os.path.join(TASKS\_DIR, username, "tasks.json")

def load\_tasks(username):

task\_file = get\_task\_file(username)

if not os.path.exists(task\_file):

return []

with open(task\_file, "r") as file:

return json.load(file)

def save\_tasks(username, tasks):

with open(get\_task\_file(username), "w") as file:

json.dump(tasks, file)

def add\_task(username):

tasks = load\_tasks(username)

task\_id = len(tasks) + 1

description = input("Enter task description: ")

tasks.append({"id": task\_id, "description": description, "status": "Pending"})

save\_tasks(username, tasks)

print("Task added.")

def view\_tasks(username):

tasks = load\_tasks(username)

if not tasks:

print("No tasks found.")

return

for task in tasks:

print(f"ID: {task['id']}, Description: {task['description']}, Status: {task['status']}")

def mark\_task\_completed(username):

tasks = load\_tasks(username)

task\_id = int(input("Enter task ID to mark as completed: "))

for task in tasks:

if task["id"] == task\_id:

task["status"] = "Completed"

save\_tasks(username, tasks)

print("Task marked as completed.")

return

print("Task not found.")

def delete\_task(username):

tasks = load\_tasks(username)

task\_id = int(input("Enter task ID to delete: "))

tasks = [task for task in tasks if task["id"] != task\_id]

save\_tasks(username, tasks)

print("Task deleted.")

def track\_budget():

budget = float(input("Enter your monthly budget: "))

total\_expenses = sum(float(row[2]) for row in load\_expenses())

balance = budget - total\_expenses

print(f"Total Expenses: ${total\_expenses:.2f}")

if balance < 0:

print("Warning! You have exceeded your budget.")

else:

print(f"Remaining Balance: ${balance:.2f}")

def add\_expense():

date = input("Enter date (YYYY-MM-DD): ")

category = input("Enter category: ")

amount = float(input("Enter amount: "))

description = input("Enter description: ")

with open(EXPENSES\_FILE, "a", newline="") as file:

writer = csv.writer(file)

writer.writerow([date, category, amount, description])

print("Expense added.")

def load\_expenses():

if not os.path.exists(EXPENSES\_FILE):

return []

with open(EXPENSES\_FILE, "r") as file:

return list(csv.reader(file))

def view\_expenses():

expenses = load\_expenses()

if not expenses:

print("No expenses recorded.")

return

for row in expenses:

print(f"Date: {row[0]}, Category: {row[1]}, Amount: ${row[2]}, Description: {row[3]}")

def save\_expenses():

print("Expenses saved.")

def task\_menu(username):

while True:

print("\nTask Manager")

print("1. Add Task")

print("2. View Tasks")

print("3. Mark Task as Completed")

print("4. Delete Task")

print("5. Logout")

choice = input("Choose an option: ")

if choice == "1":

add\_task(username)

elif choice == "2":

view\_tasks(username)

elif choice == "3":

mark\_task\_completed(username)

elif choice == "4":

delete\_task(username)

elif choice == "5":

break

else:

print("Invalid choice. Try again.")

def expense\_menu():

while True:

print("\nBudget Tracker")

print("1. Add Expense")

print("2. View Expenses")

print("3. Track Budget")

print("4. Save and Exit")

choice = input("Choose an option: ")

if choice == "1":

add\_expense()

elif choice == "2":

view\_expenses()

elif choice == "3":

track\_budget()

elif choice == "4":

save\_expenses()

break

else:

print("Invalid choice. Try again.")

def main():

while True:

print("\nMain Menu")

print("1. Register")

print("2. Login")

print("3. Budget Tracker")

print("4. Exit")

choice = input("Choose an option: ")

if choice == "1":

register()

elif choice == "2":

user = login()

if user:

task\_menu(user)

elif choice == "3":

expense\_menu()

elif choice == "4":

break

else:

print("Invalid choice. Try again.")

if \_name\_ == "\_main\_":

main()