



HABIT TRACKER APPLICATION

Build Consistency, Track Progress, Achieve Goals

Development Phase Presentation

January 21, 2026

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Course: Object-Oriented Programming with Python

Development Phase Roadmap

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2

Core Features

What can users do?

3

Technology Stack & Architecture

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Live Demo

See it in action!

The Challenge: Building Better Habits

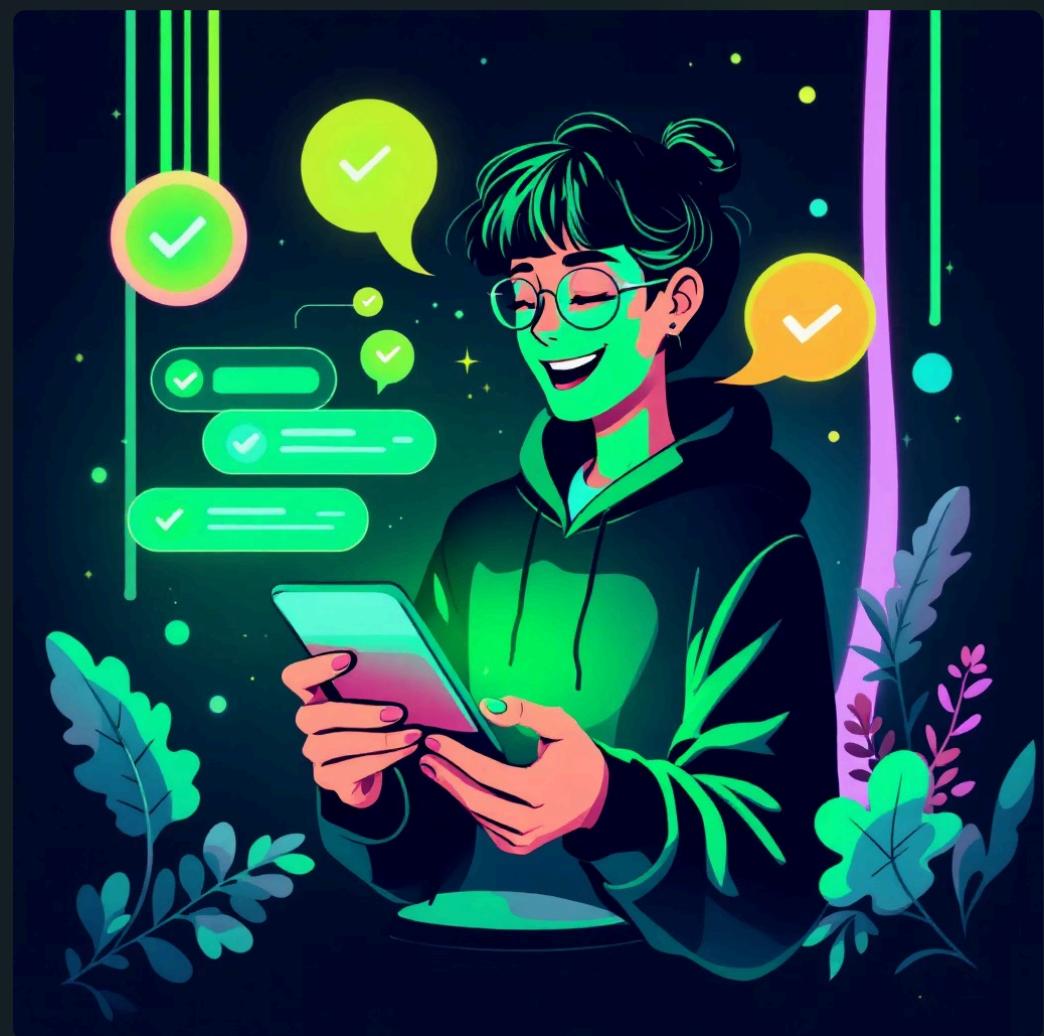
The Problem

- Users struggle to stay consistent with daily/weekly habits.
- Difficult to track progress over time effectively.
- Identifying which habits are being broken is often hard.
- Visualizing the improvement journey lacks clarity.



Our Solution

- Easy habit creation & management for all users.
- Automatic streak calculation for motivation.
- Real-time broken habit detection for intervention.
- Beautiful progress charts & analytics for insights.
- Persistent data storage ensures no loss of progress.



Core Features Overview



Create & Manage Habits

- Add new habits with custom names.
- Set duration, frequency (daily/weekly).
- Categorize and instantly save.



Track Habits

- Check off daily or weekly habits.
- Log completions anytime with timestamps.
- Automatic streak updates.

Analyze Data

- View current and longest streaks.
- See progress and completion rates.
- Export reports and view charts.



Visualizations

- Line charts for progress over time.
- Cumulative views for overall performance.
- Intuitive graphical representations.



Edit & Delete

- Rename habits and adjust frequency.
- Change duration and remove habits completely.



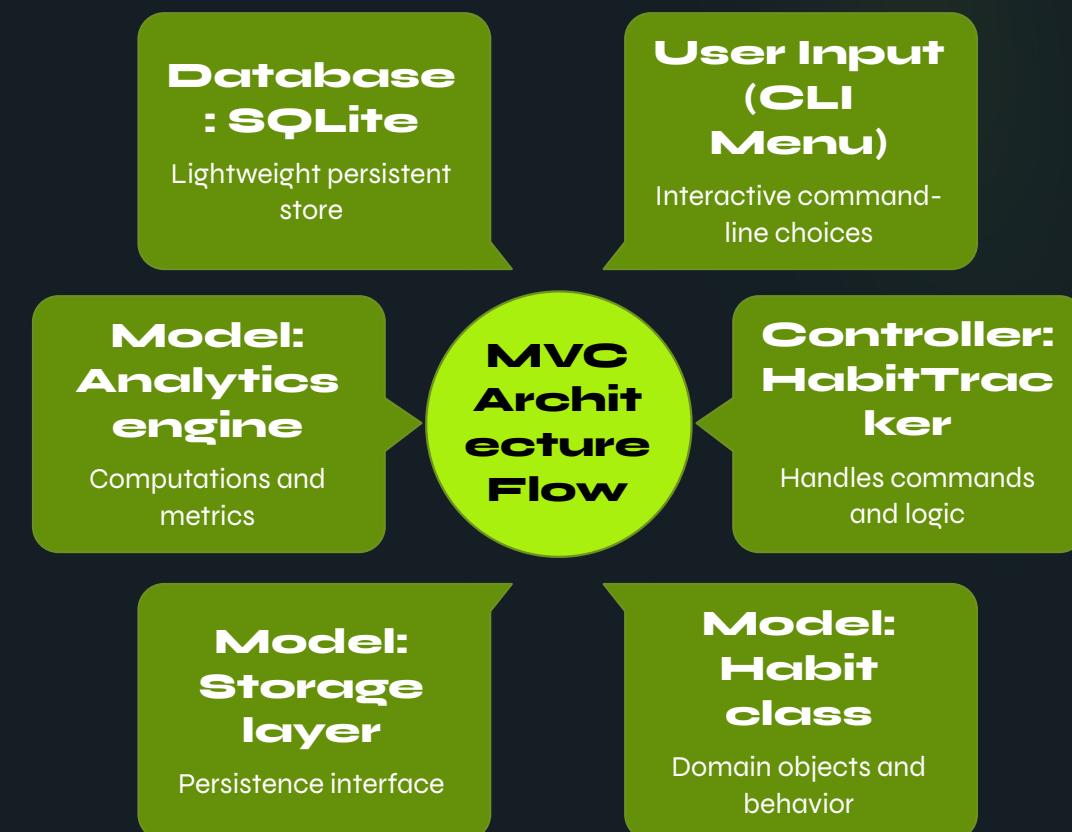
Statistics

- Current and longest streak metrics.
- Overall completion percentage.
- Total days active and habit count.



Technology Stack & Architecture

Our application leverages a robust MVC architecture for clear separation of concerns.



- **Python:** The core programming language for logic and framework.
- **SQLite:** Lightweight, serverless database for persistent data storage.
- **Matplotlib:** Powerful library for generating insightful data visualizations.

Core Classes & Implementation Architecture

Habit Class (Model)

Represents individual habits with attributes like name, frequency, and duration. Manages completion records and streak calculations.

- **Key Attributes:** id, name, category, frequency, duration, completions.
- **Key Methods:** add_completion(), is_broken(), get_current_streak(), get_longest_streak().

HabitTracker Class (Controller)

Orchestrates business logic, coordinates between Model and View, and validates user inputs.

- **Key Methods:** create_habit(), check_off(), get_broken_habits(), edit_habit().
- **Purpose:** Central hub for application flow and logic management.

Storage Class (Data Layer)

Handles all interactions with the SQLite database, ensuring data persistence and integrity.

- **Key Methods:** create_tables(), add_habit(), get_all_habits(), update_habit(), delete_habit().
- **Database Interaction:** Manages habits and completions tables with foreign key relationships.

Analytics Class (Pure Functions)

Provides insightful data analysis from stored habits, calculating various statistics without side effects.

- **Key Methods:** get_longest_streak_for_habit(), get_longest_streak_all(), get_broken_habits().
- **Purpose:** Extract meaningful insights and statistics for users.

STREAK LOGIC & BROKEN HABIT DETECTION

Daily Habits: Consistent Engagement

Requires completion at least once every 24 hours to maintain the streak.

- **Example (Drink Water):** Jan 1 (Streak: 1) → Jan 2 (Streak: 2) → Jan 3 (Streak: 3)
- **Broken:** Miss Jan 4 (Streak: 0). New streak starts Jan 5 (Streak: 1).

Weekly Habits: Flexible Tracking

Requires completion at least once within a 7-day period to keep the streak alive.

- **Example (Gym):** Week 1 (Streak: 1) → Week 2 (Streak: 2)
- **Broken:** Miss Week 3 (Streak: 0). New streak starts Week 4 (Streak: 1).

BROKEN HABIT DETECTION:

- | The app automatically identifies "BROKEN" habits:
 - | Daily habits: Broken if not completed for 1+ day
 - | Weekly habits: Broken if not completed for 7+ days
- | What You Get:
 - | → List of broken habits with names
 - | → Last completion date for each broken habit

HTML Export



Generate professional HTML reports for all habit data, streaks, and statistics.

- Shareable and archive-friendly.
- Color-coded for easy interpretation.

PROGRESS OVER TIME CHARTS:



Live Demo - Full Workflow

Watch the Habit Tracker in action as we walk through key functionalities.

APPLICATION STARTUP

```
python main.py
```

Loading habits from database...

- ✓ Database initialized with 5 predefined habits
- ✓ Ready to track!

Main Menu Interaction

```
===[habit] Daily Check-in Dashboard [habit]===  
+ 1. Create a new habit  
✓ 2. Check off a habit  
📊 3. Analytics  
📝 4. Edit habit  
🗑 5. Delete habit  
✖ 0. Exit  
Choose an option: |
```

when you choose 1, you should enter thabit details like here for (drawing)

```
Choose an option: 1  
Habit name: drawing  
Category: art  
Frequency (daily/weekly): weekly  
Duration (in days): 30
```

when you save, you see :

```
✓ Habit "drawing" created successfully!  
📅 Scheduled for: 30 days  
⌚ Frequency: Weekly
```



when u choose 2 :

Choose an option: 2
Habit name to check off: drawing

then you will see :

Check Off Habit

Habit name: drawing

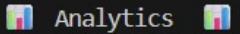
⌚ Timestamp: 2026-01-22 01:09:08

🎉 Habit "drawing" checked off!
Keep going 🤘

Current Streak: 1 day

when you choose 3 :

Choose an option: 3

 Analytics 
1. Show all habits (Compact view)
2. Export habits to HTML table
3. Habit Progress Over Time
4. Show broken habits
5. Show current streak for all habits
6. Show habits by frequency
7. Show longest streak (all)
8. Show longest streak (specific)
0. Back
👉 Choose: []

for choice 3 - 1:

Those are all habits :						
YOUR HABITS:						
#	Name	Category	Freq	Days	Current	Best
1	Drink Water	Health	D	30	0	28
2	Read Book	Mind	D	90	0	20
3	Morning Walk	Fitness	D	60	0	11
4	Gym	Fitness	W	60	4	2
5	Call Family	Social	W	90	2	1
6	dancing	sport	W	90	1	1
7	writing	litterature	D	30	0	0
8	drawing	art	W	30	1	1

Press Enter to continue... []

for 3-2 : you will have report for all habit in details

Habit Tracker Report								
Generated on: January 21, 2026 at 21:04								
Name	Category	Frequency	Duration	Start Date	Marked off	Last Completed	Current Streak	Longest Streak
Drink Water	Health	Daily	30	2026/01/21	79	2026/01/21	28	28
Read Book	Mind	Daily	90	2026/01/21	89	2026/01/21	20	20
Morning Walk	Fitness	Daily	60	2026/01/21	24	2026/01/21	11	11
Gym	Fitness	Weekly	60	2026/01/21	14	2026/01/21	4	2
Call Family	Social	Weekly	90	2026/01/21	13	2026/01/21	2	1
dancing	sport	Weekly	90	2026/01/21	1	2026/01/21	1	1

for 3-3: you should select which habit you want to see its progress over time :

👉 Choose: 3

Available habits:
1. Drink Water
2. Read Book
3. Morning Walk
4. Gym
5. Call Family
6. dancing
7. writing
8. drawing

Enter habit number or name: Drink Water []

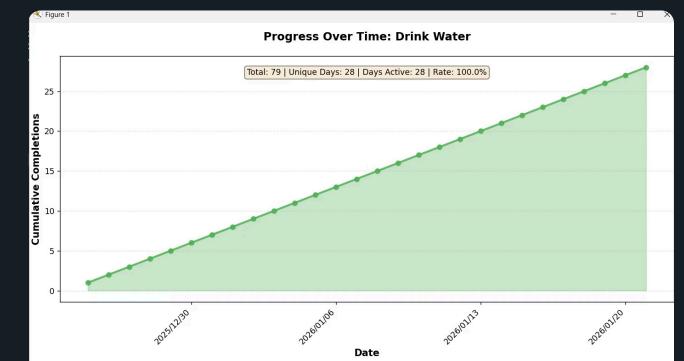
when you choose the name, the app generates for you a chart and saved it as png image .

Enter habit number or name: Drink Water

Generating progress chart for 'Drink Water'...

✓ Progress chart saved as 'Drink_Water_progress.png'

it gonna be like this (Drink Water case):



for 3-4: the broken habits will be displayed

```
👉 Choose: 4
❤️ Broken Habits Analysis:
Found 4 broken habit(s):
✗ Drink Water (daily)
  Last completed: 2026/01/21
✗ Read Book (daily)
  Last completed: 2026/01/21
✗ Morning Walk (daily)
  Last completed: 2026/01/21
✗ writing (daily)
  Last completed: Never
Press Enter to continue...▶
```

for 3-5 to 3-8: this analysis part is about streaks , like here when u choose 5 , the current streaks will be shown :

```
👉 Choose: 5
Drink Water: 0
Read Book: 0
Morning Walk: 0
Gym: 4
Call Family: 2
dancing: 1
writing: 0
drawing: 1
Press Enter to continue...▶
```

Habit Editing Process

step 1 : you choose 4 ,

step2 : you select the name ,

step 3 : you select what you wanna edit

step 4 : you give a new value

```
Choose an option: 4
Habit name:drawing
Edit(name/category/frequency):name
new value:programming
📝 Habit updated.
```

Press Enter to return to dashboard...▶

Habit deleting Process

step 1 : you choose 5

step2 : you select the name of the habit ,

```
Choose an option: 5
Habit name:programming
🗑 Habit deleted.
```

Press Enter to go back...▶

Start tracking today and achieve your personal growth goals.

Get the Habit Tracker

Clone our repository to your local machine.



Run the Application

Execute `python main.py` to launch the CLI.

Start Creating Habits

Define your daily and weekly routines.



Watch Yourself Improve!

Track progress and celebrate consistency.

[View Project on GitHub](#)