



# Project Report

## Student Academic Goal & Progress Tracker

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### *Introduction*

Every student dream of improving their academic performance, yet most struggle to stay consistent, maintain goals, and keep track of their progress. We often rely on scattered notes, reminders, or last-minute planning, which eventually leads to stress and inefficiency.

This project was created as a practical attempt to solve that everyday problem.

The *Student Academic Goal & Progress Tracker* is a simple, functional, and thoughtfully designed web application that helps students manage their goals, record marks, follow their study habits, and visually understand how well they are progressing.

Built using **Python (Flask)**, **MySQL**, and **HTML/CSS**, the project demonstrates how basic tools taught in class can be combined to build a complete real-world solution.

### *Problem Statement*

Students rarely get a structured way to track academic growth.

Common difficulties include:

- No clear system to set and monitor goals
- Inconsistent study routines
- No centralized place to store subject performance
- Lack of visual insights (charts, trends, patterns)
- No motivation or gamification to maintain consistency

The absence of such a system directly affects consistency, planning, and performance.

Hence, there is a strong need for a **simple, reliable, and student-friendly platform** to help learners organize their academic journey.



# *Functional Requirements*

## Major Modules:

### 1. Goal Management

- Students can create short-term and long-term academic goals.
- They can update progress, mark goals as completed, and view ongoing tasks.
- Deadlines help maintain discipline.

### 2. Subject & Performance Tracking

- Subjects can be added for a semester or exam.
- Marks from tests or assignments can be entered.
- Performance is converted into charts to make the progress crystal clear.
- Helps students identify strong and weak areas.

### 3. Study Streak & Gamification

- Tracks how regularly the student logs in.
- Displays daily streaks in a calendar view.
- Awards badges like *Consistency King* or *Goal Master* for motivation.

## Additional Features

- Secure login system
- Dashboard showing goals + recent marks + streak status
- Task reminders
- Clean user interface

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Hence, there is a strong need for a **simple, reliable, and student-friendly platform** to help learners organize their academic journey.



## ***Non-Functional Requirements***

### **1. Usability:**

The interface is intentionally kept minimal so that students can use it without confusion.

### **2. Performance:**

Queries and routes are optimized to load quickly, even with larger data.

### **3. Security:**

Passwords are hashed, and input data is validated before storing.

### **4. Maintainability:**

The application is built in small modules so future upgrades are easy.

### **5. Reliability:**

Session management ensures stable performance across sessions.

### **6. Scalability:**

With slight modifications, it can be extended for multiple users or even institutions.

### **7. Error Handling:**

User-friendly messages guide students if they enter wrong or incomplete data.

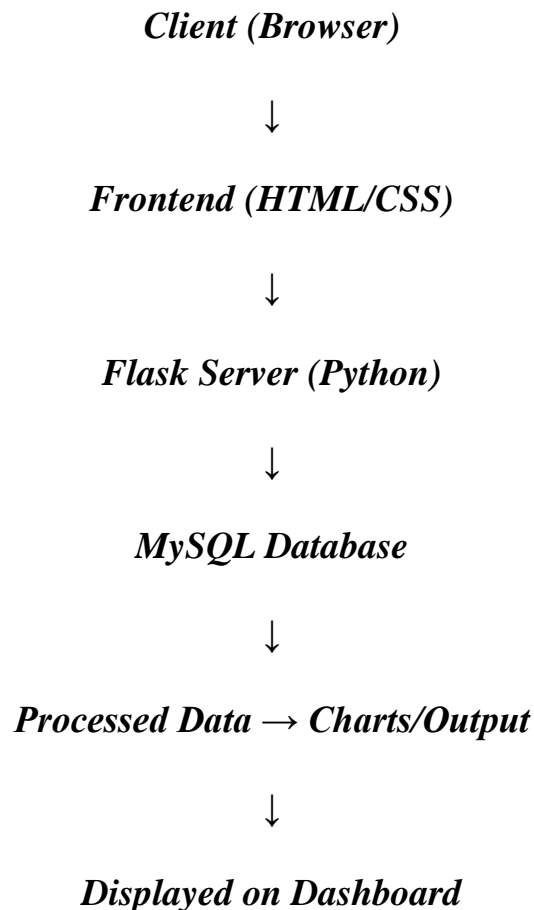
### **8. Resource Efficiency:**

Uses lightweight frameworks ensuring smooth functioning on simple systems.



# *System Architecture*

The system follows a straightforward flow:



This architecture keeps the system simple yet robust.

## Process / Workflow:

1. Student logs in
2. Dashboard loads with summary
3. User selects a module
4. System processes the request
5. Output (goal list, marks graph, streak count, etc.) is shown

## Sequence Overview (Example: Adding Marks):

*User → Performance Page → Flask route → Database Insert → Graph Updated → Redirect to Dashboard*



## Database Design:

The database includes these main tables:

- **users**
- **lookup**
- **goals**
- **progress\_logs**
- **study\_sessions**
- **badges**
- **todo\_tasks**
- **motivation\_messages**

Each table is connected using foreign keys for structured storage.

## *Design Decisions & Rationale*

- **Flask** was chosen as it is easy to work with, especially for beginners.
- **MySQL** is suitable for structured, relational academic data.
- **Matplotlib** is used to generate clean and simple graphs without advanced tools.
- The UI is deliberately basic because the objective is clarity and practicality, not heavy design.
- The project architecture uses separate modules to keep the system organized.

The goal was to build a *solid, functional* system rather than an overly complicated one.

## *Implementation Details*

The application is divided into small modules:

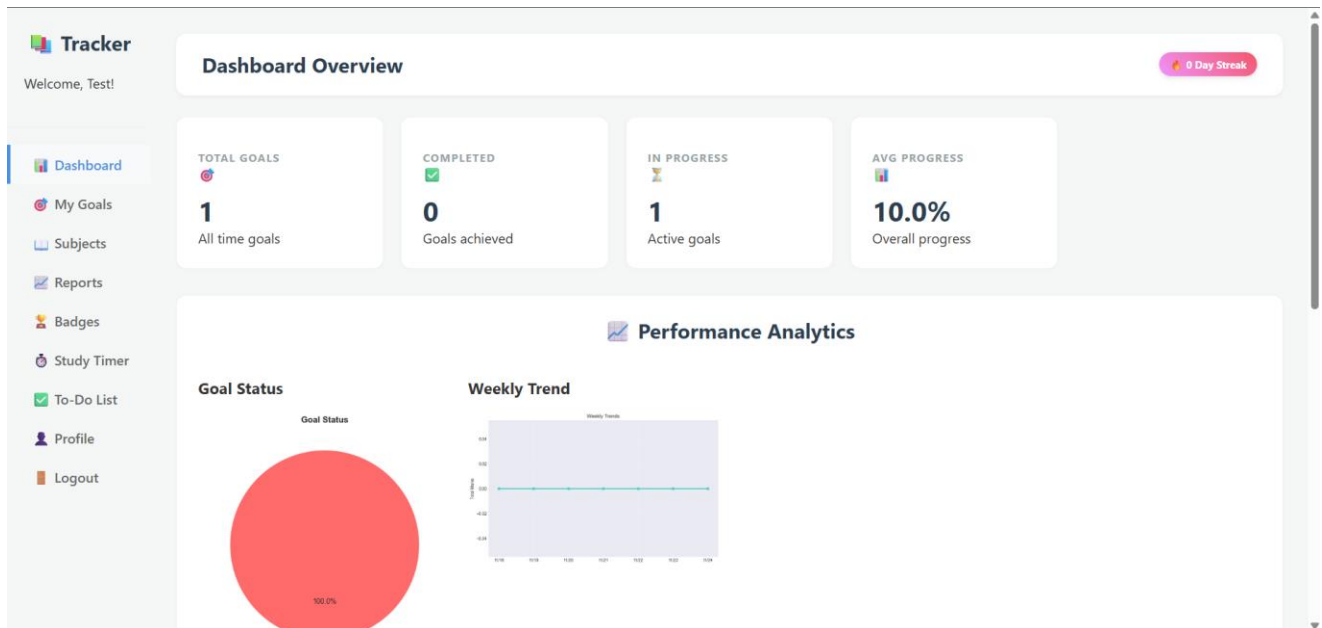
- `auth.py` – Login, registration, session handling
- `goals.py` – Adding and managing goals
- `subjects.py` – Subject CRUD operations
- `reports.py` – Performance analytics
- `charts.py` – Graph generation
- `exports.py` – Exporting data
- `db.py` – Database connection
- `templates/` – HTML pages
- `static/css/` – Stylesheets

The modular layout makes the code easier to understand and improve.



## Screenshots / Results

*The main dashboard showing progress:*



*The registration interface:*

The screenshot shows the 'Create Account' registration form. The form is titled 'Create Account' with the subtitle 'Join Student Tracker'. It contains four input fields: 'Username', 'Email Address', 'Password', and 'Confirm Password'. A green 'Register' button is located below the input fields. At the bottom, there is a link: 'Already have an account? [Login](#)'.



### *The login interface:*

A screenshot of a login interface. It features a white card on a light gray background. The card has the title "Login" at the top. Below it are two input fields: "Email:" with the value "test@user.com" and "Password:" with masked characters "\*\*\*\*\*". A blue "Sign In" button is positioned below the password field. At the bottom of the card, there is a link "Create an account".

**Login**

Email:  
test@user.com

Password:  
\*\*\*\*\*

[Sign In](#)

[Create an account](#)

### *The goal management interface:*

A screenshot of a goal management interface. On the left is a sidebar with a "Tracker" header and a list of navigation items: Dashboard, My Goals (active), Subjects, Reports, Badges, Timer, To-Do, Profile, and Logout. The main content area has a "My Goals" header. Below it is a "Create New Goal" section with three input fields: "Subject" (Python), "Target Score" (99), and "Deadline" (11/30/2025). There is also a "Description (Optional)" field with the text "Term End Examination". A blue "Create Goal" button is at the bottom of this section. Below the button is a "Your Goals" section which currently displays the message "No goals yet. Create your first goal above!".

**Tracker**

Hi, Test!

- Dashboard
- My Goals**
- Subjects
- Reports
- Badges
- Timer
- To-Do
- Profile
- Logout

**My Goals**

**+ Create New Goal**

Subject: Python Target Score: 99 Deadline: 11/30/2025

Description (Optional): Term End Examination

[Create Goal](#)

**Your Goals**

No goals yet. Create your first goal above!



Tracker

Hi, Test!

Dashboard

My Goals

Subjects

Reports

Badges

Timer

To-Do

Profile

Logout

My Goals

+ Create New Goal

Subject

e.g., Mathematics

Target Score

95

Deadline

mm/dd/yyyy

Description (Optional)

Notes...

Create Goal

📄 Your Goals

SUBJECT	TARGET	PROGRESS	STATUS	DEADLINE	ACTIONS
Python	99.00	10%	In Progress	2025-11-30	<div>10</div> <div>Update</div> <div>Delete</div>

*The subject management interface:*

Tracker

Hi, Test!

Dashboard

Goals

Subjects

Reports

Badges

Timer

To-Do

Profile

Logout

My Subjects

+ Add Subject

Subject Name

Python

Add

No subjects yet. Add one above!





*The report management interface:*

Tracker

User: Test

Dashboard

My Goals

Subjects

Reports

Badges

Timer

To-Do

Profile

Logout

Progress Reports

Download CSV

Last 7 Days

UPDATES  
1

SESSIONS  
0

HOURS  
0.0

LOGS  
0

Monthly Overview

Goals Completed: 0

Total Study Hours: 0.0

Average Marks: 0

New Badges: 0

By Subject

No data found.

*The badges management interface:*

Tracker

User: Test

Dashboard

My Goals

Subjects

Reports

Badges

Timer

To-Do

Profile

Logout

Achievements

Unlocked

No badges yet. Keep going!

All Badges

3-Day Streak

Week Warrior

Consistency King

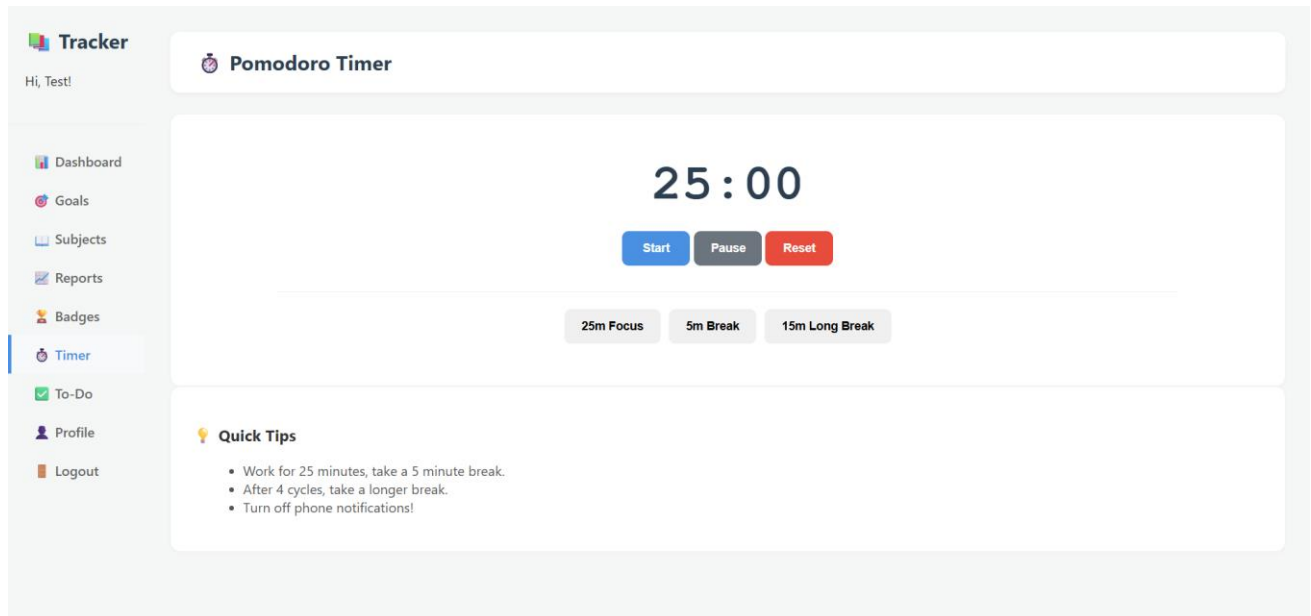
Goal Master

Deadline Champion

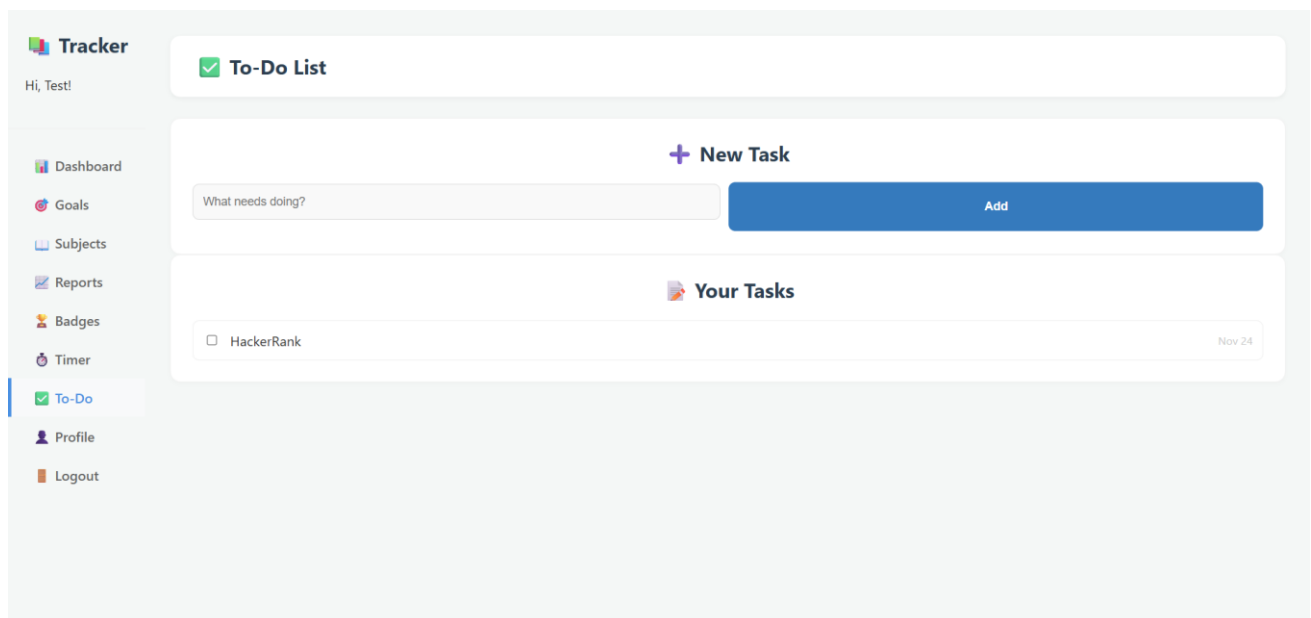
Study Pro



### *The timer interface:*



### *The To-Do list management interface:*





## The profile management interface:

Tracker

Hi, Test!

Dashboard

Goals

Subjects

Reports

Badges

Timer

To-Do

Profile

Logout

My Profile

User Info

User: Test  
Email: test@user.com  
Joined: 2025-11-24  
Streak: 0 days 🔥

Stats Overview  
Total Goals: 1  
Done: 0  
Active: 1  
Avg Progress: 10.0%

Export Data

Download your data in CSV format.

Goals CSV

Progress CSV

Reports CSV

Export Data

Download your data in CSV format.

Goals CSV

Progress CSV

Reports CSV

Download All (Zip)

Tracker

Welcome, Test!

Dashboard

My Goals

Subjects

Reports

Badges

Study Timer

To-Do List

Profile

Logout

Subject Performance

Upcoming Deadlines

SUBJECT	TARGET	PROGRESS	DATE	STATUS
Python	99.00	10%	2025-11-30	In Progress

Recent Activity

Subject Added

Subject: Python  
Nov 24, 16:52

Goal Updated

Progress: 10%  
Nov 24, 16:52

Goal Created

Goal: Python  
Nov 24, 16:52



## *Testing Approach*

### 1. Functional Testing:

Each feature was tested individually:

- Login
- Goal creation
- Marks entry
- Charts

### 2. Validation Testing:

- Blank fields
- Invalid marks
- Incorrect passwords

### 3. UI Testing:

Ensured that pages load properly and buttons respond correctly.

### 4. Basic Unit Tests:

Checked database insertions and streak calculations.

## *Challenges Faced*

- Setting up a clean and scalable database structure
- Linking matplotlib charts to Flask routes
- Ensuring streak logic resets correctly after inactivity
- Designing a simple UI that still looks clean
- Managing data flow between modules

These challenges helped deepen understanding of real-world development.



## ***Learnings & Key Takeaways***

- How to build a complete end-to-end web application
- Database structuring and CRUD operations
- Role of modular coding in Python
- Handling user sessions
- Generating charts dynamically
- Planning documentation and diagrams
- Importance of error handling and usability

This project strengthened both conceptual and practical skills.

## ***Future Enhancements***

In future versions, the system can include:

- A study timetable generator
- Daily motivational reminders
- Weekly performance reports
- Mobile app interface
- Cloud backup
- AI-based performance predictions
- Pomodoro study timer

These additions would make the system more smart, modern, and helpful.

## ***References***

- VITyarthi Lectures
- Official Flask documentation
- MySQL Reference Manual
- W3Schools (HTML/CSS basics)
- Python Matplotlib Guide
- Classroom lecture notes
- Online articles for best development practices