

HEATMAP CONSISTENCY PLANNER

1. Title

Project Title:

Daily Consistency Planner Using GitHub-Style Heatmap

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2. Abstract

The Daily Consistency Planner is a web-based productivity application designed to help users track daily activities and maintain consistency through visual feedback. Inspired by GitHub's contribution heatmap, the system represents each day of the year as a color-coded block whose intensity reflects task completion progress. Users can plan tasks for individual days, manually record progress, and visually analyze productivity trends over the year. The application is lightweight, requires no backend or authentication, and stores data locally within the user's browser. This project demonstrates the effective use of frontend technologies to create an intuitive and visually engaging productivity tool.

3. Problem Statement

Maintaining consistency in daily tasks and habits is a common challenge for students and professionals. Traditional planners often lack visual feedback, making it difficult to assess long-term productivity and discipline. Existing digital tools can be overly complex, requiring user accounts, subscriptions, or internet connectivity. There is a need for a simple, offline-capable, visually driven system that enables users to plan daily tasks and monitor consistency over time.

4. Objectives

The primary objectives of the project are:

- To design a GitHub-style heatmap for visual representation of daily consistency
 - To provide a day-wise task planning interface
 - To allow users to manually track task completion progress
 - To compute and display daily progress using color intensity
 - To develop a lightweight, browser-based solution without backend dependency
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5. Scope of the Project

The scope of the project includes:

- Visualization of daily activity for the year 2026
- Task management on a per-day basis
- Manual progress tracking using predefined progress levels
- Local storage of user data in the browser

Out of Scope:

- User authentication and login system
- Cloud-based storage or synchronization
- Multi-user collaboration

6. Technology Stack

Component	Technology Used
Frontend	HTML, CSS
Client-side Logic	JavaScript
Data Storage	Browser LocalStorage
Deployment	GitHub Pages

7. System Architecture

The system follows a client-side architecture consisting of the following layers:

- **Presentation Layer:**
User interface elements including the heatmap calendar and daily planner panel.
- **Application Logic Layer:**
JavaScript functions responsible for date handling, progress calculation, heatmap rendering, and event handling.
- **Data Storage Layer:**
Browser LocalStorage used to persist daily tasks and progress information.

8. Features

- GitHub-style yearly heatmap visualization
 - Day-wise task planner positioned below the calendar
 - Progress selection in percentage values
 - Dynamic color intensity based on average task completion
 - Hover tooltips displaying daily task summaries
 - Offline functionality using local storage
 - Clean, minimal, and visually appealing user interface
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9. Working Methodology

1. The application initializes a calendar for the year 2026.
 2. Each day is represented as a clickable block in the heatmap.
 3. Users select a day to view or edit tasks in the planner section.
 4. Tasks are added with manually selected progress values.
 5. The system calculates the average progress for the selected day.
 6. Heatmap color intensity updates dynamically based on progress.
 7. All data is automatically saved in the browser's local storage.
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10. Advantages

- Simple and intuitive user interface
 - Visual feedback enhances motivation and habit formation
 - No dependency on internet or backend services
 - Lightweight and fast execution
 - Suitable for students and professionals
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11. Limitations

- Data is limited to the browser where it is stored
- No cloud backup or synchronization
- Progress tracking is manual
- Not suitable for multi-device usage

12. Future Enhancements

- Weekly and monthly productivity analytics
 - Export functionality for reports (CSV or PDF)
 - Cloud synchronization for multi-device access
 - User authentication and profiles
 - Mobile application version
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13. Conclusion

The Daily Consistency Planner successfully integrates task planning and visual progress tracking using a GitHub-style heatmap. By providing a clean and distraction-free interface, the system encourages users to maintain consistency and self-discipline. The project demonstrates the effective use of frontend web technologies to create a functional and user-friendly productivity tool. With additional enhancements, the application can be further extended to support advanced analytics and cross-device accessibility.
