

Assignment 1: Innovation & Project Management.

Changemakers: Creativity and Value Creation

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Task 1

04 February 2026

10:35

Q.1: Innovation:

09 March 2026 21:10

Innovation is a driving force behind societal development and personal growth. At its core, innovation can be defined as the introduction of new ideas, methods, or products that improve existing processes, services, or experiences [1]. From the earliest human inventions, such as fire and language, to modern technologies like smartphones and renewable energy solutions, innovation has consistently transformed the way people live, work, and interact with the world around them. The pervasive nature of innovation is evident in our daily lives, where activities and tools that were unimaginable a decade ago have now become indispensable. Examples include streaming platforms, online learning tools, food delivery applications, and AI-powered personal assistants. These innovations not only enhance convenience but also redefine the expectations and possibilities of human life.

Historically, innovation has been crucial in shaping society. The agricultural revolution allowed humans to produce surplus food, which in turn supported population growth and the establishment of complex social structures. Later, industrialization and technological advances enabled mass production, global trade, and modern infrastructure. These innovations were not isolated achievements but cumulative processes that transformed societies culturally, economically, and politically [2]. In contemporary times, the scope of innovation has expanded even further. Daniel Pink, in *A Whole New Mind*, argues that while analytical and technical skills once dominated societal rewards, modern success increasingly depends on creative, empathetic, and holistic thinking [3]. This democratization of innovation means that everyone, regardless of professional background, has the potential to contribute creatively and meaningfully to societal advancement.

The ability to innovate often stems from recognizing patterns in seemingly unrelated events and applying them to novel solutions. A classic example is Percy Spencer's invention of the microwave oven, which emerged from noticing how radar waves melted a chocolate bar [4]. Such insights illustrate that innovation is not solely the product of formal education or structured research but also of curiosity, observation, and experimentation. Moreover, the societal impact of innovation can be profound. Through augmented reality and data visualization, for instance, Hans Rosling demonstrated dramatic improvements in life expectancy, income, and quality of life across 200 countries over 200 years, showing how applied innovation enables a better understanding of complex global challenges [5]. Similarly, psychologist Steven Pinker emphasizes that progress in human welfare, including reductions in violence, poverty, and disease, is closely linked to innovations guided by reason, science, and a collective commitment to wellbeing [6].

Reflecting on daily routines further illustrates the omnipresence and necessity of innovation. It is reasonable to conclude that innovation is indeed everywhere, transformative, and largely a force for good. While challenges such as ethical concerns, technological inequities, and unintended consequences persist, the overarching trend demonstrates that creativity and innovation remain central to societal advancement and personal growth.

In summary, innovation is not merely the creation of new technologies but a broader process of improving human experiences and solving complex problems. Its influence is visible in nearly every aspect of contemporary life and continues to expand opportunities for individuals and communities. By fostering creativity, critical

thinking, and empathy, society can harness innovation not only for economic or technological progress but also for enhancing collective wellbeing. The ongoing democratization of innovation ensures that the next generation of problem-solvers, creators, and thinkers will continue to shape a world that is increasingly interconnected, sustainable, and enriched by human ingenuity.

Q.2: Ideation

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Several Project Ideas

1. Budget / Expense Tracker for Students

- Brief Idea: A web application that allows students to track income, expenses, and budgets. Users can view monthly spending summaries and charts.

2. Calorie / Diet Tracking App

- Brief Idea: An application that helps users log meals, track calories and nutrition, and monitor daily/weekly progress toward dietary goals.

3. Job Application Tracker

- Brief Idea: A system that helps graduates and students track job applications, interviews, and follow-ups, with reminders and status tracking.

4. Language Learning Flashcard App

- Brief Idea: An interactive app that allows users to learn vocabulary using flashcards, quizzes, and progress tracking.

Selected Project Idea

Project Title: Smart Study Planner for University Students

Aim: To develop a web-based application that helps students organise assignments, plan study schedules, and track academic progress effectively.

Objectives:

1. Allow users to create, view, and manage assignments and deadlines.
2. Generate a personalised study schedule based on user input.
3. Provide visual dashboards to track study progress and completed tasks.
4. Include reminders for upcoming deadlines and study sessions.
5. Enable categorisation of tasks by module, priority, or deadline.

Project Description: The Smart Study Planner is a web application designed to assist university students in managing their academic workload. The system allows users to input assignments, set deadlines, and generate a personalised study schedule. A visual dashboard provides an overview of pending tasks, completed assignments, and progress trends. The application also supports notifications and reminders for upcoming deadlines, helping students stay organised and reduce stress. By categorising tasks by modules or priorities, the system ensures effective time management and enables students to focus on academic performance. The project will include database design for storing user and assignment information, wireframes for the interface, and flowcharts for system processes.

Q.3: Research

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Key Sources

1. Welling, L. & Thomson, L. (2017) *PHP and MySQL Web Development*, 5th Edition, Addison-Wesley.
Explanation: This book provides detailed guidance on building web applications with database integration. It will help in implementing user registration, assignment storage, and dashboard functionality for the Smart Study Planner.
2. Duckett, J. (2014) *HTML & CSS: Design and Build Websites*, Wiley.
Explanation: Covers the fundamentals of HTML and CSS for creating responsive and user-friendly interfaces, supporting the design of the dashboard, calendar, and task management pages.
3. Flanagan, D. (2020) *JavaScript: The Definitive Guide*, 7th Edition, O'Reilly Media.
Explanation: Provides guidance on adding interactive functionality like dynamic calendars, task progress tracking, and notifications, which are core features of the Smart Study Planner.
4. Coronel, C. & Morris, S. (2019) *Database Systems: Design, Implementation, & Management*, 13th Edition, Cengage Learning.
Explanation: Essential for designing the database structure (ERD) and managing data efficiently, including users, tasks, deadlines, and priorities.
5. Macan, T. H. (1994) *Time Management: Test of a Process Model*, Journal of Applied Psychology, 79(3), pp. 381–391.
Explanation: Provides insights into effective time management strategies, which will guide the scheduling logic and task prioritisation features of the application.

How These Sources Support the Project

- Provide the technical knowledge to implement frontend and backend components of the Smart Study Planner.
- Ensures proper storage, retrieval, and management of assignments, deadlines, and user data.
- Guides the design of features that improve study scheduling and productivity, aligning with the project's aim.

Task 2: Project Management

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Q.1 Project Scope

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Project Aim

The aim of this project is to develop a web-based Smart Study Planner to assist university students in organising assignments, creating personalised study schedules, and tracking academic progress. The system will provide an intuitive interface that allows users to manage tasks efficiently, receive reminders, and monitor their study performance over time.

Proposed Solution

The proposed solution is a full-stack web application where users can:

- Register and log in securely
- Create, edit, and delete assignments with associated deadlines
- Categorise tasks by module, priority, or type
- Generate a personalised study schedule
- Track task completion through a visual dashboard
- Receive notifications for upcoming deadlines

The application will support interactive and dynamic features, such as a calendar view and progress charts, to improve user engagement. The system will store all data securely in a relational database and will be accessible via modern web browsers.

Required Technologies / Resources

Component	Technology / Tool	Purpose
Frontend	HTML, CSS, JavaScript	Interface design, dynamic elements, responsive layout
Backend	Python (Flask) or Node.js	Handle server-side logic and routing
Database	MySQL or SQLite	Store user accounts, tasks, deadlines, and progress
Libraries	Chart.js	Visualise task progress and deadlines
Development Tools	VS Code, GitHub	Coding, version control, collaboration
Design Tools	Figma, Draw.io	Wireframes, ERD diagrams, flowcharts

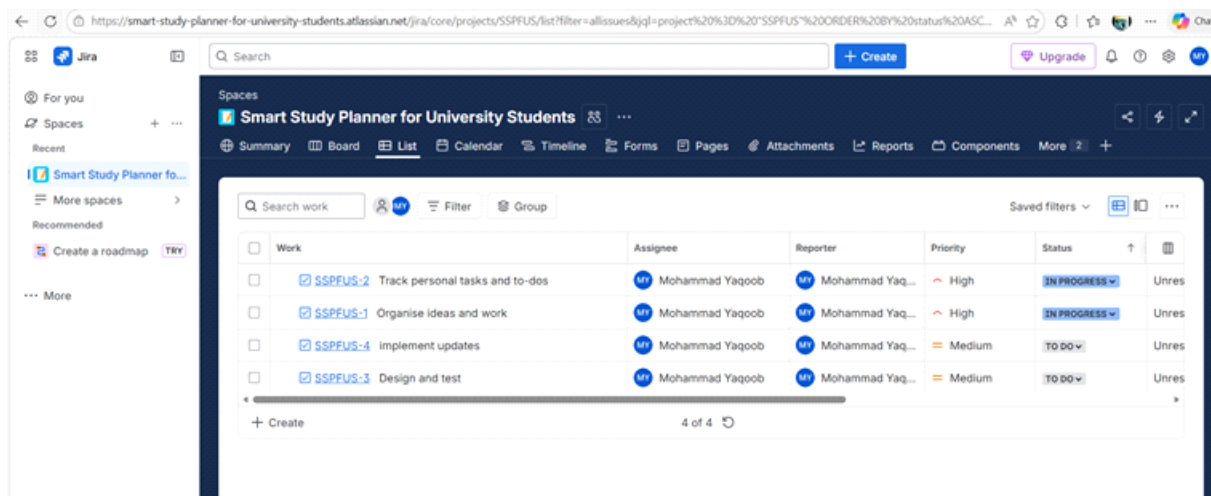
These technologies allow for a lightweight yet scalable solution, providing both usability and effective functionality.

Project Timeline and Task Schedule

Week	Task Description
Week 1	Research on time management systems and user needs [7], define requirements
Week 2	Design system architecture, ERD, wireframes, flowcharts

Week 3	Develop frontend interface (login, dashboard, assignment pages)
Week 4	Develop backend logic (task management, scheduling, notifications)
Week 5	Integrate frontend with backend, implement database queries
Week 6	Add interactive features (calendar view, progress charts)
Week 7	Testing, debugging, and refinement of user interface
Week 8	Final evaluation, documentation, and submission

The timeline ensures a stepwise development approach, prioritising core functionality first and enhancements later.



Screenshot 1: [Smart Study Planner for University Students - All work - Jira](#)

Q.2 Gantt Chart

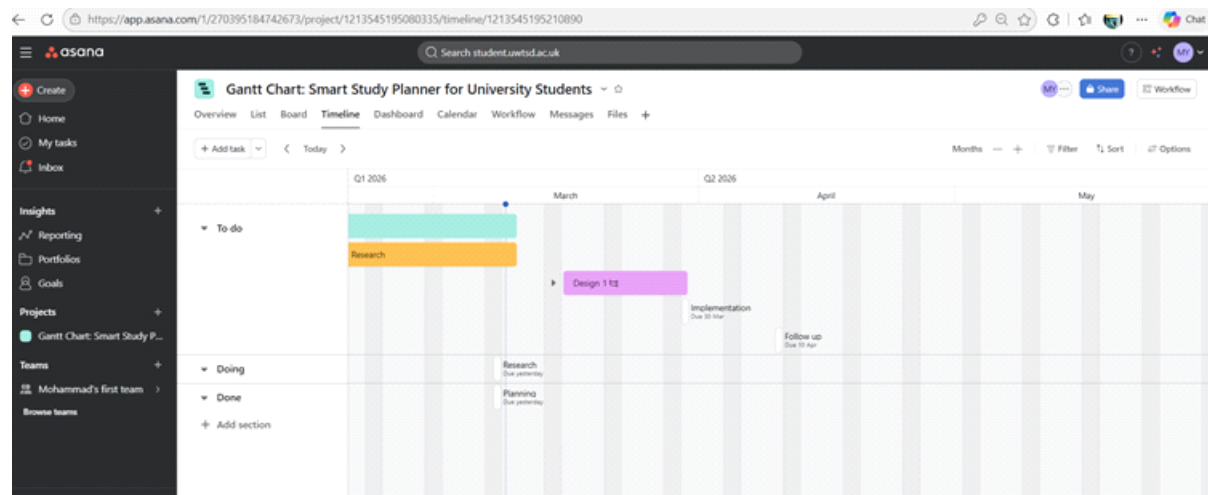
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A Gantt chart can be created using Microsoft Excel, Google Sheets, or project management tools like Trello, asana or MS Project. The chart will include task start and end dates, dependencies, and milestones.

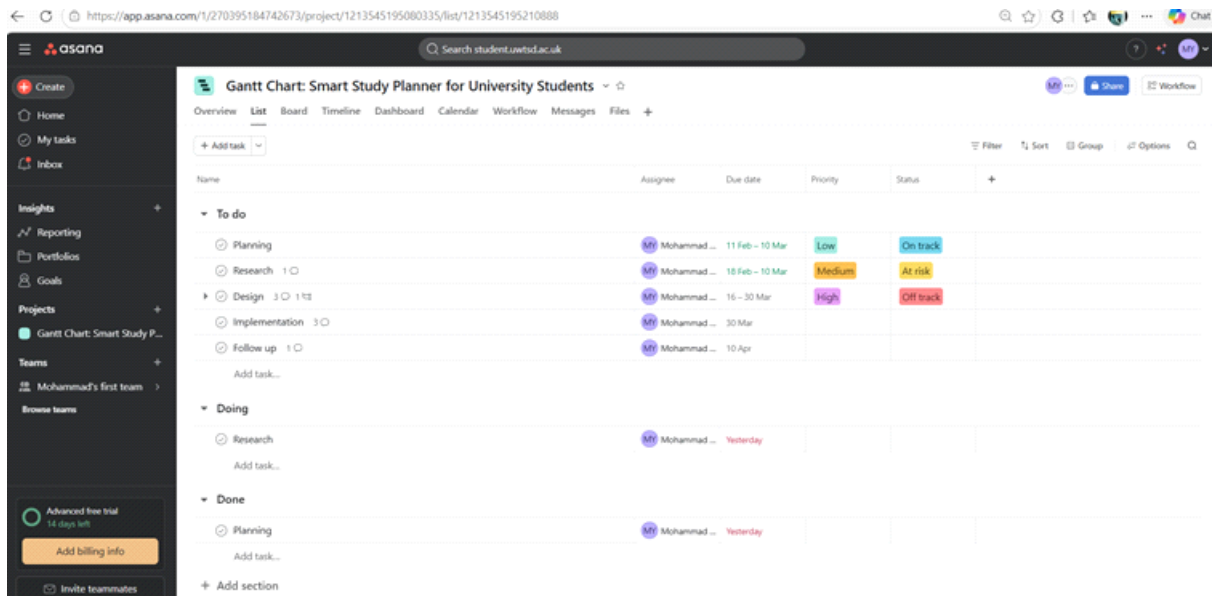
Example Stages for Gantt Chart:

- Research and Requirements
- System Design
- Frontend Development
- Backend Development
- Database Integration
- Interactive Feature Implementation
- Testing and Debugging
- Documentation and Submission

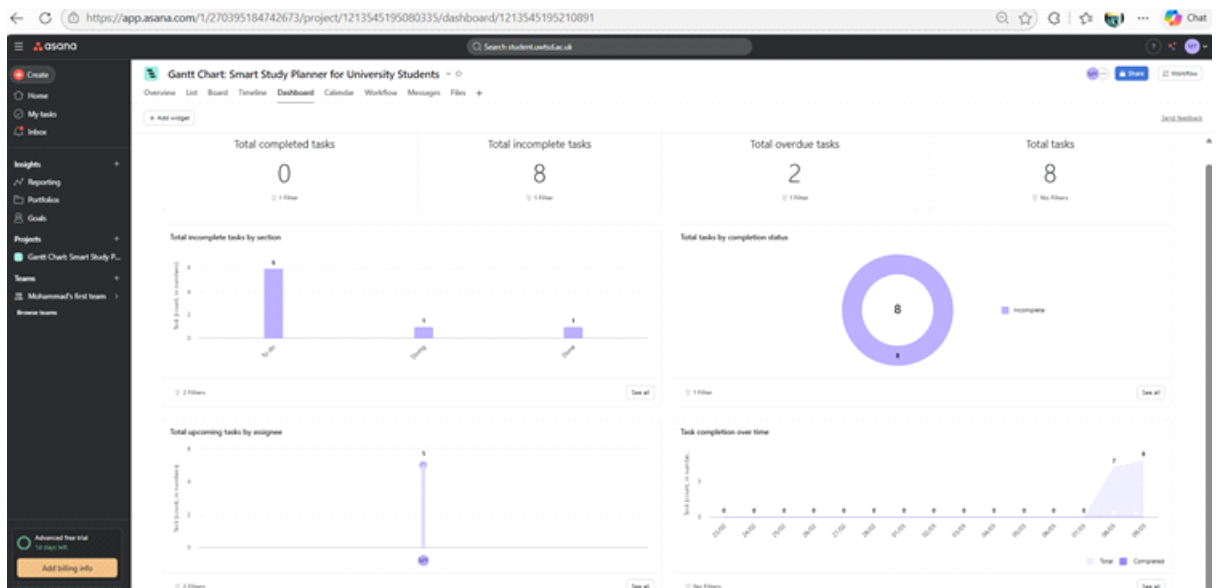
This visual representation ensures project progress tracking and helps manage deadlines effectively.



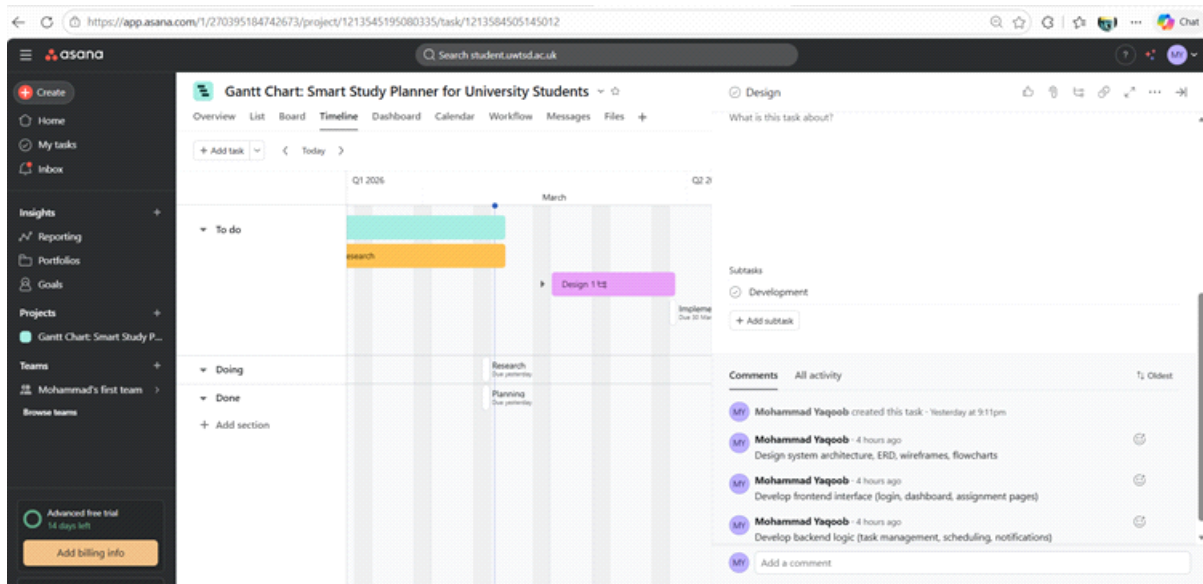
Screenshot 2: [Gantt Chart: Smart Study Planner for University Students - Asana](#)



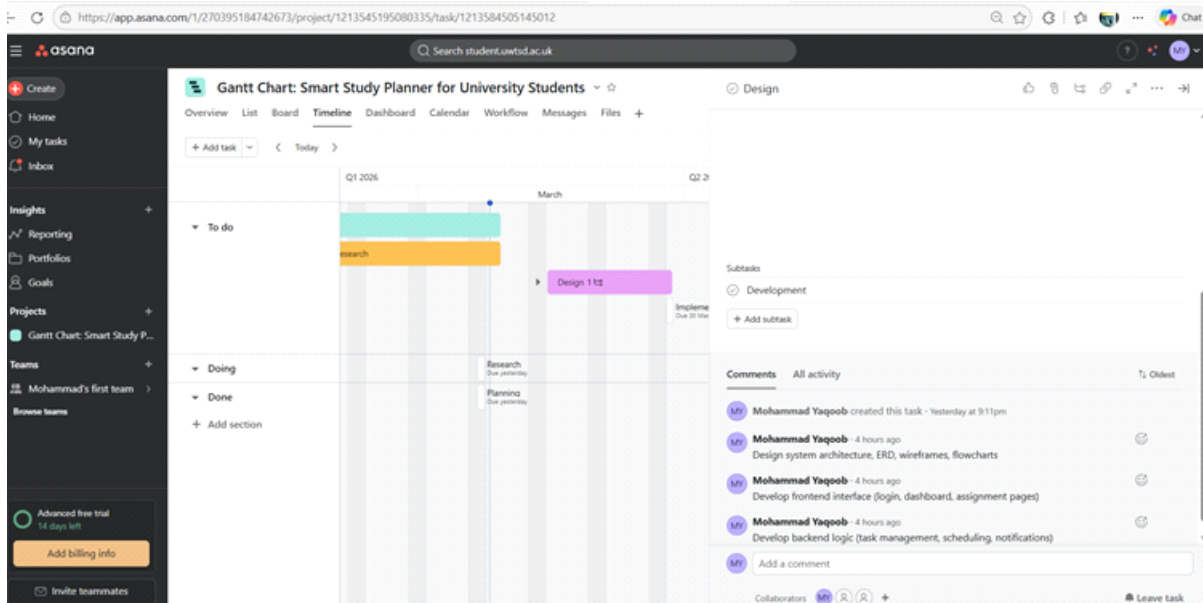
Screenshot 3: [Gantt Chart: Smart Study Planner for University Students - Asana](#)



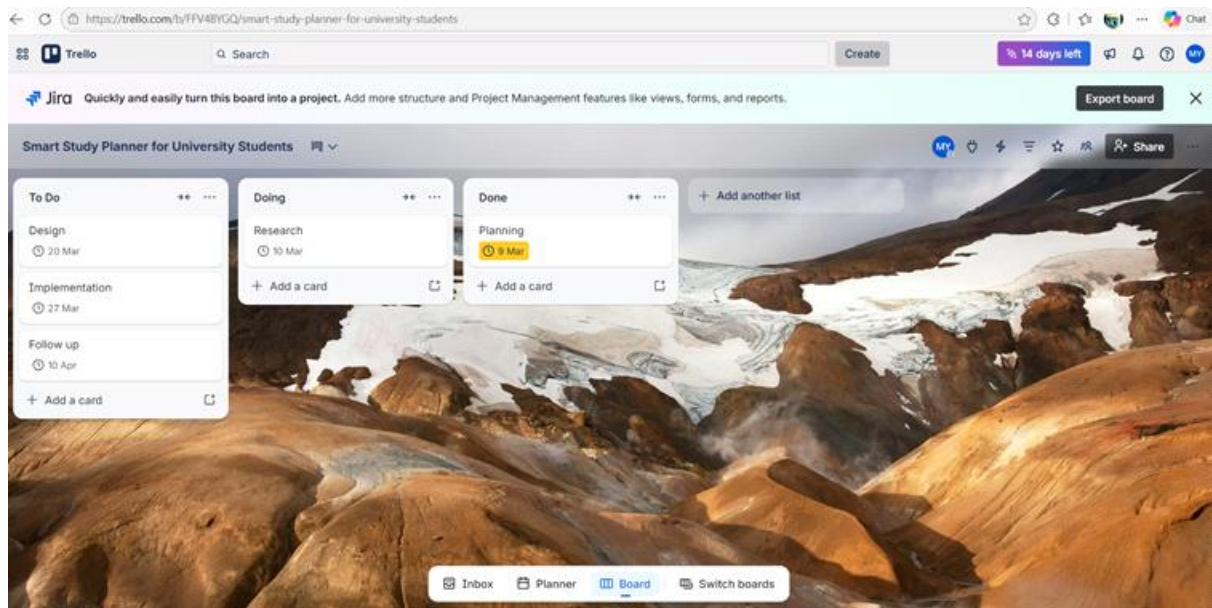
Screenshot 4: [Gantt Chart: Smart Study Planner for University Students - Asana](#)



Screenshot 4.1: Timeline is more detail with comments



Screenshot 4.2: Subtasks can be entered and comments for each timeline.



Screenshot 5: Similar chart in Trello: [Smart Study Planner for University Students | Trello](https://trello.com/1vFPV48YQZ/smart-study-planner-for-university-students)

Q.3 Risks and Mitigation Strategies

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Risk / Challenge	Impact	Mitigation Strategy
Technical Complexity – integrating database with frontend and dynamic scheduling	Medium	Begin with a small prototype; follow incremental development; use well-documented frameworks
Time Constraints – limited time to complete all tasks	High	Prioritise core features first (task creation, tracking), then enhancements; maintain weekly milestones
Data Accuracy / Input Errors – incorrect task dates or priorities	Medium	Implement input validation and confirmation prompts; thorough testing
User Engagement – users may find interface confusing or cluttered	Medium	Conduct usability testing; design intuitive layouts and clear dashboards
System Bugs / Crashes – unexpected errors in scheduling or notifications	Medium	Implement rigorous testing procedures; use version control to revert changes if needed

By planning ahead, testing incrementally, and prioritising core features, these risks can be significantly reduced.

Task 3: Project Development Method & Design Work

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Q.1 Development Method

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For the Smart Study Planner, the Agile Development Methodology is the most suitable. Agile focuses on iterative development, incremental delivery, and regular testing, which aligns well with web-based application projects [8].

Key reasons for choosing Agile include:

1. **Flexibility:** Agile allows changes in requirements during development, which is important as the user interface and scheduling logic may need refinement based on testing.
2. **Incremental Progress:** Core features (task management, calendar view, dashboard) can be implemented first, with additional features (notifications, progress charts) added in iterations.
3. **User Feedback:** Agile encourages testing after each iteration, enabling improvements to usability and functionality based on feedback.
4. **Risk Management:** Early identification of bugs or usability issues reduces project risk and improves final quality.

In practice, the project can be divided into weekly sprints:

Sprint	Tasks
Sprint 1	Requirements gathering, research, wireframes
Sprint 2	Database design and setup (ERD, tables)
Sprint 3	Frontend development: login, dashboard, add tasks
Sprint 4	Backend development: CRUD operations, scheduling logic
Sprint 5	Integration: link frontend and backend, dynamic calendar
Sprint 6	Interactive features: progress charts, reminders
Sprint 7	Testing and debugging
Sprint 8	Documentation and final refinements

Agile ensures that the project remains manageable, adaptable, and testable throughout the development cycle [9].

Q.2 Project Design Work

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1. Wireframes

Wireframes define the layout and structure of the application, ensuring usability and clear navigation [10].

- **Login Page:** Simple fields for username and password, with a “register” option.
- **Dashboard:** Displays upcoming tasks, completed assignments, and a calendar overview.
- **Add Task Page:** Users can input assignment details, deadlines, module, and priority.
- **Progress Tracker:** Visual charts showing completed vs. pending tasks.

Wireframes provide a blueprint for both frontend development and user experience design, reducing the risk of interface confusion during implementation.

2. Entity-Relationship Diagram (ERD)

The ERD models the database structure, showing how different entities relate [11].

Key Entities:

- **User:** Stores user information (user_id, name, email, password).
- **Task:** Contains assignment details (task_id, user_id, title, module, deadline, priority, status).
- **Category (Optional):** Groups tasks by type or module.

Relationships:

- One-to-many relationship: A user can have multiple tasks.
- Tasks are optionally grouped into categories for easier filtering.

This design ensures efficient storage, retrieval, and manipulation of tasks, supporting features like calendar views and progress tracking.

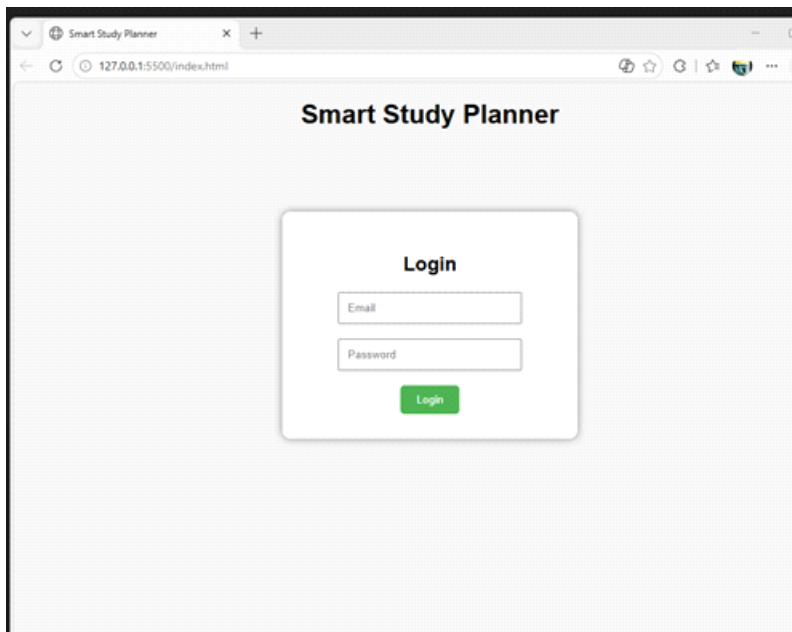
Q.3 Initial Practical Implementation

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The initial implementation includes frontend and backend prototypes. Screenshots document the progress:

1. Login Page

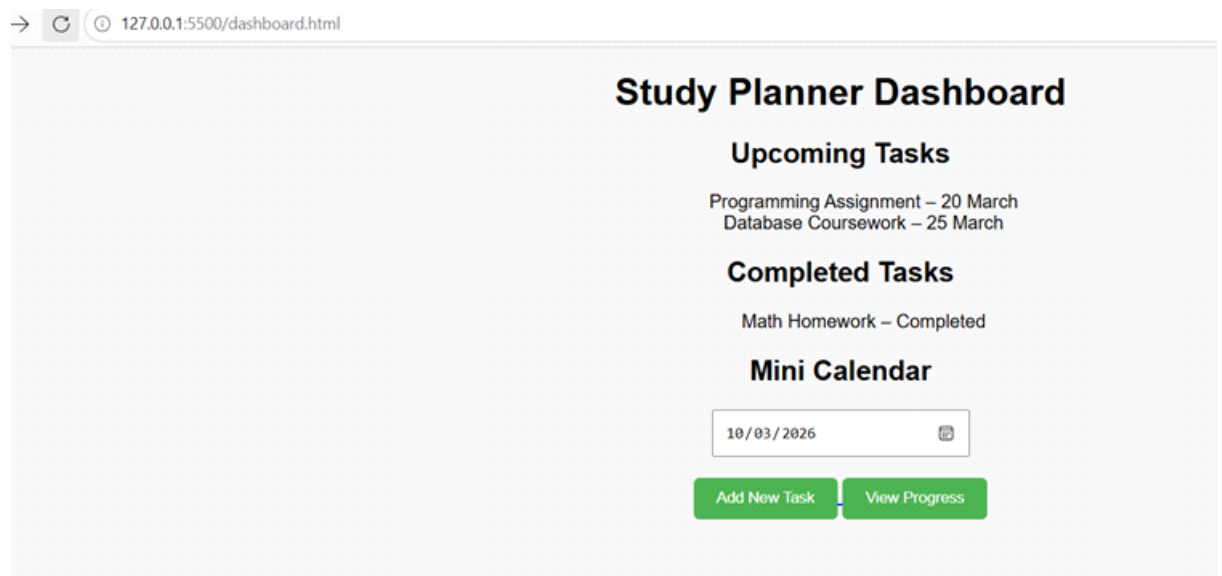
- Simple interface with fields for username and password.
- Purpose: Demonstrates secure user authentication implementation.



Screenshot 6: Log in Page

2. Dashboard

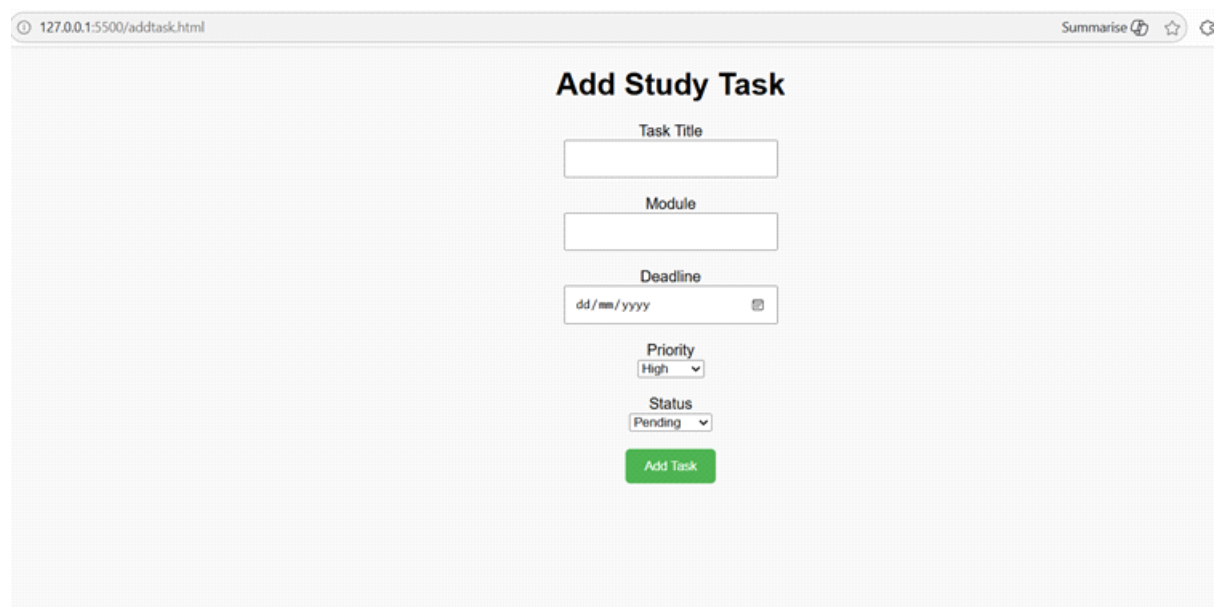
- Shows upcoming tasks, completed tasks, and a mini-calendar.
- Purpose: Validates layout and interactive elements for task overview.



Screenshot 7: Dashboard interface displaying upcoming tasks, completed tasks, and a calendar input for deadline tracking. This interface provides users with a quick overview of their study schedule.

3. Task Page

- Input fields for title, module, deadline, priority, and status.
- Purpose: Demonstrates CRUD functionality prototype.

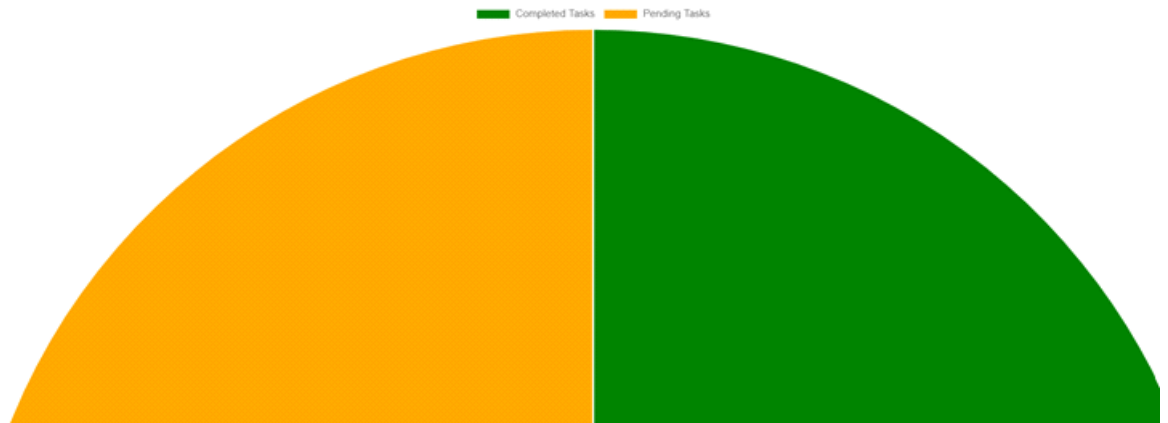


Screenshot 8: Add Task interface allowing users to input task title, module, deadline, priority, and status. This interface demonstrates the prototype structure for CRUD task management functionality.

4. Progress Tracker

- Simple chart showing completed vs. pending tasks.
- Purpose: Confirms integration of Chart.js for interactive visualisation.

Study Progress Tracker



Screenshot 9: Progress tracking visualisation implemented using Chart.js. The chart displays the proportion of completed versus pending tasks, providing users with a visual overview of their study progress.

References

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References

- [1] P. Kotler, *Innovation and Marketing for the 21st Century*, 2nd ed., New York, NY, USA: Pearson, 2018.
- [2] M. Jones, *History of Technological Innovation*, London, UK: Routledge.
- [3] D. Pink, *A Whole New Mind: Why Right-Brainers Will Rule the Future*, New York, NY, USA, 2005.
- [4] T. Watson, "Microwave Invention and Innovation," *IEEE Potentials*, vol. 36, no. 4, pp. 14-19, Jul.-Aug 2017.
- [5] H. Rosling, "The Joy of Stats," BBC Four, 2010. [Online]. Available: <https://youtu.be/jbkSRLYSojo>. [Accessed 09 03 2026].
- [6] S. Pinker, *Enlightenment Now: The Case for Reason, Science, Humanism, and Progress*, New York, NY, USA: Viking, 2018.
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- [9] S. W. Ambler, *Agile Modeling: Effective Practices for eXtreme Programming and the Unified Process*, New York: Wiley, 2002.
- [10] J. Garrett, *The Elements of User Experience: User-Centered Design for the Web and Beyond*, 2nd ed., New Riders, 2010.
- [11] C. M. S. Coronel, *Database Systems: Design, Implementation, & Management*, 19th ed., Cengage Learning, 2019.

Appendix

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Resources used:

← ↻ <https://www.youtube.com/watch?v=I16TJUp4SVA>

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or energy.

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BBC FOUR The Joy of Stats

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Hans Rosling's 200 Countries, 200 Years, 4 Minutes - The Joy of Stats - BBC

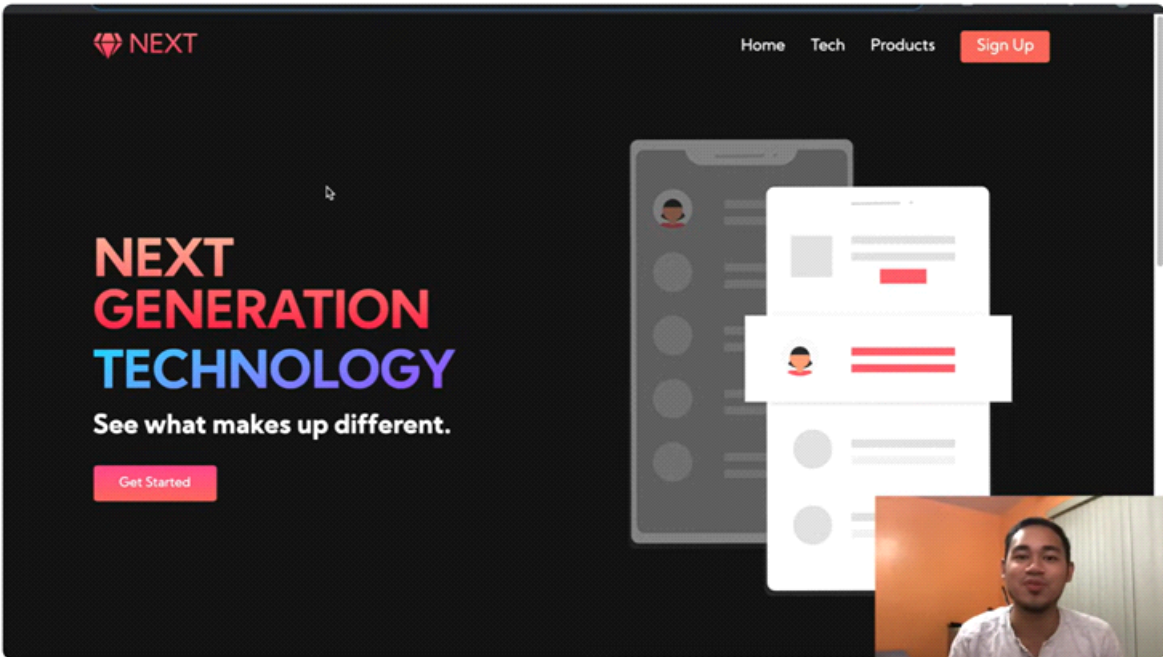
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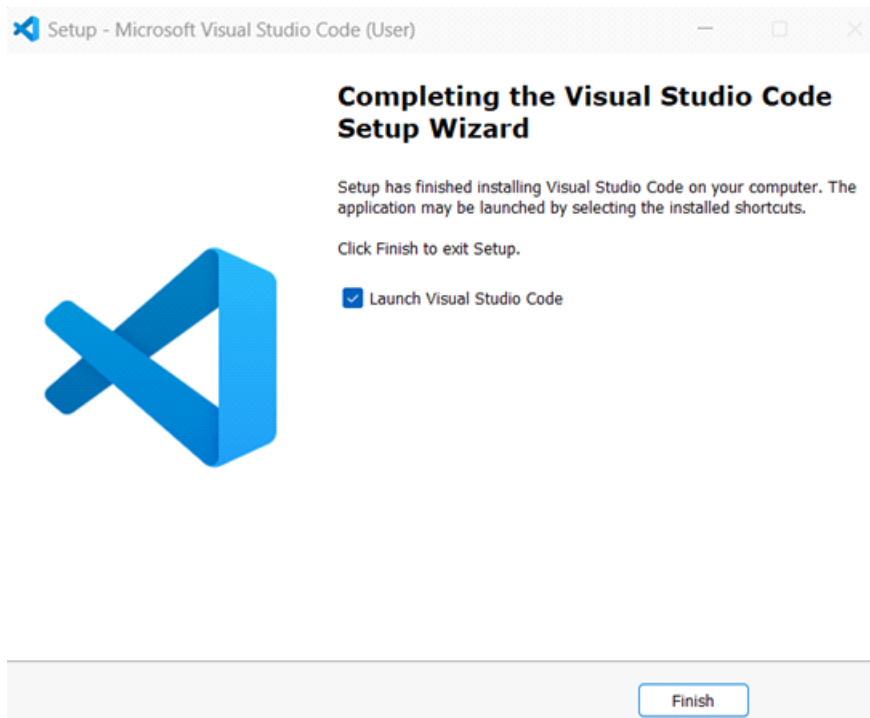
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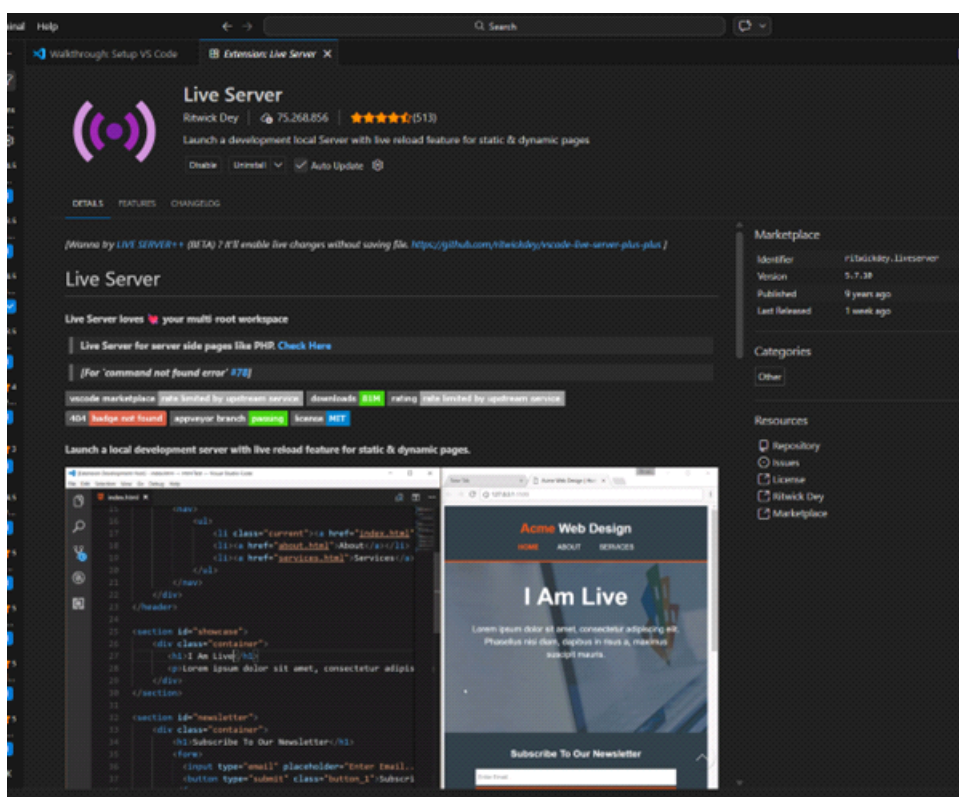
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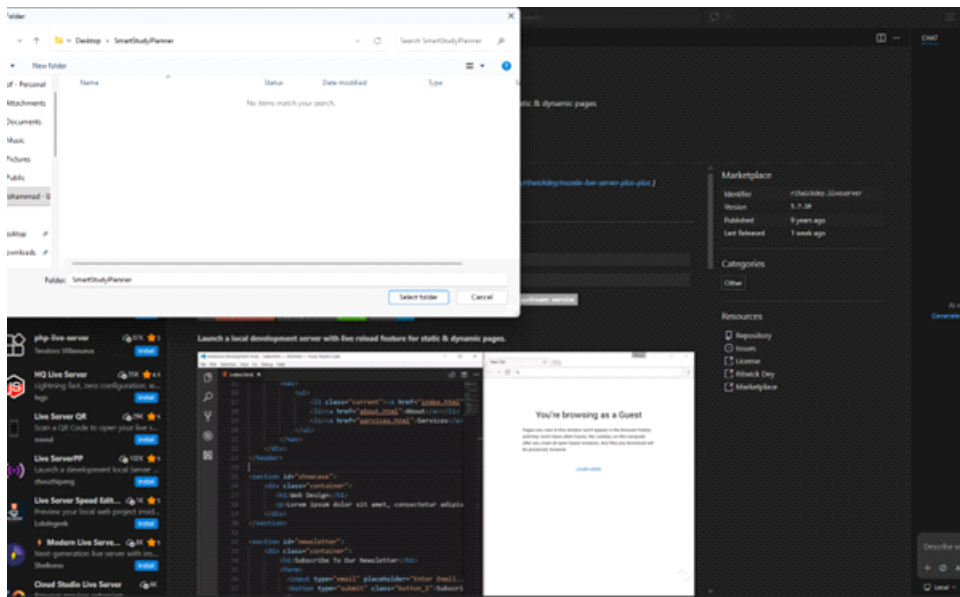
<https://www.youtube.com/watch?v=FazgJVnrVul>



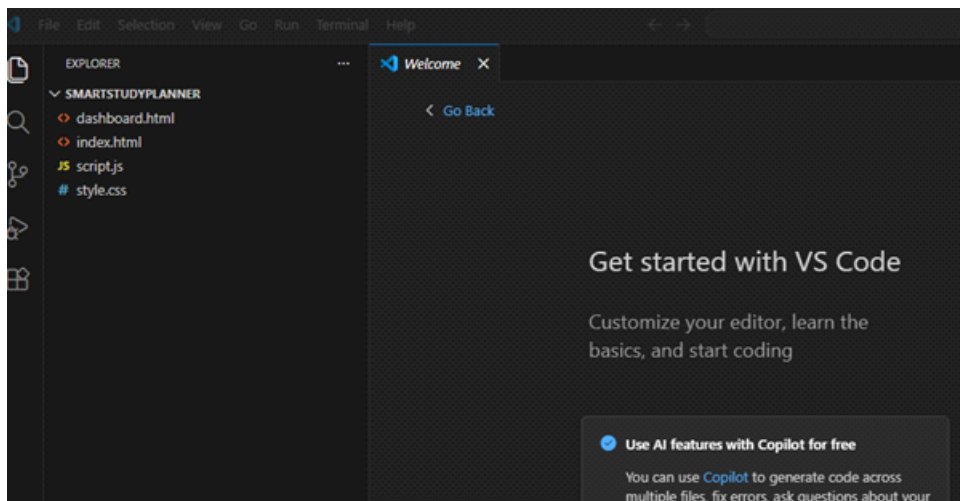
Screenshot 10: Visual Studio Code Setup Wizard



Screenshot 11: Installed live server



Screenshot 12: Created Folder



Screenshot 13: Created files for planning