

To-Do-App

A console for managing tasks for students Here is the Documentation of our To-Do App in the Programming Foundations class

Analysis:

Problem: As first-year BIT students, we face a challenge with juggling multiple modules, assignments, group projects, and personal study goals. This leads to constant brain overload and decision fatigue, which in turn leads to the following struggles:

- Difficulty in prioritizing the urgency of assignments, leading to effort underestimation.
- Poor Time Management caused by insufficient time allocation, leading to procrastination and last-minute stress
- Low productivity and not good focus as tasks lack clear boundaries & priorities, which causes mental strain during studies.

Impact:

Lack of a centralized system to maximize productivity, especially in first-year students, often leads to:

- Procrastination
- Inefficient study time
- last-minute stress
- Sometimes missed deadlines with projects/assignments.
- Poor Grades

Solution:

Our interactive To-Do-App with task organization provides an effective system and strategic ways to improve productivity by:
-Reducing Stress through the clear visualization of progress
-Improved Grades through timely assignment/project submission and better quality work as a result of a better structured time allocation.
-Implementing focus sessions with the Pomodoro app for higher productivity

Scenario:

Based on our modules, we have different requirements, teams, and group projects. The idea is to put all tasks and deadlines in the console application to get notifications and reminders for task management and completion.

User stories:

-As a user, I want to add a new task with a title, description, and priority so that I have all my To Do Tasks centralized and easily organized

- As a user, I want to see the "view my tasks" on the console, so that I can immediately get an overview of the workload I have

- As a user, I want to mark a task as complete, so that I can visually track my progress and maintain motivation
- As a user, I want to track time and see the time invested(in minutes/hours) for each task/project, so that I can accurately estimate time for future projects and improve my planning.
- As a user, I want to categorize based on topics, priority, due date, and color-code, so that I can constantly manage my time during stressful periods
- As a user, I want to delete old/redundant tasks, so that my task list remains clean and focused only on actionable items.
- As a user, I want to start and end a session using Pomodoro, e.g, (25 min work/5 min break), so that I can maintain deep focus and prevent burning out during long study sessions.
- As a user, I want to see the weekly, monthly, and yearly calendars

Use cases:

- Show Menu: Display list of actions in the console: Add Task, View Tasks, Mark as Done, Delete, Exit
- Create/Edit Tasks - Allow new entry or modification of tasks with details: title, description, due date, priority.
- Show Current Tasks: Display all tasks with clear status, priority, description, and time spent based on Pomodoro Info
- Edit or delete Tasks- Allow the user to modify an existing task's title, description, priority, or permanently delete it from the list.
- Tracking Tasks: Display statistical reports on productivity, e.g, completion time, time spent on all tasks, or each task.
- Pomodoro Session: Implement a precise timer function to start, pause, or reset structured work/break cycles (e.g, 25 minutes study, 5 minutes break) to improve focus.(long term)

1- Interactive App (console input) The application interacts with the user through the console, accepting input and displaying responses in real time. It should provide clear prompts, menus, and feedback to create an engaging and easy-to-use experience

2- Data validation (input checking) The application validates all user input to ensure data integrity and a smooth user experience. Invalid or missing data should be handled gracefully, with clear error messages and opportunities for correction

3- File processing(read/write) The application can read data from and write data to files, allowing users to save and retrieve information. Proper file handling ensures that data is stored securely and can be accessed or updated when needed

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