TO-DO APP

A Project Report

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BONAFIDE CERTIFICATE

Certified that this project report "TO – DO APP" is the bonafide work of "**ROHIT KUMAR GUPTA, SATYAM PRAKASH, RAJIV KUMAR**" who carried out the project work under my/our supervision.

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Submitted for the project viva-voce examination held on …………………

INTERNAL EXAMINER	**EXTERNAL EXAMINER**

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ABSTRACT

This application aimed at the organization of tasks is of facilitated format where the user state their needs and the tasks are organized accordingly, so as to maximize ordering capability. The application addresses task management in a more personal approach since users are allowed to create, edit, prioritize, and categorize their lists of tasks into their own lists which can be developed into a map of tasks. Built in features like deadline reminders and management plans help the users remain in target time while planning automation brings down routine task management to spend less time and effort. The app, even though with such light features, still offers its users a complete focus approach— built-in milestones where progress stays on the goal and the process moves further for its visualization.

Users do not need to repeat themselves over communication because the app allows them to share lists and each task can be assigned with comments. CTAs provide a step-down approach and these can break big tasks into smaller and manageable pieces, which help users keep their eyes on the goal and not on the details. Syncing with calendar applications, the app makes planning much better, creating seamless ways for its users to plan and toolbox deadlines from different calendar applications.

This easy and efficient task ordering application offers intuitive UX so that users can manage their devices on the move and keeps collaboration at the forefront by ontological understanding of devices. This application is useful.

CHAPTER 1

INTRODUCTION

In today's fast-paced world, managing time and work effectively to meet personal and professional goals is essential to staying productive. A to-do list application acts as a digital assistant, helping individuals easily organize and prioritize their daily tasks. Unlike traditional spreadsheets, this app provides an intuitive, interactive and user-friendly format for business users, with advanced features such as a date to remember, essential work, and the ability to create groups for different areas of life or work

With the rise of mobile and cloud technology, to-do list apps can become indispensable tools for individuals looking to streamline their workflow These apps help users not only track and complete tasks but also it also provides integration with other tools, such as calendar and project management software , to create an integrated productivity ecosystem In this regard, a well-designed To-Do List app can give you the ability to manage time, with purpose various aims, and pursuing progress are more effective, to have a structured and more effective way of life

1.1 Objective

The task list application aims to empower users to efficiently manage their tasks and responsibilities in an intuitive and user-friendly manner. By providing a platform that simplifies creation and scheduling, the app aims to increase productivity with such features as customizable reminders, prioritization, and allocation.

The app seeks to promote organization by allowing users to divide tasks into specific tasks or groups, making it easier to focus on aspects of their personal and professional lives cross-platform compatibility so users can easily access and update their to-do lists from any device This is guaranteed

Ultimately, the to-do list application seeks to be an efficient tool that not only helps users manage their time more effectively but also contributes to a more balanced, organized and satisfying lifestyle also.

1.2 System Specification

Hardware Requirements:

- Processor: A modern multi-core processor (Intel i3 or equivalent and above) is recommended for smooth performance when using
- Memory (RAM): At least 4 GB of RAM is suggested for general use and light tasks.
- Storage: Minimal local storage is required; however, adequate space for temporary browser files and any locally saved data is recommended (approximately 500 MB to 1 GB).
- Internet Connection: A stable internet connection with at least 10 Mbps speed is ideal for optimal performance.
- Operating System: Compatible with all major operating systems, including:

    1. Windows
    2. macOS
    3. Linux

- Web Browser: A modern web browser with JavaScript and HTML5 support is required for the best user experience. Recommended browsers include: Google Chrome, Microsoft Edge etc

Chapter 2

Literature View

Technological advancements, changing consumer behaviour and effective scheduling solutions needing more research and analysis issues have examined the growth of this industry, with a focus on user experiences, technology innovations and business models Availability This literature review focuses on key research and findings related to to-do list applications, their development, user expectations, and business challenges.

1. Business processes and seed production

Research shows that effective management is necessary to increase productivity at both the personal and professional levels (Mackenzie, 2007). Studies highlight how digital tools, such as to-do lists, can help individuals prioritize tasks, reduce cognitive load, and improve time management (González & Mark, 2004).

2. User interface and experience

Resource management systems play an important role in the effectiveness of management systems. Research by Nielsen (2010) highlights the importance of flexible design, easy navigation and easy communication to improve user satisfaction and engagement

3. Goal setting and motivation

The psychology of goal setting plays an important role in task completion. According to Locke and Latham (2002), setting specific, measurable goals significantly increases motivation and performance.

CHAPTER 3

OVERALL DESCRIPTION OF THE PROPOSED SYSTEM

3.1 Overview

The To-Do List Application is a cross-platform solution that allows users to efficiently create, manage and track tasks. It is designed to meet a wide range of users including individuals, teams and organizations, enabling them to prioritize projects, set delivery dates and collaborate effectively

3.2 System Architecture

The system architecture of the To-Do List Application follows a client-server model. The architecture consists of:

- **Frontend**:

  Developed using React.js (web) for responsive design and seamless user experience.

- **Backend**:

  Node.js, Express for server-side logic.

  MongoDB as the database management system for data storage.

- **APIs**:

  RESTful APIs to facilitate communication between the frontend and backend

3.3 User Roles

The application will accommodate different user roles to enhance functionality:

1. Individual Users:

   Manage personal tasks and goals.

   Use basic features of task management and analytics.

2. Administrators:

   Oversee user accounts and manage application settings.

   Monitor application performance and user engagement.

3.4 Functional Requirements

The key functionalities of the To-Do List Application include:

1. User Account Management:

   User registration and login (email/password and social media options).

2. Task Management:

   Create, edit, and delete tasks.

   Mark tasks as complete or pending.

3. Goal Setting and Tracking:

   Users can set long-term goals and associate them with specific tasks.

   Progress tracking to monitor task completion related to goals.

4. Reminders and Notifications:

   Customizable reminders for tasks and deadlines.

   Push notifications for web users to ensure timely updates.

5. Analytics and Insights:

   Dashboard to visualize task completion rates and productivity trends.

   Insights based on user behaviour to improve task management.

3.5 System Feature

1. User Account Management

- Registration and Authentication:

Users can register using their email or social media

Secure login/logout functionality with password recovery options.

- Profile Customization:

  Users can update their profile information, including name, email, and password.

2. Task Management

- Task Creation and Editing:

  Users can create new tasks with titles, descriptions, and due dates.

  Edit existing tasks to update details or change their status.

- Task Categorization:

  Users can create and manage custom categories or tags for organizing tasks.

3. Goal Setting and Tracking

- Goal Creation:

  Users can set specific, measurable goals associated with tasks.

- Progress Tracking:

  Visual progress indicators for goals based on task completion rates.

4. Analytics and Insights

- Task Completion Statistics:

  Dashboard displaying completion rates, pending tasks, and productivity trends.

- Personalized Insights:

Recommendations based on user behavior and task management patterns.

7. Search and Filter Functionality

- Task Search:

  Users can quickly search for tasks by title, category, or due date.

- Filtering Options:

  Filter tasks based on priority, completion status, or due dates.

8. Cross-Platform Synchronization

- Device Compatibility:

  Users can access their tasks from any device (web, iOS, Android).

9. Security Features

- Data Encryption:

  User data, including passwords and personal information, is encrypted for security.

Chapter 4

Design

The design phase of a business process application plays an important role in its development, ensuring that the system works as intended and in line with user expectations—individual users and groups follow the same path as complied by any software project. and tests. This process ensures that the project is built and properly verified.

The design process for the to-do app Website can be broken down into two key stages:

1. Preliminary Design (High-Level Design)

High-level thinking focuses on describing the overall structure of the to-do app by converting user requirements and business requirements into data models.

- User Interface: Create pages and layouts for different users (individual users, groups, and administrators).

- Task management module: Lets users learn how to create, edit, and delete tasks, including setting due dates, priorities, and status (e.g., pending, in progress, completed).

- Categorization and Tagging: A feature that allows users to categorize tasks into lists or projects and use tags for better organization and filtering.

- Resources: Create content that allows users to share tasks and lists with others, allowing new stories and stories to be shared.

- Database Structure: The definition of key data objects such as users, services, lists, and comments, to ensure that the database can maintain all data consistently. At this stage, high-level architecture is designed to ensure all these major components work cohesively, delivering a seamless experience for users.

4.1 DFD Diagram

The Data Flow Diagram (DFD) for a To-Do App serves as a visual tool to represent how data flows through the system, showing the interaction between users, teams, and the app's processes. It is divided into different levels to show varying degrees of detail.

1. Level 0 Data Flow Diagram (DFD) – To-Do App Overview

Level 0 provides a high-level overview of the DFD To-Do App, showing the interactions between external entities (such as individual users, groups, and employees) and key system users

Key Components of Level 0 DFD for To-Do App:

External Entities:

- Individual Users: Individuals using the app to create, manage, and complete tasks.
- Administrators: Users responsible for managing app settings, user accounts, and overall system monitoring.

Main Processes:

- User Management: Handles user registration and authentication, allowing to log in, manage their profiles, and perform role-specific actions.
- Task Management: Allows users to create, edit, delete, and organize tasks, including setting due dates, priorities, and statuses (e.g., pending, in progress, completed).
- Data Analysis & Reporting: Generates reports for users or teams to review completed tasks, pending items, and overall productivity.

Data Stores:

- User Profiles: Stores data for individual users and teams, including login details, contact information, and preferences.

- Task Data: Contains information about tasks, including descriptions, due dates, priorities, and statuses.

2. Data Flow Diagram (DFD) Level 1 for To-Do App

The Level 1 DFD provides a more detailed breakdown of high-level methods than the Level 0 DFD for a To-Do App. It divides each main process into subprocesses and explains in detail how data flows between these subprocesses, external entities, and data stores.

Key Processes in Level 1 DFD for To-Do App:

1. User Management:

Register/Login: Individual users and teams register and log into the app. User credentials and profiles are stored in the User Profiles data store.

Profile Management: Users update their profiles, preferences, and settings, and this information is stored in the User Profiles data store.

2. Task Management:

Create Task: Users create new tasks, entering details such as title, description, due date, and priority. This data is stored in the Task Data store.

Edit/Delete Task: Users can modify or remove tasks, with updates reflected in the Task Data store.

Organize Tasks: Users can categorize tasks into lists or projects, and this organization is stored in the Task Data store.

3. Entity-Relationship (ER) Diagram for Todo App Website

The ER Diagram for the To-Do App shows the relationships between the main tasks in the system and helps explain how data is organized and how companies communicate

Key Entities in the ER Diagram for To-Do App:

1. Users:

   Description: Represents all the users of the app, including individual users and teams.

   Attributes: User ID, Name, Email, Password, Role (Individual User, Team Member, Administrator), Contact Information, Preferences.

2. Tasks:

   Description: Represents the tasks created by users.

   Attributes: Task ID, Title, Description, Due Date, Priority, Status (Pending, In Progress, Completed), User ID.

3. Reports:

   Description: Represents the productivity and activity reports generated for users.

   Attributes: Report ID, User ID, Task Completion Rate, Date

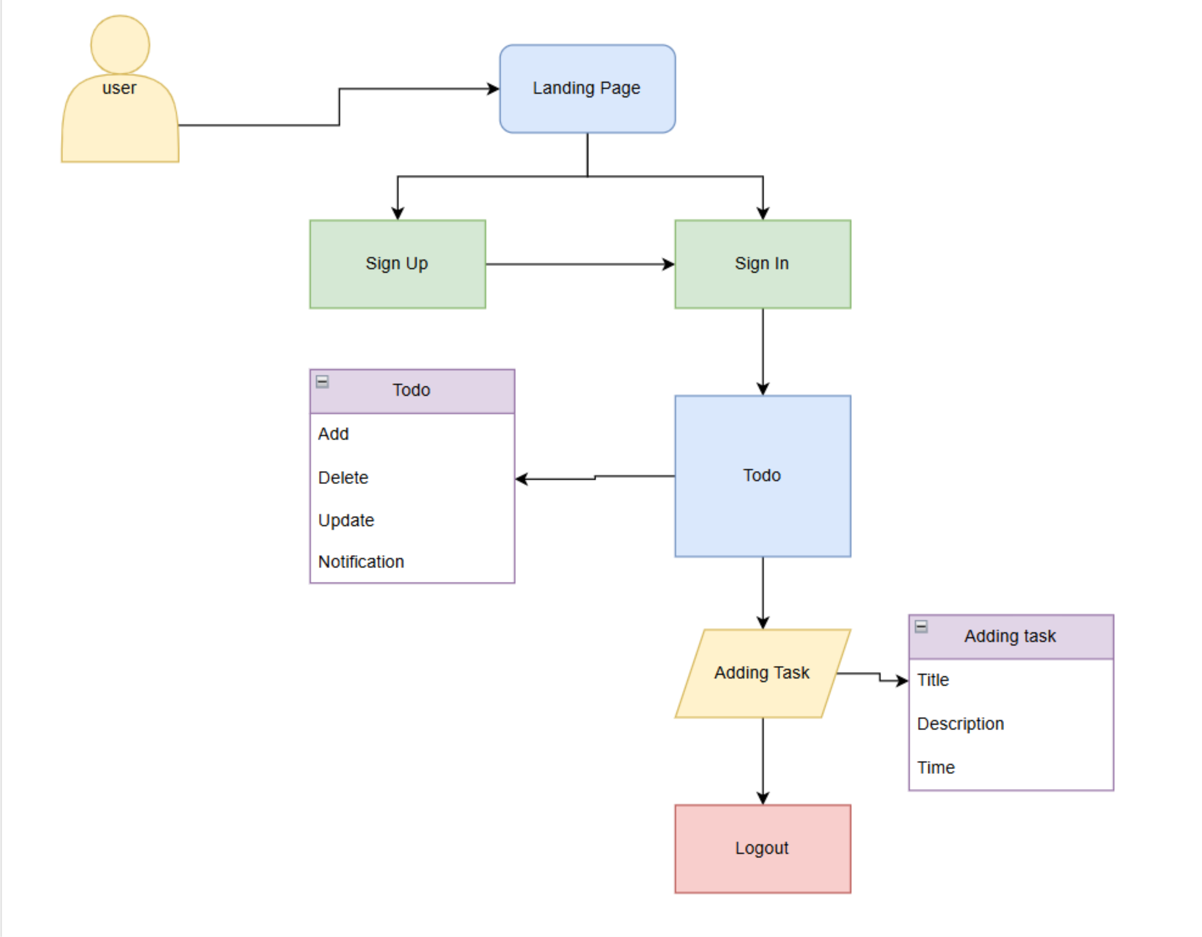
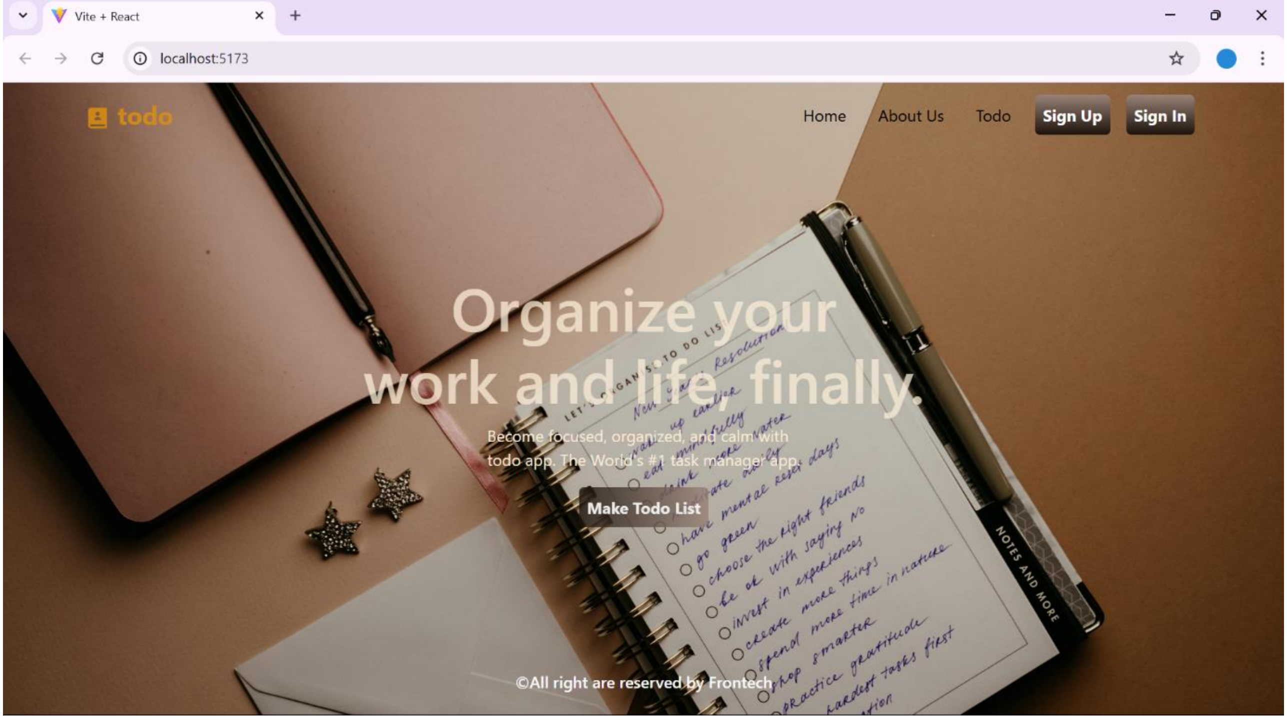


Fig 4.1: Flow Chart

Chapter 5

OVERVIEW AND IMPLEMENTATION

1. HOMEPAGE



Organize your work and life, finally.

Become focused, organized, and calm with todo app. The World's #1 task manager app.

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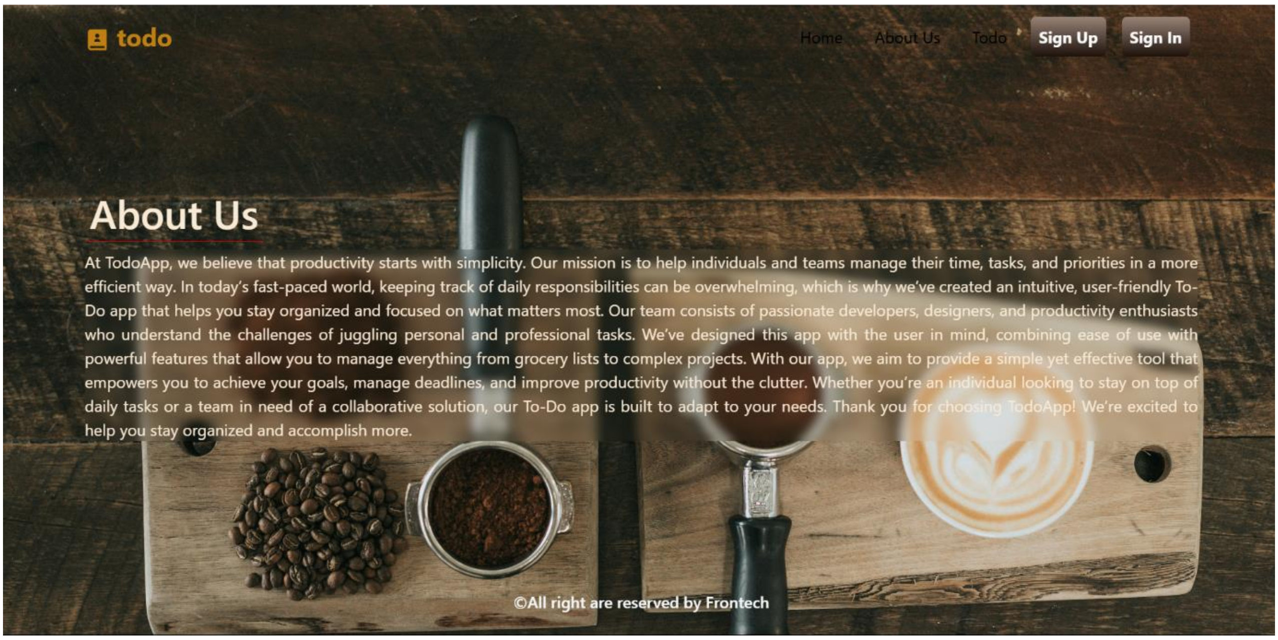
2. ABOUT US PAGE



About Us

At TodoApp, we believe that productivity starts with simplicity. Our mission is to help individuals and teams manage their time, tasks, and priorities in a more efficient way. In today's fast-paced world, keeping track of daily responsibilities can be overwhelming, which is why we've created an intuitive, user-friendly To-Do app that helps you stay organized and focused on what matters most. Our team consists of passionate developers, designers, and productivity enthusiasts who understand the challenges of juggling personal and professional tasks. We've designed this app with the user in mind, combining ease of use with powerful features that allow you to manage everything from grocery lists to complex projects. With our app, we aim to provide a simple yet effective tool that empowers you to achieve your goals, manage deadlines, and improve productivity without the clutter. Whether you're an individual looking to stay on top of daily tasks or a team in need of a collaborative solution, our To-Do app is built to adapt to your needs. Thank you for choosing TodoApp! We're excited to help you stay organized and accomplish more.

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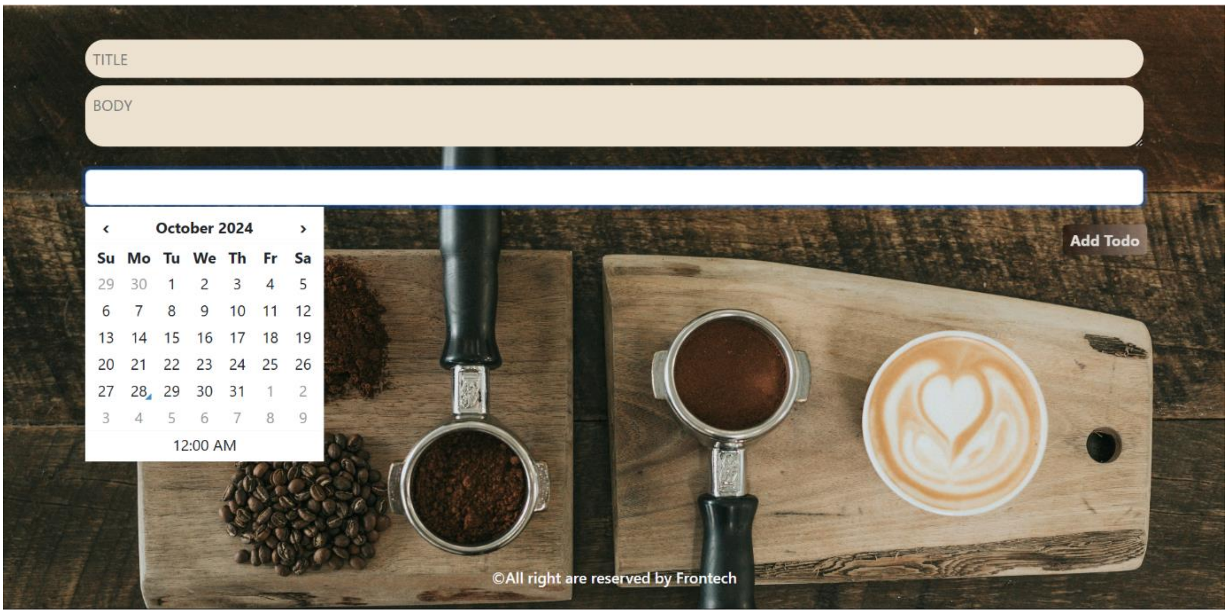
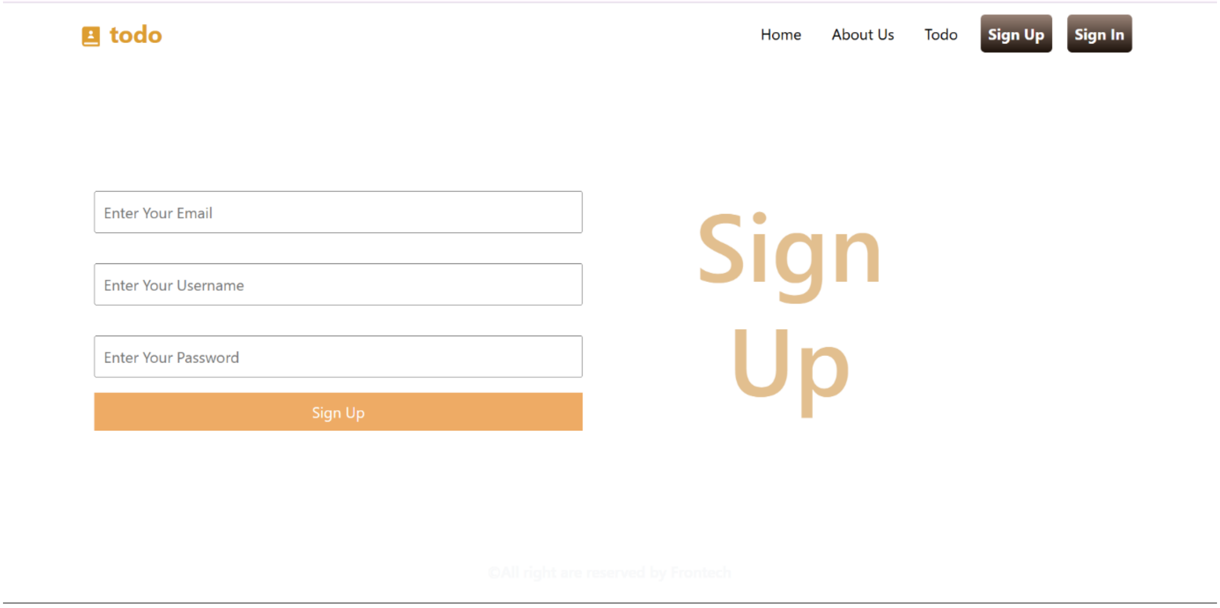
3. TODO PAGE

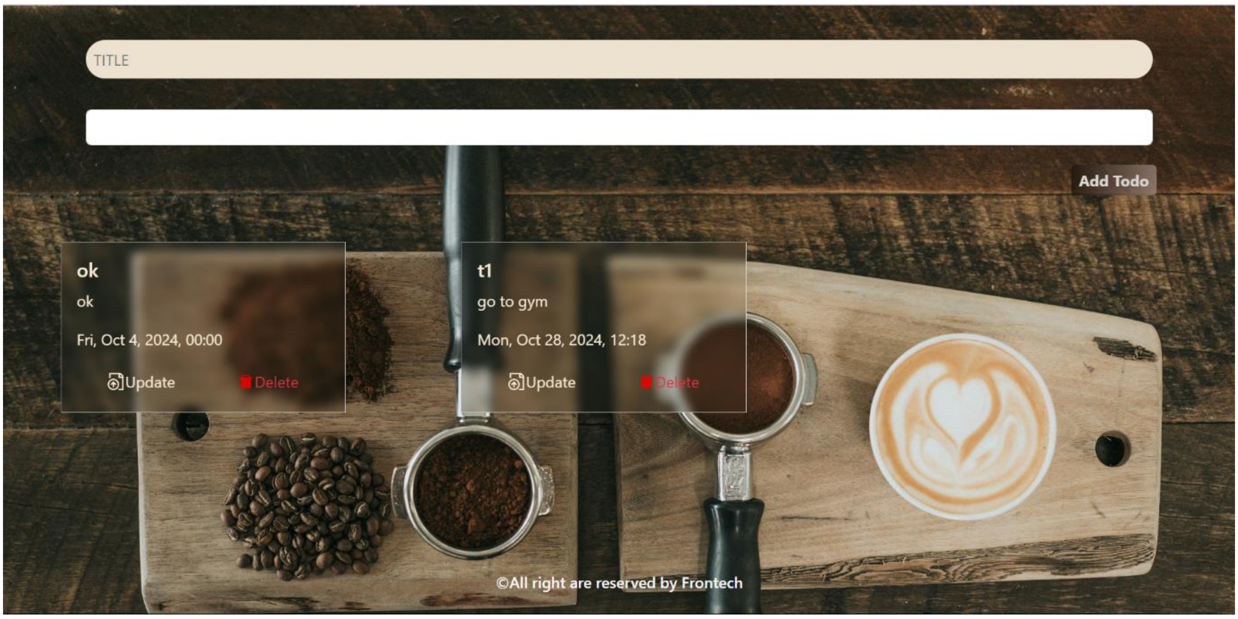


Su	Mo	Tu	We	Th	Fr	Sa
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9

4. SIGN UP PAGE



5. TODO TASK MANAGEMENT PAGE



ok

ok

Fri, Oct 4, 2024, 00:00

t1

go to gym

Mon, Oct 28, 2024, 12:18

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Chapter 6

IMPLEMENTATION DETAILS

6.1 Frontend Implementation

The frontend of the To-Do App is developed using React.js, offering a dynamic and responsive user interface. The focus is on creating an intuitive user experience, enabling individual users and teams to easily manage their tasks.

1. Core Technologies:

- React.js: Used for building the user interface and managing the state of various components.
- React Router: For client-side routing, allowing users to navigate between different pages (task lists, reports, etc.)
- Axios: For making API calls to the backend to fetch and submit data.
- Bootstrap / Material-UI: For responsive design and pre-built UI components, improving the appearance and usability of the platform.

2. Key Features:

- User Registration and Login:

  A registration form that allows users to create accounts by entering their details (name, email, password).

  Secure login functionality enables existing users to access their accounts.

- User Profile Management:

  Users can view and edit their profiles, manage preferences, and update contact information.

- Task Management:

Users can create, edit, and delete tasks, including setting due dates, priorities, and statuses.

- Reporting and Analytics:

  Users can generate reports on their task completion rates and overall productivity.

  Visual analytics provide insights into task management and collaboration.

3. UI Design and Theme Management:

- The user interface is designed to be user-friendly and responsive, ensuring compatibility across different devices (desktop, tablets, smartphones).
- Users can switch between light and dark themes, with their preferences stored in local storage for a personalized experience.

6.2 Backend Implementation

The backend of the To-Do App is built using Node.js and Express.js, providing a robust framework for managing API requests, authentication, and processing.

1. Core Technologies:

- Node.js: For executing server-side JavaScript, handling requests, and managing asynchronous operations.
- Express.js: It simplifies routing and middleware handling.
- Bcrypt: For hashing passwords before storing them in the database

2. Key Features:

- User Authentication:

  Handles user registration, login, and password reset functionalities.

JWT tokens are issued upon successful login, ensuring secure access to protected routes.

- API Development:

  RESTful APIs handle operations such as user management, task management, and collaboration.

  CRUD (Create, Read, Update, Delete) operations are implemented to manage profiles, tasks, and collaborations.

- Task Processing and Management:

  Business logic for managing tasks, real-time updates (e.g., task assignments and deadlines), and interactions between users.

  Middleware functions handle error logging, request validation, and authentication checks.

6.3 Database Implementation

The database for the To-Do App is managed using MongoDB that offers flexibility and scalability for storing user data, tasks, collaborations, and reports.

1. Database Structure:

- User Collection:

  Fields: userId, name, email, password, role (individual, team member, administrator), profile (preferences, contact info).

  Indexes: Unique index on the email field to prevent duplicate user accounts.

- Task Collection:

Fields: taskId, title, description, duedate, priority, status (pending, in progress, completed), userId.

Relationships: Links to the User collection (creator) and collaborations.

- Collaboration Collection:

  Fields: collaborationId, taskId, userId, comment, timestamp.

  Relationships: Linked to specific tasks and users.

- Reports Collection:

  Fields: reportId, userId, task completionrate, daterange, metrics.

  Relationships: Generated based on user tasks.

2. Data Relationships:

- A User can be an individual user, team member, or administrator.

CHAPTER 7

SYSTEM STUDY

The planning takes a look at segment focuses on a detailed evaluation of the proposed To-Do App, identifies the limitations of the present workflow, and defines the necessities and targets for a green implementation and it is simple to use.

1. Overview of Existing Systems

Now management structures, together with Todoist, Trello,have come to be vital tools to help users control responsibilities and projects

• Platform dependency: Some business control applications require particular software program or are simplest optimized for positive gadgets, making them inaccessible.

• Complex navigation: Too many features and alternatives can weigh down customers, growing a difficult experience for brand spanking new users

• Lack of integration: Many platforms fail to supply a totally incorporated experience, making it difficult for users to manipulate tasks.

2. The significance of a To-Do App

The proposed To-Do App targets to cope with these obstacles with the aid of creating a easy, green and user-friendly platform. Key advantages:

• Cross-platform accessibility: Users can access the application from any net-related device, without the want for unique software program/packages

• Optimized user experience: Intuitive design simplifies navigation, making it easier for customers to create and personalize activities.

- Integrated capabilities: The platform will integrate control, business tools and consumer profiles.

3. Systematic assessment

Systems evaluation allows you to categorise the components of the proposed To-Do App and recognize their features and the way they interact with each other.

Front quit (purchaser side) analysis

- User Interface: The UI focuses on a smooth user experience, permitting customers to create and control content.

Chapter 8

System Testing

System checking out is an essential part of the software program development lifecycle, vital to ensure that the To-Do App meets all exact necessities. This section guarantees that everyone additives of the machine, back and front, paintings together seamlessly. The principal goal is to discover and enhance any deficiencies or problems before enforcing the device.

1. Objectives of testing

The most important goals of machine testing for To-Do App are as follows.

• Performance verification: Ensure that the utility performs as predicted in precise and area instances, presenting a dependable consumer enjoy.

• Component Interaction Verification: Confirm that all additives (frontend, backend, API integration) work collectively seamlessly.

• Error detection: Identify any errors, performance bottlenecks, or usability issues, and deal with them speedy to enhance general application performance.

• Security Assurance: Ensure that the security of both person statistics and the machine is satisfactorily dealt with to ensure user self-belief.

2. Functional trying out

Functional testing verifies that the machine meets its functional necessities.

• User registration and login: Ensure that users can register, login and maintain their profile without any issues.

• Task management: Ensure that customers can create, edit, and delete obligations, assign priorities, and hold due dates.

• Progress monitoring: Confirm that customers can track the reputation in their projects and see what number of had been finished.

CHAPTER 9

CONCLUSIONS

The improvement of the To-Do App represents a vital step towards increasing productivity and productiveness for users. Focusing on consumer-friendly interfaces, robust functionality and smooth integration, the project pursuits to provide an effective platform for organizing day by day responsibilities and taking part with others.

Throughout the challenge, we diagnosed key requirements that fashioned the layout and implementation section. The app lets in customers to simplify, edit, delete obligations, set priorities, and control time limits. Additionally, collaboration allows customers to percentage duties with group contributors and check development together, making it a treasured device for sensible and expert.

The full-size testing section ensured that all components of the software laboured in harmony, ensuing in a dependable and secure software. The feedback supplied at some point of the User Acceptance Testing (UAT) section provided important insights that recognized changes wished, similarly enhancing the general person enjoy.

Moving ahead, the To-Do App has the potential for continued improvement and growth. Future updates may also include superior functionality consisting of repeatable obligations, memory, and integration with third-birthday party programs. Committed to non-stop development, the To-Do App goals to be a versatile and quintessential tool for users seeking to attain and deliver their dreams performance has advanced.

In end, the To-Do App now not most effective meets the instant needs of its customers but additionally lays the inspiration for destiny trends on the way to significantly improve its capability and consumer revel in.

CHAPTER 10

REFERENCES

1. W3Schools. (2024) is the. HTML, CSS, JavaScript documentation. Retrieved from https://www.w3schools.com

Advanced features for web development languages such as HTML, CSS, and JavaScript, which were used as the front end of the To-Do app.

2. Information sheets. (2024) is the. React – A JavaScript library for building user interfaces. Retrieved from https://reactjs.org

3. MDN Web Manual. (2024) is the. local storage and web storage APIs. Retrieved from https://developer.mozilla.org

4. Node.js documentation. (2024) is the. Node.js JavaScript Time Runtime. Retrieved from https://nodejs.org

5. MongoDB documentation. (2024) is the. MongoDB NoSQL database. Availablehttps://www.mongodb.com.

6. Express.js documentation. (2024) is the. Fast, thoughtless, compact web design for Node.js. Retrieved from https://expressjs.com

7. GitHub page directory. (2024) is the. Web pages using GitHub pages. Retrieved from https://pages.github.com

This all help to perform our to-do app easily and smoothly