

PlanIt - Task Scheduler

System Design | SE Project | DA-IICT

1. What is PlanIt?

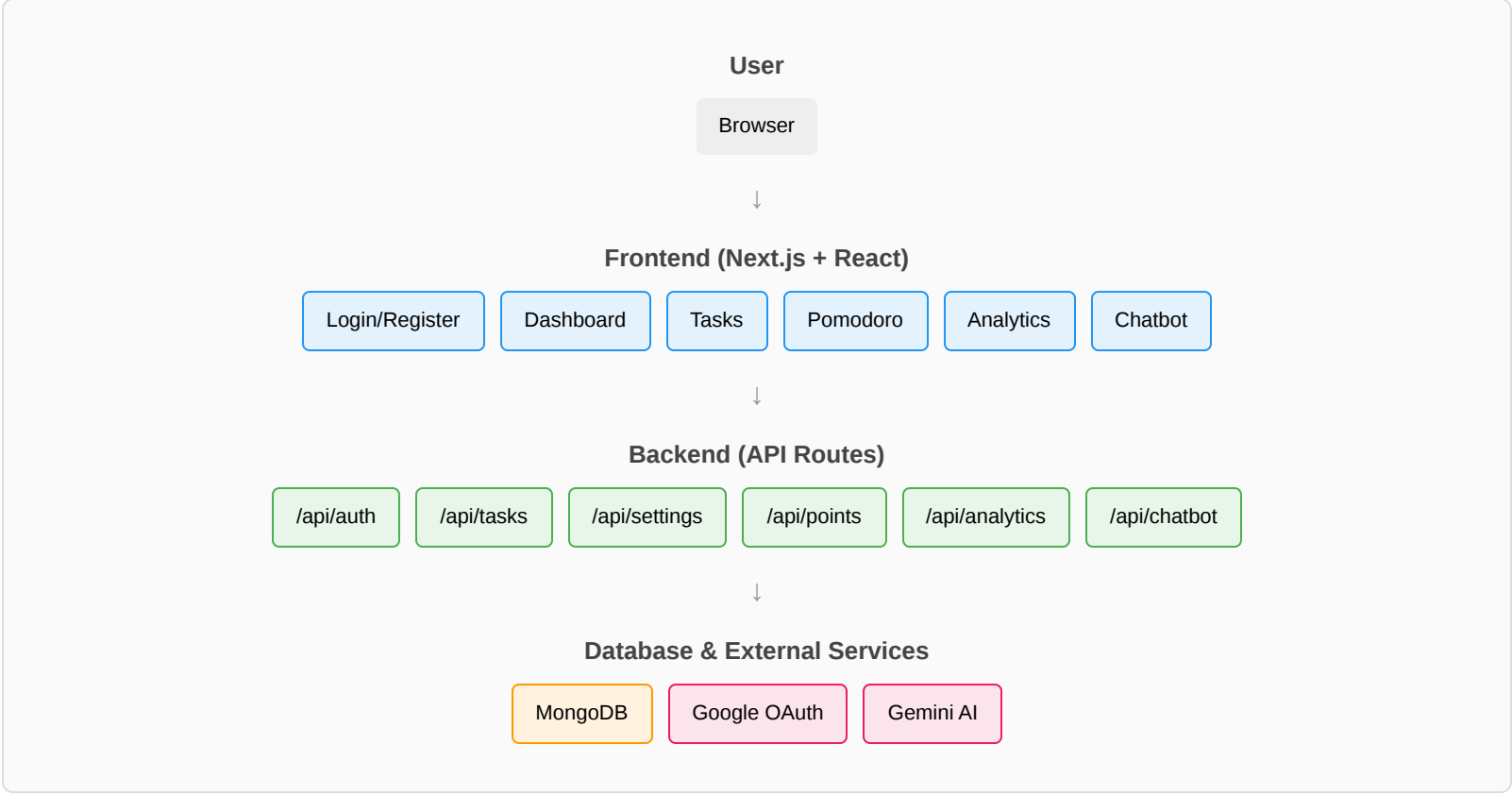
A task management web app for students and professionals. Users can create tasks, track progress, use pomodoro timer, and chat with AI assistant.

Features:

- Create, edit, delete tasks
- Login with email or Google
- Pomodoro timer
- Analytics and activity heatmap
- AI chatbot
- Points/rewards system

2. Architecture

We use 3-tier architecture:



3. Database

MongoDB collections:

Collection	Purpose	Main Fields
Users	User accounts	email, password, points, settings
Tasks	User tasks	title, priority, status, dueDate
ChatThreads	AI chat history	userId, messages, title
TaskCompletionHistory	Completed tasks log	taskId, completedAt
PointActivity	Points earned/spent	type, amount, description

4. API Endpoints

Method	Endpoint	What it does
POST	/api/auth/register	Create account
POST	/api/auth/login	Login
GET	/api/tasks	Get all tasks
POST	/api/tasks	Create task
PUT	/api/tasks/[id]	Update task
DELETE	/api/tasks/[id]	Delete task
GET	/api/settings	Get user settings
PUT	/api/settings	Update settings
GET	/api/analytics/activity	Get activity data
POST	/api/chatbot/message	Send message to AI

5. Tech Stack

Frontend <ul style="list-style-type: none">• Next.js 14• React• TailwindCSS• TypeScript	Backend <ul style="list-style-type: none">• Next.js API Routes• NextAuth.js• JWT tokens• bcrypt	Database <ul style="list-style-type: none">• MongoDB Atlas• Mongoose	External <ul style="list-style-type: none">• Google OAuth• Gemini AI API• Nodemailer
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6. Security

- Passwords hashed with bcrypt
- JWT for session management
- Protected API routes (middleware checks auth)
- Environment variables for secrets