

# Global Next Consulting India Private Limited GNCIPL

### (Leader In Consulting)

GSTIN:09AALCG8170B1ZI CIN: U62099UP2025PTC217716

# **Software Project Documentation Table for Client**

Section	Details
Draiost Titla	Matty - Online Graphic Design Tool (One Tool for Multiple
Project Title	Graphic Design)
Client Name	Confidential
Prepared By	Global Next Consulting India Pvt Ltd. (GNCIPL)
Date	16 July 2025
Project Type	MERN Full Stack Web Application
Technology Stack	MongoDB, Express.js, React.js, Node.js, Cloudinary, JWT
Frontend Tools	React.js, Redux, TailwindCSS, react-konva/fabric.js
Backend Tools	Node.js, Express.js, Mongoose
Database	MongoDB (MongoDB Atlas)
Authentication	JWT-based or OAuth (Google)
Storage	Cloudinary / AWS S3 (for images and exports)
Deployment	Vercel (Frontend), Render/Railway (Backend), MongoDB
рерюуттепт	Atlas (DB)







Section	Details	
Modules	User Auth, Canvas Editor, Save/Load Designs, Export	
	PNG/PDF, My Designs Dashboard	
Key Features	Drag-drop editor, image upload, text styling,	
	export/download, templates, undo-redo	
User Roles	Admin, Registered User	
Estimated Duration	6 Weeks (Projected Timeline)	
Project Objectives	Build a web-based design platform for creating posters,	
Project Objectives	banners, social media images	
Target Users	Designers, Marketing Teams, Social Media Managers,	
Target Users	Students	
Deliverables	Complete web application, source code, documentation,	
Deliverables	deployment instructions	
Support &	3-month bug fix & support after delivery (extendable)	
Maintenance		
Security Features	JWT Auth, CORS, Secure image handling, Input validation	
Version Control	Git (GitHub/Bitbucket)	
Testing Strategy Unit testing, Integration testing, Manual UI Testing		
Limitations (MVP)	No real-time collaboration in Phase 1, limited templates	
Future	Real-time multi-user editing, premium template store,	
Enhancements	mobile app version	
Contact Person	Ravi Kant (Technical Head) www.gncipl.com	

Creating a **Matty** using the **MERN Stack** (MongoDB, Express.js, React, Node.js) is a **massive full-stack project** involving advanced front-end graphics rendering, back-end file storage, real-time collaboration, and more.

Here's a **step-by-step blueprint** to guide you through building a Matty graphic design tool using MERN:







# Project Name: Matty (Graphic Design Web App)

### Tech Stack:

- Frontend: React.js, Redux, TailwindCSS / MUI, Konva.js or Fabric.js (canvas manipulation)
- Backend: Node.js, Express.js
- **Database**: MongoDB (user designs, templates, etc.)
- Authentication: JWT / OAuth (Google/Facebook)
- Image Storage: Cloudinary / AWS S3
- Optional Features: Socket.io (for real-time collaboration), WebRTC (screen sharing),

**RESTful APIs** 

#### Folder Structure (Overview)

/client → React frontend /server → Node.js backend

/uploads → For local uploads (optional if using cloud)

# (Phase-Wise)

Phase 1: Basic Graphic Editor (MVP)

#### Feature Description

Canvas Area Add/drag shapes, images, text

Image Upload Upload local images to canvas

Text Editor Fonts, sizes, colors, rotation

Undo/Redo Keep history of actions

Save Design Save to MongoDB with user ID

My Designs User dashboard with saved templates

User Auth Register/login with JWT

# **ℳ Tools/Libraries You'll Need**

#### Purpose Tool

Canvas engine <u>react-konva</u> or fabric.js

UI Framework TailwindCSS / MUI

Image hosting Cloudinary SDK or S3 API

State Management Redux / Context API







#### Purpose Tool

Form Handling Formik + Yup

Authentication JWT / Firebase / OAuth

Real-time (optional) Socket.io

# Database Schema (MongoDB – Mongoose)

```
{
username: String,
```

User Model

email: String,

passwordHash: String,

createdAt: Date

### Design Model

{

userld: ObjectId, title: String,

jsonData: Object, // konva/fabric object

thumbnailUrl: String,

createdAt: Date

}

# API Endpoints

#### Method Endpoint Function

POST /api/auth/register Register new user

POST /api/auth/login Login user, return JWT

GET /api/designs Fetch user's saved designs

POST /api/designs Save a new design

PUT /api/designs/:id Update existing design

DELETE /api/designs/:id Delete a design

### Advanced Features (Phase 2)

- **@** Templates Gallery







- **Export to PNG/PDF**
- Template Sharing / Public Designs
- Image Filters
- Comments on designs (collaborative editing)
- Search Designs / Tags
- Design version history

#### Project Milestones(This is a Virtual Milestone)

#### Week Goals

Week 1 Setup MERN stack, auth, project scaffolding

Week 2 Implement Matty editor using react-konva or fabric.js

Week 3 Design saving/loading to MongoDB

Week 4 Image upload + export to PNG/PDF

Week 5 Real-time collab + team designs

Week 6 Final polish, testing, deployment (Render/Netlify + Mongo Atlas)

#### Deployment

Frontend: Vercel / Netlify

Backend: Render / Railway / Cyclic

DB: MongoDB Atlas

Image Hosting: Cloudinary

### Advance Feature

- Design history/auto-save
- Role-based access (Admin, User)
- Payments for premium templates
- Mobile view optimization

# Suggested File Structure (Project Repo / Drive)

project-name/

– 🗀 01\_Project\_Charter/

└─ Project\_Charter.pdf







```
— 1 02_Requirements/
  --- SRS Document.pdf
  ├— Use Cases.md
  └─ User Stories.xlsx
  – 🗀 03_Design/
  — UI_UX_Design/
     — Wireframes/
    └─ Mockups/
  — Architecture_Diagram.png
 L— Database_Schema.pdf
├— □ 04_Technical_Specs/
 ├— TSD_Technical_Specification_Document.pdf
  — API Documentation/
  swagger.yaml / Postman Collection.json
 L DB_Schema_Details/
├— 🗀 05_Source_Code/
               # React frontend
  ├— client/
                # Node/Express backend
  ⊢— server/
  --- .env.example
  README.md
 └─ package.json
  — — 06_Testing/
  ├— Test_Plan.pdf
  — Test Cases.xlsx
  └─ Bug Reports/
  — 🗀 07_Deployment/
  — Deployment_Guide.md
  — Dockerfiles/
   — CI_CD_Workflows/
           MINISTRY OF
           C CORPORATE
```

**A** AFFAIRS





```
├── ☐ 08_Training_and_User_Guide/
    ├── User_Manual.pdf
    └── Training_PPT/
    ├── ☐ 09_Maintenance_and_Support/
    ├── Support_Guide.pdf
    └── SLA_Agreement.pdf
    ├── ☐ 10_Security/
    ├── Security_Compliance_Report.pdf
    └── PenTest_Summary.pdf
    ├── ☐ 11_Change_Logs/
    └── changelog.md
    └── ☐ 12_Contracts_and_Client_Docs/
    ├── NDA_Agreement.pdf
    └── Client_Communication_Log.xlsx
```











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www.gncipl.com

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# Week Five, Full Stack MERN project

These cover productivity, education, finance, health, utility, and more.

### **Live Full Stack MERN Projects**

#	Project Title	Domain	Description
1	Task Manager App	Productivity	Add/edit/delete tasks, mark complete, due dates
2	Notes Keeper	Personal Utility	Create and manage personal notes with tags
3	Expense Tracker	Finance	Record, categorize, and visualize expenses
4	Personal Portfolio Builder	Professional	Build a dynamic personal resume/portfolio site
ו רוו	E-Commerce Product Catalog	Commerce	Product listing, details, cart, checkout UI
6	Online Book Library	Education	Add, borrow, and review books
7	Event Scheduler	Events	Create and RSVP for events
8	Job Tracker	Career	Track job applications, company details, statuses
9	Blog Platform	Content Creation	Post, edit, comment on blogs
10	Weather Dashboard	Utility	Weather forecast + custom location notes







#	Project Title	Domain	Description
11	Quiz System	Education	Add quizzes, take tests, get scores
12	Interview Prep Tracker	Career	Track topics, schedule mock interviews
13	Fitness Journal	Health	Log workouts, calories, goals
14	Diet Planner	Health/Nutrition	Meal plans, recipes, track intake
15	Book Tracker	Learning	Save read/wishlist books, ratings
16	Digital CV Generator	Career	Add sections and export resume in PDF
17	Discussion Forum	Community	Post topics, reply, upvote
18	Live Poll App	Survey/Feedback	Create polls, vote, see results
19	CRM for Freelancers	CRM	Manage leads, clients, invoices
20	Student Assignment Portal	Education	Submit, track, and grade assignments
21	Movie Watchlist	Entertainment	Add movies, set watched/unwatched
22	Time Tracker	Productivity	Start/stop timers, log tasks
23	Inventory Management	Retail/Logistics	Add/remove/update product inventory
24	Grocery List Manager	Household	Add grocery items, mark as bought
25	Travel Bucket List	Lifestyle	Save places, notes, travel status
26	Mind Map Builder	Productivity	Create visual mind maps for notes
	Password Vault (with encryption)	Security	Save credentials securely (local encryption)
28	Habit Tracker	Personal Growth	Add habits, daily progress chart
29	Chat App (Socket.io)	Communication	Real-time messaging (basic version)
30	Customer Feedback System	Business	Collect and view product feedback
31	Issue/Bug Tracker	Development	Log issues, assign priorities and statuses
32	Digital Wallet Tracker	Finance	Add income/expense records, balance graph
33	Certificate Generator	Education	Auto-generate course certificates
34	Travel Planner	Lifestyle	Create trips, checklist, budget tracking
35	Flashcard Study App	Education	Create and flip flashcards, self-testing
36	Goal Tracker	Personal Growth	Set and monitor goals (daily/weekly/monthly)
	Freelancer Dashboard	Career	Manage projects, deadlines, payments
38	School Attendance Manager	Education	Mark and view attendance records
39	Alumni Connect Portal	Social Network	Chat, search alumni, post updates
40	Mentorship Platform	Learning/Career	Book mentorships, leave feedback
41	Skill Tracker	Self- Improvement	Add learned skills, skill trees, ratings
42	Donation Tracker	NGO/Charity	Log donations, donor list, generate reports







#	Project Title	Domain	Description
43	Pet Care Log	Lifestyle	Track vet visits, vaccinations, food logs
44	Complaint Management System	Admin Utility	File, track, and resolve complaints
	Startup Idea Incubator	Innovation	Submit ideas, get votes and comments
46	Resume Builder with Templates	Career	Choose template, fill form, export resume
47	Hostel Room Booking	Travel/Utility	Book rooms, manage schedules, reviews
48	Class Timetable Planner	Academic Utility	Add periods, teacher allocation
49	Virtual Classroom	Education	Join/host sessions, notes, chat
50	Voting App for Clubs/Events	Events	Members vote for activities, track results

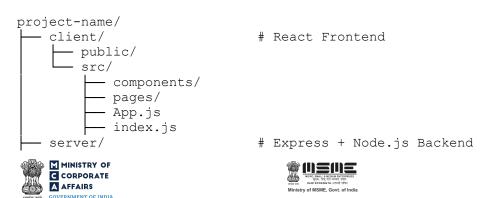
Full Playbook for MERN Stack Full Stack Integration Projects listed above. This will guide you through structure, tools, features, database schema, APIs, and deployment. Use this as a reference model to start building any of the projects from scratch to live deployment.

# **MERN Stack Project Playbook**

# **✓** 1. Tech Stack

Layer	Tools/Libraries
Frontend	React.js, Axios, React Router, Tailwind CSS / Bootstrap
Backend	Node.js, Express.js
Database	MongoDB (with Mongoose ODM)
Environment	dotenv for secrets, CORS for API communication
Deployment	Vercel (frontend), Render / Railway (backend + MongoDB)

# 2. Folder Structure





```
controllers/
models/
routes/
config/db.js
server.js
.env
package.json # Use concurrently for both frontend/backend
```

### 3. Common Features (Use Case Specific)

Feature	<b>Implementation Tool</b>
Authentication	JWT (json web tokens)
CRUD Operations	RESTful APIs
API Communication	Axios
Form Validation	React Hook Form/Yup
State Management	useState / useReducer
Search / Filter	Custom filter functions
Role Management	Middleware in Express

# 4. Sample MongoDB Schema Examples

#### a. Notes App:

```
const noteSchema = new mongoose.Schema({
  title: String,
  content: String,
  userId: mongoose.Schema.Types.ObjectId,
  tags: [String],
  createdAt: { type: Date, default: Date.now }
});
```

#### b. Task Manager:

```
const taskSchema = new mongoose.Schema({
  title: String,
  description: String,
  status: { type: String, enum: ['pending', 'done'] },
  dueDate: Date,
  userId: mongoose.Schema.Types.ObjectId,
});
```

# **№ 5. REST API Sample Routes**

Method	Endpoint	Description
GET	/api/tasks/	Get all tasks for user
POST	/api/tasks/	Create new task







Method	Endpoint	Description
PUT	/api/tasks/:id	Update a task
DELETE	/api/tasks/:id	Delete a task
POST	/api/auth/register	Register new user
POST	/api/auth/login	Login and return token

# **6.** Authentication (JWT Setup)

- Register/Login
- Store JWT in localStorage
- Attach token to every Axios request in frontend

// In Axios Setup axios.defaults.headers.common['Authorization'] = `Bearer \${token}`;

# **≠** 7. Development & Testing Tools

Tool	Purpose
Postman	API Testing
MongoDB Atlas	Cloud DB
Nodemon	Auto-restart backend
Concurrently	Run React + Express together

# 8. Deployment Plan

Part	Tool	Steps
Frontend	Vercel / Netlify	Push frontend client/ folder
Backend	Renger / Railway	Push backend server/, connect to MongoDB
MongoDB	Atlas	Create DB cluster, copy URI to .env
IICCORS I	Enable from Vercel domain to backend API	

# # 9. Sample .env File

PORT=5000

MONGO URI=mongodb+srv://<username>:<password>@cluster.mongodb.net/project JWT SECRET=mysecretkey







# X 10. CI/CD & Version Control

- GitHub for codebase
- GitHub Actions (optional)
- Vercel & Render auto-deploy from GitHub commits

# 11. Project Report Format (Deliverable)

Section	Content Example
Title & Objective	Expense Tracker using MERN Stack
Tech Stack Used	React, Express, Node, MongoDB
Problem Statement	Manual expense tracking is tedious
Features	Add/Delete/Edit, Summary, Graphs
Screenshots	Home, Dashboard, Add Expense
Deployment Link	https://expense-app.vercel.app
GitHub Repo	https://github.com/user/project







