**📘 RentRadar Project Blueprint (MERN Stack)**

## 🧠 Project Goal:

Build a trustworthy housing rental web platform for Kenya, helping tenants find verified, affordable houses while protecting them from scams and fake landlords.

## 🏗️ Stack

* **Frontend**: React + Tailwind CSS
* **Backend**: Node.js + Express.js
* **Database**: MongoDB (Mongoose ODM)
* **Authentication**: JWT (JSON Web Tokens)
* **Image Uploads**: Multer or Cloudinary
* **Location Mapping**: Google Maps API or Leaflet.js + OpenStreetMap
* **Notifications**: Email via Nodemailer, Push via WebSockets or FCM

## 🗂️ Project Structure (VS Code Layout – Deep Dive)

rentradar/  
├── client/ # React Frontend Root  
│ ├── public/ # Static files for deployment  
│ │ └── index.html # Main HTML shell (title, meta)  
│  
│ └── src/ # App source code  
│ ├── assets/ # Logos, background images, icons  
│ │ └── bg/ # Apartment/Nairobi skyline images  
│  
│ ├── components/ # Reusable UI parts  
│ │ ├── common/ # Buttons, InputFields, Modals, Loaders  
│ │ ├── listings/ # ListingCard, ListingGallery, FilterSidebar  
│ │ ├── dashboard/ # Navbar, Sidebar, StatCards  
│ │ └── messages/ # ChatBubble, MessageInput, ChatList  
│  
│ ├── pages/ # Core screens by role  
│ │ ├── auth/ # Login/Register/ProfileSetup  
│ │ │ └── AuthPage.jsx # Beautiful centered card with background image + inspirational text  
│ │ ├── landlord/ # Listings, stats, add-house, reports  
│ │ ├── tenant/ # Browse, saved listings, contact history  
│ │ └── admin/ # Flagged items, analytics, control panel  
│  
│ ├── context/ # React global state  
│ │ ├── AuthContext.jsx # Auth token, role, login/logout  
│ │ └── LayoutContext.jsx # Controls responsive sidebar toggle  
│  
│ ├── services/ # Axios calls to API  
│ │ ├── authService.js  
│ │ ├── listingService.js  
│ │ ├── messageService.js  
│ │ ├── reportService.js  
│ │ └── savedSearchService.js  
│  
│ ├── hooks/ # Reusable logic  
│ │ ├── useAuth.js  
│ │ ├── useLandlordStats.js  
│ │ └── useMapLocation.js  
│  
│ ├── routes/ # React Router setup  
│ │ └── ProtectedRoute.jsx  
│  
│ ├── utils/ # Helpers  
│ │ ├── formatDate.js  
│ │ └── getInitials.js  
│  
│ └── App.jsx  
│  
├── server/  
│ ├── config/ # DB and Email config  
│ │ ├── db.js  
│ │ └── mail.js  
│  
│ ├── controllers/ # API logic  
│ │ ├── authController.js  
│ │ ├── listingController.js  
│ │ ├── messageController.js  
│ │ ├── reviewController.js  
│ │ ├── reportController.js  
│ │ ├── adminController.js  
│ │ └── savedSearchController.js  
│  
│ ├── models/ # Mongoose schemas  
│ │ ├── User.js  
│ │ ├── Listing.js  
│ │ ├── Message.js  
│ │ ├── Review.js  
│ │ ├── Report.js  
│ │ ├── Notification.js  
│ │ └── SavedSearch.js  
│  
│ ├── routes/ # API Endpoints  
│ │ ├── authRoutes.js  
│ │ ├── listingRoutes.js  
│ │ ├── messageRoutes.js  
│ │ ├── reviewRoutes.js  
│ │ ├── reportRoutes.js  
│ │ ├── adminRoutes.js  
│ │ └── savedSearchRoutes.js  
│  
│ ├── middleware/  
│ │ ├── authMiddleware.js  
│ │ └── roleCheck.js  
│  
│ ├── utils/  
│ │ ├── sendEmail.js  
│ │ └── geolocation.js  
│  
│ └── server.js  
│  
├── .env  
├── package.json  
└── README.md

## 📥 Auth Forms – Words to Include

**Login & Registration Page:**

* “Find verified homes with peace of mind.”
* “Join a growing community of trusted landlords and safe-seeking tenants.”
* “Stop guessing. Start renting smarter.”
* “Kenya’s smartest house finder platform.”
* CTA Button Texts: Create account, Get Started, Login & Browse, List My House
* Quotes for right panel (AuthPage):
  + “Trust isn’t given. It’s built. Rent smart.”
  + “Because your home journey matters.”
  + “A platform by people who care.”

These appear in the centered card (AuthCard.jsx) and background panel of AuthPage.jsx.

## 📍 Optional & Smart Features (Included Now)

* ✅ Google Maps integration: show exact location & distance from user
* ✅ Admin analytics (most viewed listings, flagged landlords)
* ✅ Notification system:
  + Email via Nodemailer for alerts (e.g., new message, report updates)
  + Push/WebSocket (optional Phase 3+)
* ✅ Auto-ban landlords with 3+ deleted listings
* ✅ Auto-hide listing with 5+ reports
* ✅ Admin-set listing limits
* ✅ **Saved Search Alerts**: Notify tenant via email when new houses match saved filters
* ✅ **Report Summary Charts**: Pie/bar charts on admin dashboard for report breakdowns
* ✅ **Responsive Sidebar**: Collapse sidebar on mobile with hamburger toggle
* ✅ **Image Lightbox Viewer**: Click-to-expand image gallery view in listings
* ✅ **Sticky Filter Bar**: Keep filter bar stuck to top when scrolling listings

### 📁 Where to Add Them:

| Feature | File/Folder Location |
| --- | --- |
| Saved Search Alerts | pages/tenant/SavedSearches.jsx, services/savedSearchService.js, controllers/savedSearchController.js |
| Report Summary Charts | pages/admin/ReportAnalytics.jsx, services/reportService.js, controllers/reportController.js |
| Responsive Sidebar | components/dashboard/Sidebar.jsx, context/LayoutContext.jsx |
| Image Lightbox Viewer | components/listings/ListingGallery.jsx, pages/tenant/ListingDetail.jsx |
| Sticky Filter Bar | pages/tenant/ListingBrowse.jsx, components/listings/FilterSidebar.jsx |

## 💡 Optional Styling & UX Enhancements

* **Dark Mode Toggle** with Tailwind’s dark variants
* **Mobile-First Features**:
  + Bottom nav bar for mobile
  + Tap-to-call buttons
* **Skeleton Loaders** for listings and chats during API delay
* **Empty States**: “No messages yet – start a chat!” etc.
* **Profile Completion Bar** with progress (% completed)
* **Smart Filters with Map Sync** (auto zoom map as filters apply)
* **Search Autocomplete** (suggest cities/estates while typing)
* **Client-side Image Compression** for faster uploads on mobile
* **Verification Badges** for trusted landlords (✓ blue badge)
* **Quick User Impersonation for Admin**: “View as…”
* **Listing Draft Save** for incomplete listings

## 🧠 Dev Tips

[…UNCHANGED…]

## 🚀 Project Name

**RentRadar – Kenya’s Smartest House Finder**