

MERN Blogging Application:

1. Environment Setup:

- MongoDB: Set up a local or cloud-based MongoDB instance.
 - Node & Express: Initialize a new Node project, and set up an Express server.
 - React: Initialize a new React app using Create React App or another preferred method.
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2. Backend Development (Node, Express, MongoDB):

- **Database Models:**
 - User: With fields such as `username`, `email`, `hashedPassword`, `role`, and `createdBlogs`.
 - Blog: With fields such as `title`, `content`, `author`, `comments`, and `status`.
 - Comment: With fields like `text`, `author`, and `blogID`.
 - **API Routes:**
 - User: Signup, Login, Logout, and GetProfile.
 - Blog: Create, Update, Delete, Get (all and by ID).
 - Comment: Create, Update, and Delete.
 - **Authentication & Authorization:**
 - Implement JWT for authentication.
 - Middleware for role-based access controls.
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3. Frontend Development (React):

- **Core Components:**
 - Navbar: With links based on user's authentication and role.
 - Home: Displaying a list of blogs.
 - BlogView: For reading a full blog and its comments.
- **User Pages:**
 - Signup & Login.
 - Profile Page: Displaying user information and blogs authored.
- **Admin Features:**
 - User Management: View all users, upgrade/downgrade roles, delete users.
 - Blog Management: View all blogs, edit, or delete any blog.
- **Author Features:**
 - Blog Creation: A page or modal to create new blogs.
 - Blog Management: Edit or delete their own blogs.

- **Moderator Features:**

- Comment Moderation: Approve, edit, or delete any comment.
- Blog Moderation: Approve or reject blogs before they're publicly visible.

- **Common User Features:**

- Comment: Add comments to blogs.
- Blog Viewing: View and search for all approved blogs.

- **State Management:**

- Use Context API, Redux, or another state management tool to handle user authentication, blog data, etc.

- **Routing:**

- Implement client-side routing with protected routes based on user roles and authentication.
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4. Testing & Deployment:

- **Backend:**

- Write unit tests for API routes using a tool like Mocha, Chai, or Jest.
- Deploy backend to a platform like Heroku, AWS, or any preferred hosting.

- **Frontend:**

- Write unit tests for critical components.
 - Deploy frontend to a platform like Vercel, Netlify, or any preferred hosting.
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5. Additional Enhancements:

- Responsive design.
- Implement blog categories or tags.
- Add a rich text editor for blog creation.
- Implement blog analytics (views, likes, etc.).