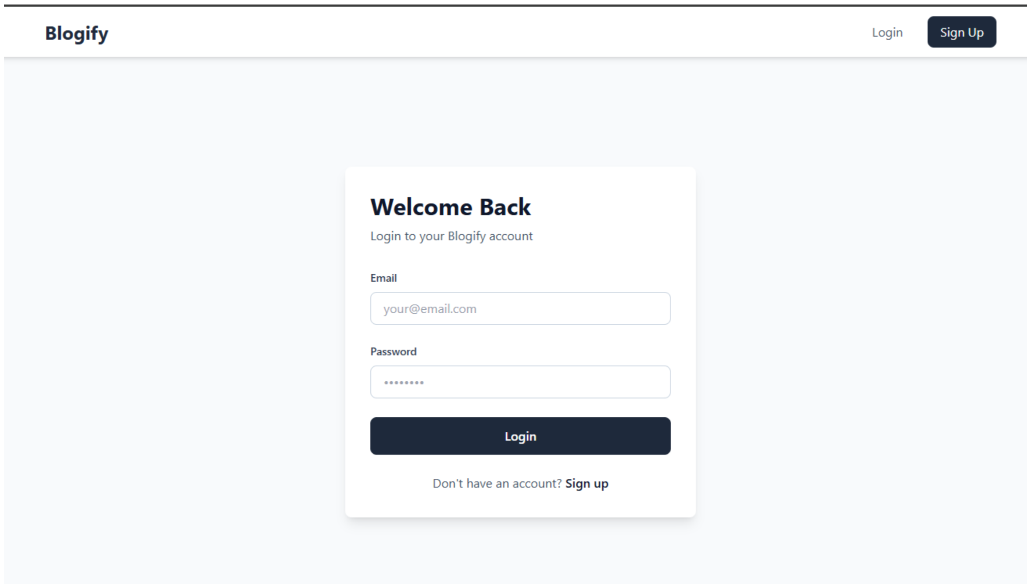
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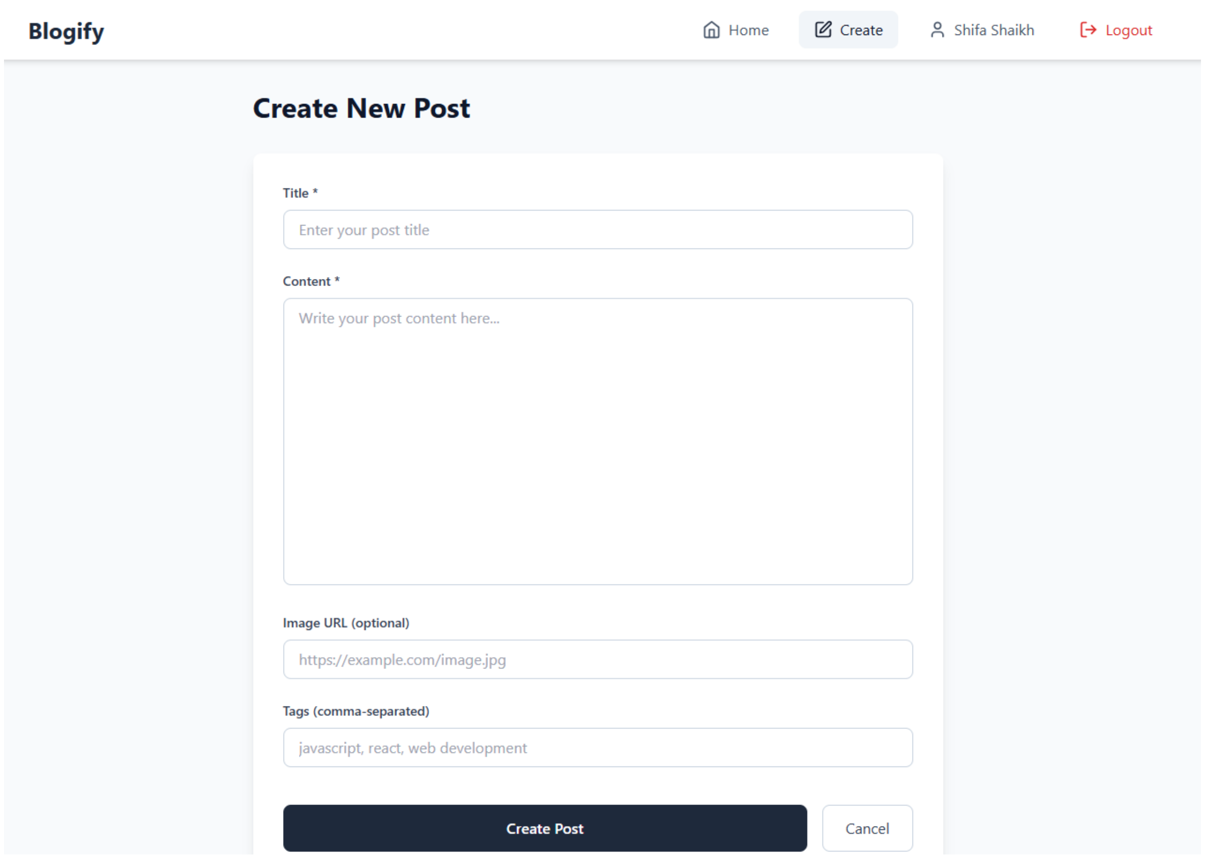
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Create New Post

Title *

Enter your post title

Content *

Write your post content here...

Image URL (optional)

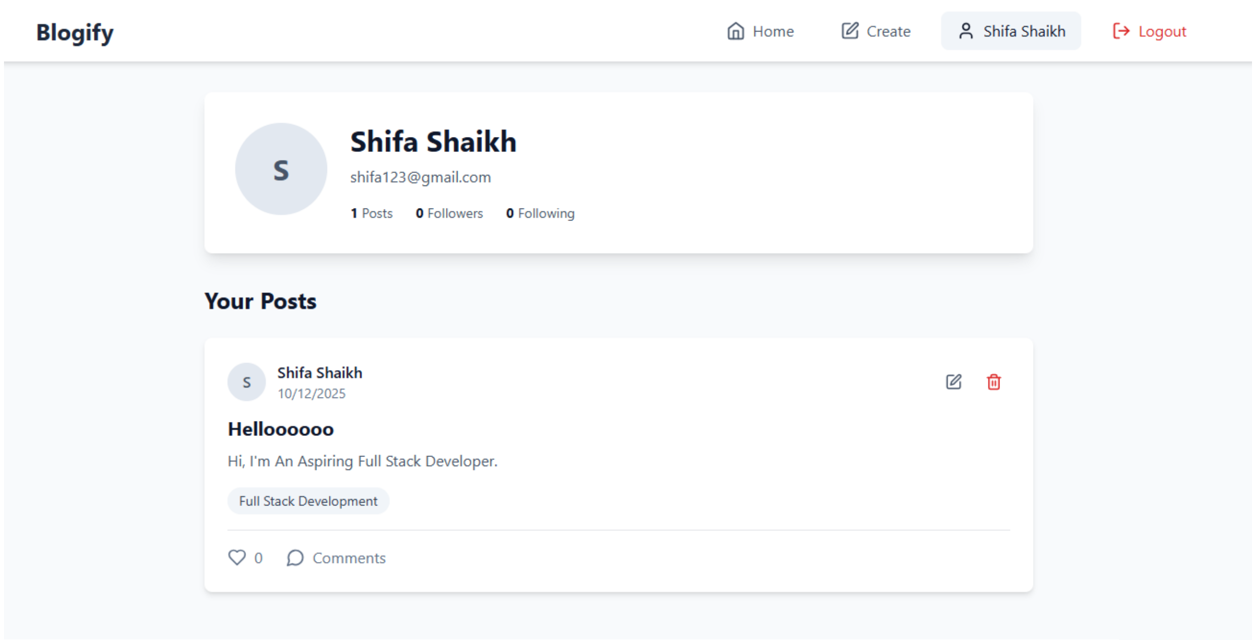
https://example.com/image.jpg

Tags (comma-separated)

javascript, react, web development

Create Post

Cancel



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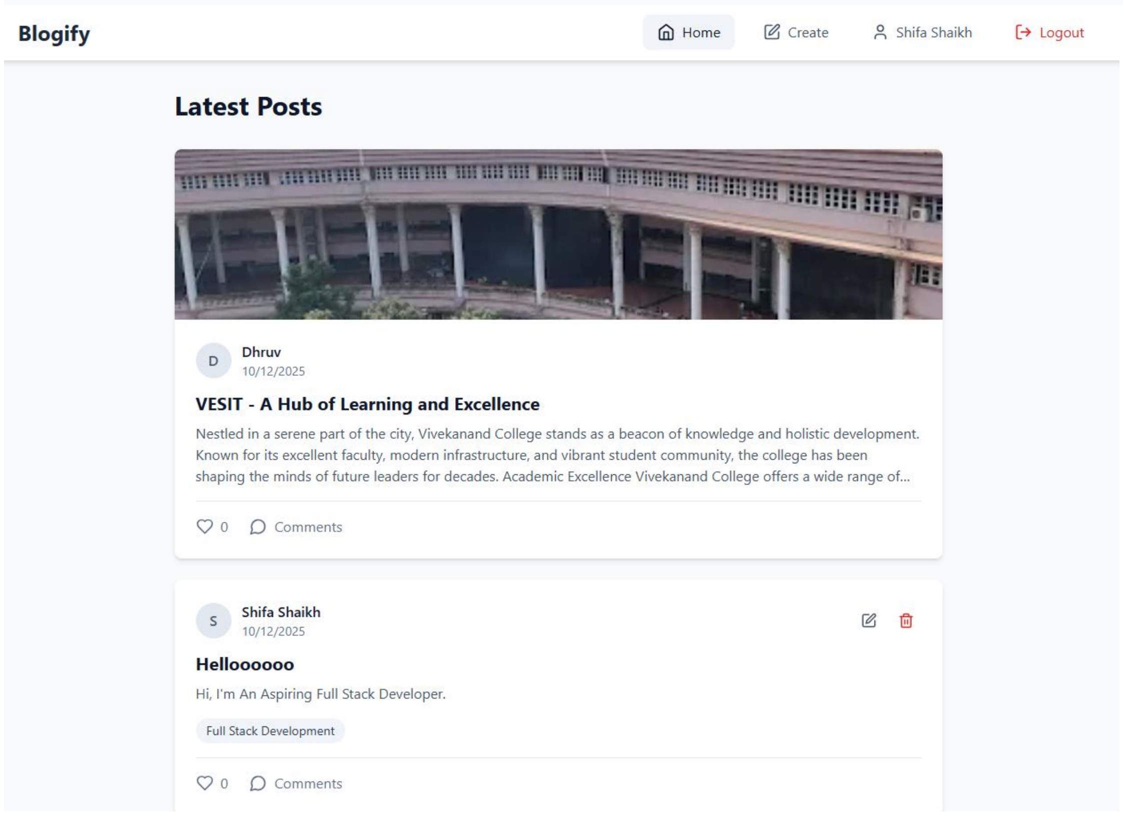

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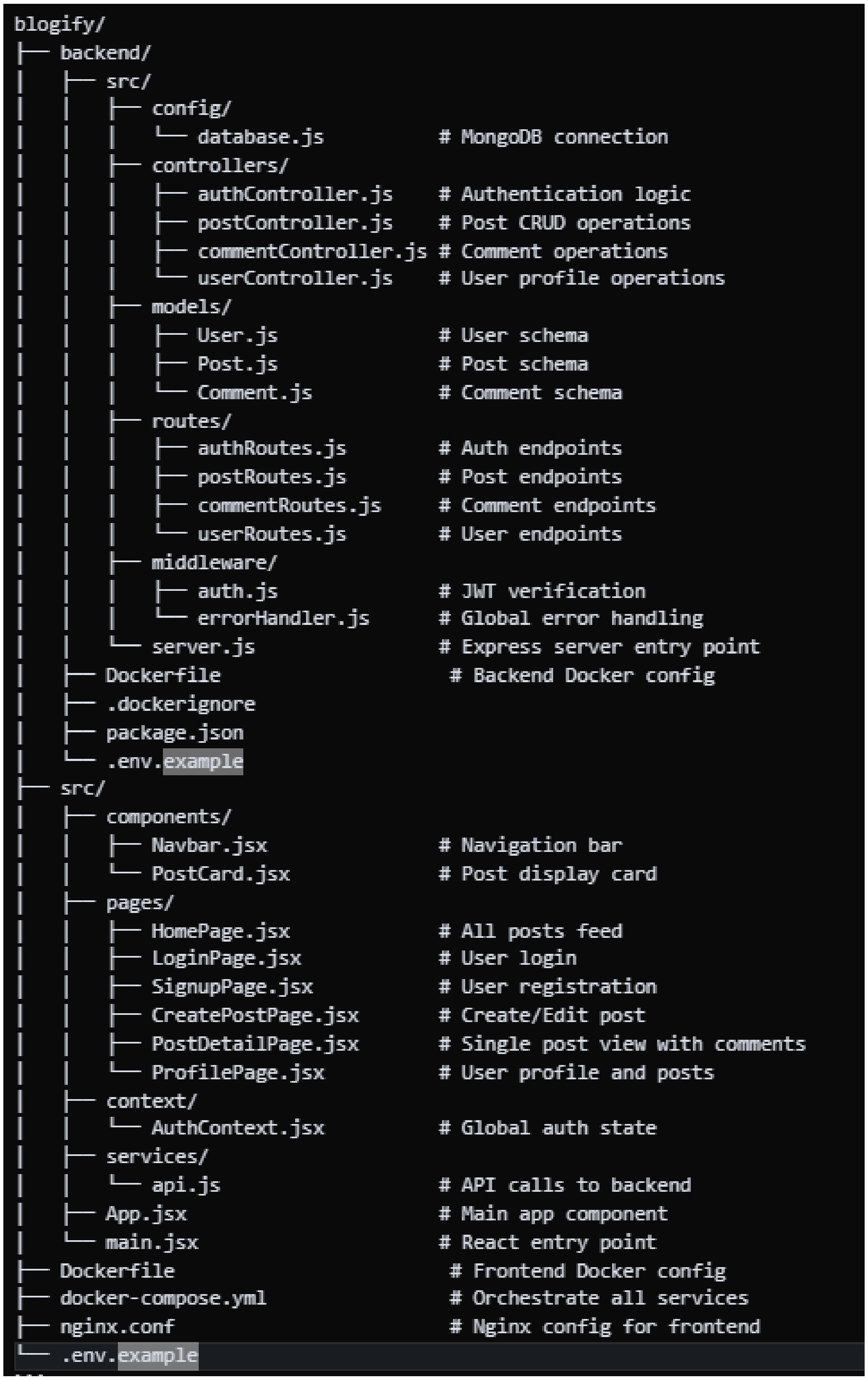


```
blogify/
├── backend/
│   ├── src/
│   │   ├── config/
│   │   │   └── database.js          # MongoDB connection
│   │   ├── controllers/
│   │   │   ├── authController.js    # Authentication logic
│   │   │   ├── postController.js    # Post CRUD operations
│   │   │   ├── commentController.js # Comment operations
│   │   │   └── userController.js    # User profile operations
│   │   ├── models/
│   │   │   ├── User.js              # User schema
│   │   │   ├── Post.js              # Post schema
│   │   │   └── Comment.js           # Comment schema
│   │   ├── routes/
│   │   │   ├── authRoutes.js        # Auth endpoints
│   │   │   ├── postRoutes.js        # Post endpoints
│   │   │   ├── commentRoutes.js     # Comment endpoints
│   │   │   └── userRoutes.js        # User endpoints
│   │   ├── middleware/
│   │   │   ├── auth.js              # JWT verification
│   │   │   └── errorHandler.js      # Global error handling
│   │   └── server.js                # Express server entry point
│   ├── Dockerfile                    # Backend Docker config
│   ├── .dockerignore
│   ├── package.json
│   └── .env.example
├── src/
│   ├── components/
│   │   ├── Navbar.jsx               # Navigation bar
│   │   └── PostCard.jsx             # Post display card
│   ├── pages/
│   │   ├── HomePage.jsx             # All posts feed
│   │   ├── LoginPage.jsx            # User login
│   │   ├── SignupPage.jsx           # User registration
│   │   ├── CreatePostPage.jsx       # Create/Edit post
│   │   ├── PostDetailPage.jsx       # Single post view with comments
│   │   └── ProfilePage.jsx          # User profile and posts
│   ├── context/
│   │   └── AuthContext.jsx          # Global auth state
│   ├── services/
│   │   └── api.js                   # API calls to backend
│   ├── App.jsx                      # Main app component
│   └── main.jsx                     # React entry point
├── Dockerfile                        # Frontend Docker config
├── docker-compose.yml                # Orchestrate all services
├── nginx.conf                        # Nginx config for frontend
└── .env.example
```

```
```

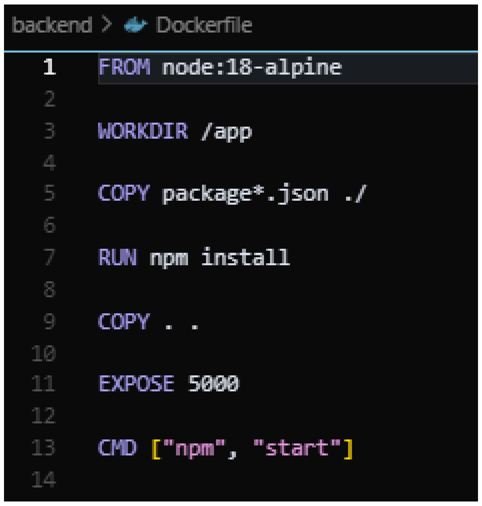
Step 1: Backend Dockerfile

Location: `backend/Dockerfile`

Code:

```
FROM node:18
WORKDIR /app
COPY package*.json ./
RUN npm install
COPY . .
EXPOSE 5000
CMD ["npm", "run", "dev"]
```

Explanation: - Base image, working directory, install dependencies, expose port, start server.



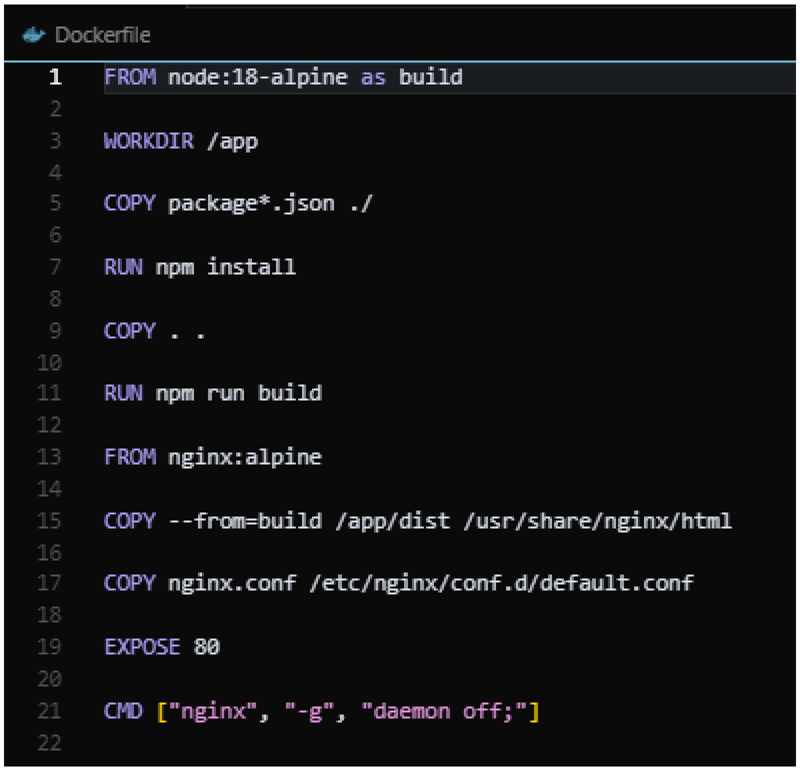
```
FROM node:18-alpine

WORKDIR /app

COPY package*.json ./

RUN npm install

COPY . .

EXPOSE 5000

CMD ["npm", "start"]

```

Step 2: Frontend Dockerfile

Location: `frontend/Dockerfile`

Code:

```
FROM node:18
WORKDIR /app
COPY package*.json ./
RUN npm install
COPY . .
EXPOSE 5173
CMD ["npm", "run", "dev"]
```



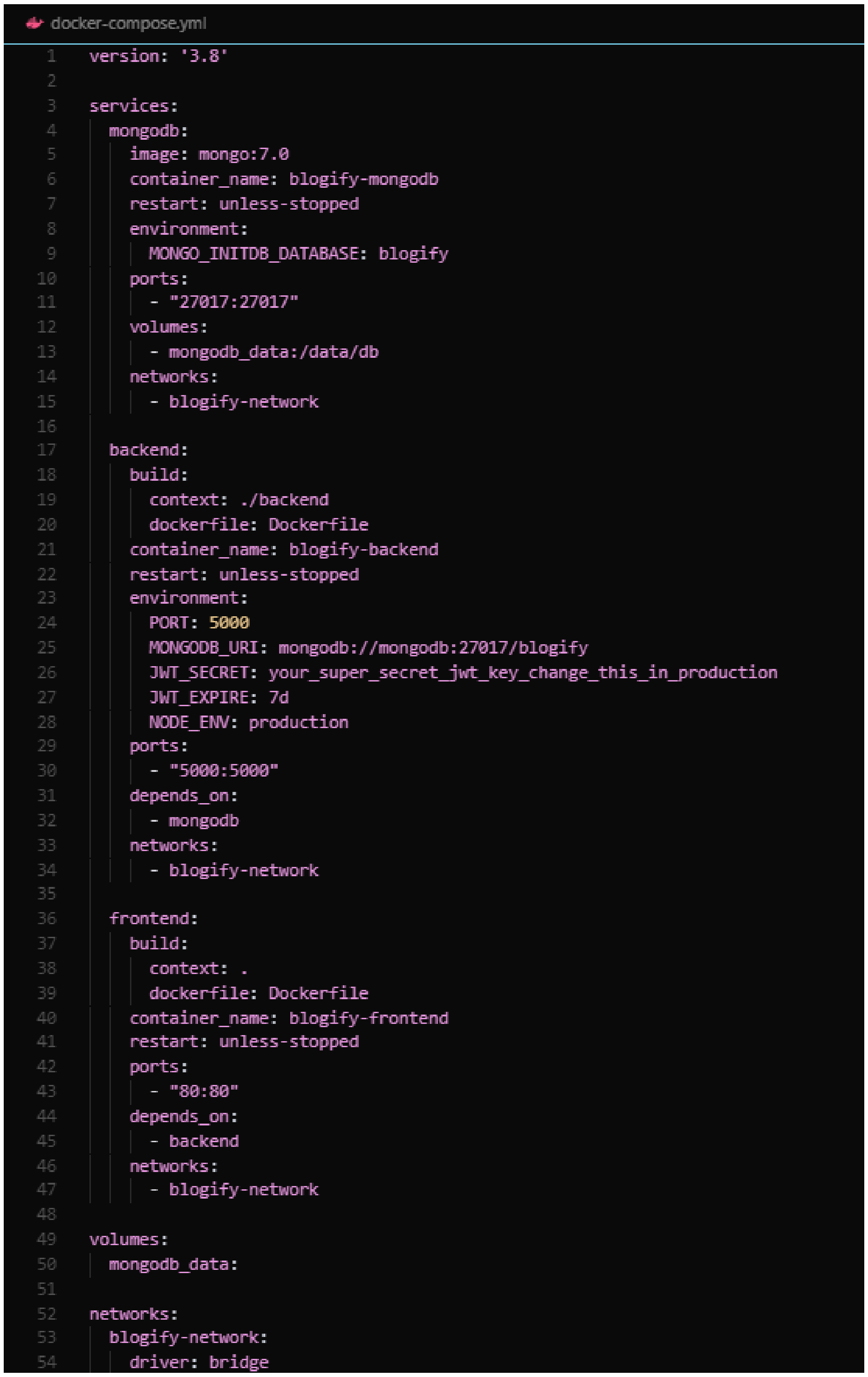
```
FROM node:18-alpine as build

WORKDIR /app

COPY package*.json ./

RUN npm install

COPY . .

RUN npm run build

FROM nginx:alpine

COPY --from=build /app/dist /usr/share/nginx/html

COPY nginx.conf /etc/nginx/conf.d/default.conf

EXPOSE 80

CMD ["nginx", "-g", "daemon off;"]
```

Step 3: Docker Compose

Location: `docker-compose.yml`

Code:

```
version: '3.8'

services:
 mongodb:
  image: mongo:7.0
  container_name: blogify-mongodb
  restart: unless-stopped
  environment:
   MONGO_INITDB_DATABASE: blogify
  ports:
   - "27017:27017"
  volumes:
   - mongodb_data:/data/db
  networks:
    - blogify-network

  backend:
    build:
      context: ./backend
      dockerfile: Dockerfile
    container_name: blogify-backend
    restart: unless-stopped
    environment:
      PORT: 5000
      MONGODB_URI: mongodb://mongodb:27017/blogify
      JWT_SECRET: your_super_secret_jwt_key_change_this_in_production
      JWT_EXPIRE: 7d
      NODE_ENV: production
    ports:
      - "5000:5000"
    depends_on:
      - mongodb
    networks:
      - blogify-network

  frontend:
    build:
      context: .
      dockerfile: Dockerfile
    container_name: blogify-frontend
    restart: unless-stopped
    ports:
      - "80:80"
    depends_on:
      - backend
    networks:
      - blogify-network

volumes:
  mongodb_data:

networks:
  blogify-network:
    driver: bridge
```



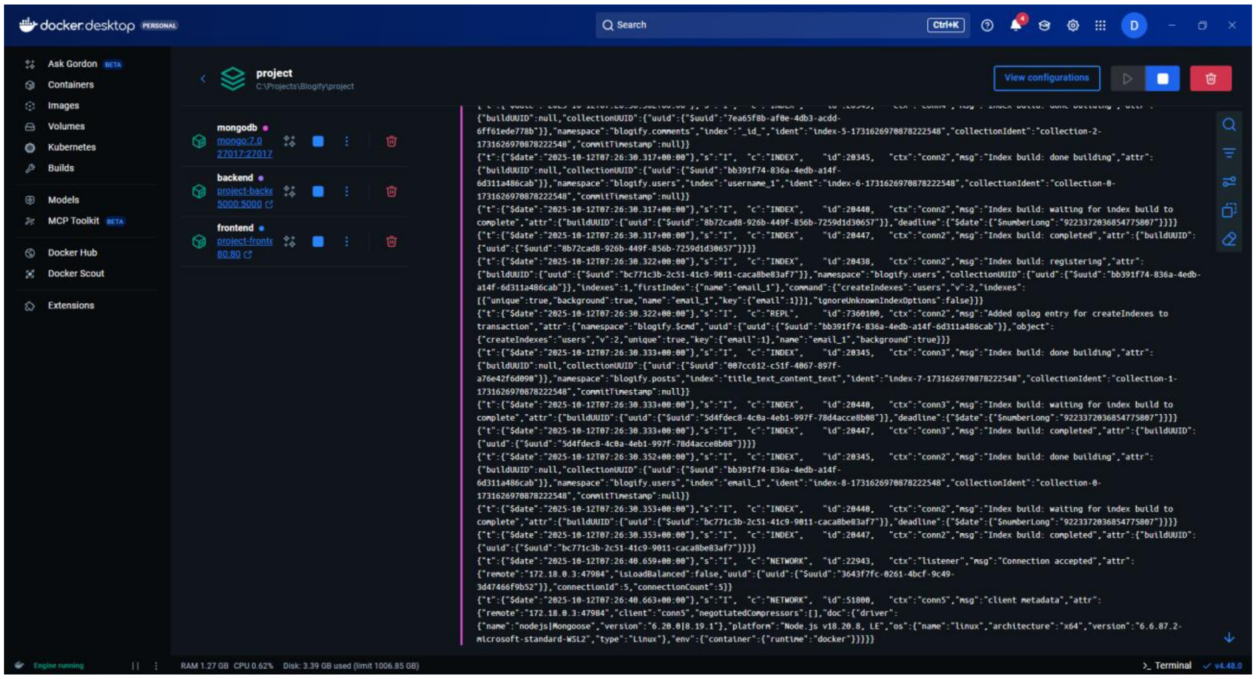
docker-compose.yml

```yaml
version: '3.8'

services:
  mongodb:
    image: mongo:7.0
    container_name: blogify-mongodb
    restart: unless-stopped
    environment:
      MONGO_INITDB_DATABASE: blogify
    ports:
      - "27017:27017"
    volumes:
      - mongodb_data:/data/db
    networks:
      - blogify-network

  backend:
    build:
      context: ./backend
      dockerfile: Dockerfile
    container_name: blogify-backend
    restart: unless-stopped
    environment:
      PORT: 5000
      MONGODB_URI: mongodb://mongodb:27017/blogify
      JWT_SECRET: your_super_secret_jwt_key_change_this_in_production
      JWT_EXPIRE: 7d
      NODE_ENV: production
    ports:
      - "5000:5000"
    depends_on:
      - mongodb
    networks:
      - blogify-network

  frontend:
    build:
      context: .
      dockerfile: Dockerfile
    container_name: blogify-frontend
    restart: unless-stopped
    ports:
      - "80:80"
    depends_on:
      - backend
    networks:
      - blogify-network

volumes:
  mongodb_data:

networks:
  blogify-network:
    driver: bridge
```

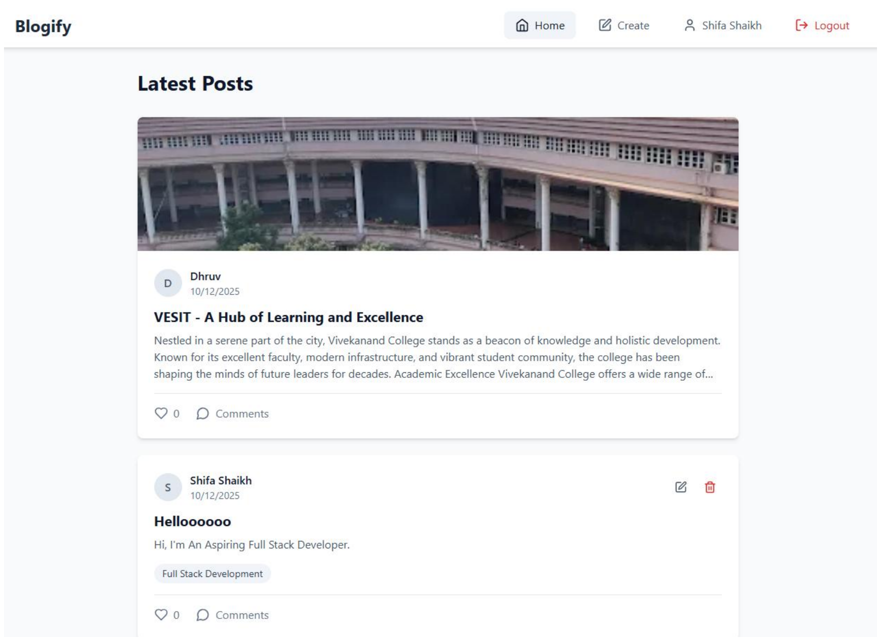
Step 4: Build and Run Containers

Commands:

```
docker-compose up --build
# OR to run in background
docker-compose up -d
# Check running containers
docker ps
```



```
{"buildUUID":null,"collectionUUID":{"uuid":{"$uuid":"7ea65f8b-af0e-4db3-acdd-
6ff61ede778b"}},"namespace":"blogify.comments","index":"_id_","ident":"index-5-1731626970878222548","collectionIdent":"collection-2-
1731626970878222548","commitTimestamp":null}}
{"t":{"$date":"2025-10-12T07:26:30.317+00:00"},"s":"I",  "c":"INDEX",    "id":20345,   "ctx":"conn2","msg":"Index build: done building","attr":
{"buildUUID":null,"collectionUUID":{"uuid":{"$uuid":"bb391f74-836a-4edb-a14f-
6d311a486cab"}},"namespace":"blogify.users","index":"username_1","ident":"index-6-1731626970878222548","collectionIdent":"collection-0-
1731626970878222548","commitTimestamp":null}}
{"t":{"$date":"2025-10-12T07:26:30.317+00:00"},"s":"I",  "c":"INDEX",    "id":20440,   "ctx":"conn2","msg":"Index build: waiting for index build to
complete","attr":{"buildUUID":{"uuid":{"$uuid":"8b72cad8-926b-449f-856b-7259d1d30657"}},"deadline":{"$date":{"$numberLong":"9223372036854775807"}}}}
{"t":{"$date":"2025-10-12T07:26:30.317+00:00"},"s":"I",  "c":"INDEX",    "id":20447,   "ctx":"conn2","msg":"Index build: completed","attr":{"buildUUID":
{"uuid":{"$uuid":"8b72cad8-926b-449f-856b-7259d1d30657"}}}}
{"t":{"$date":"2025-10-12T07:26:30.322+00:00"},"s":"I",  "c":"INDEX",    "id":20438,   "ctx":"conn2","msg":"Index build: registering","attr":
{"buildUUID":{"uuid":{"$uuid":"bc771c3b-2c51-41c9-9011-caca8be83af7"}},"namespace":"blogify.users","collectionUUID":{"uuid":{"$uuid":"bb391f74-836a-4edb-
a14f-6d311a486cab"}},"indexes":1,"firstIndex":{"name":"email_1"},"command":{"createIndexes":"users","v":2,"indexes":
[{"unique":true,"background":true,"name":"email_1","key":{"email":1}}],"ignoreUnknownIndexOptions":false}}}
{"t":{"$date":"2025-10-12T07:26:30.322+00:00"},"s":"I",  "c":"REPL",     "id":7360100, "ctx":"conn2","msg":"Added oplog entry for createIndexes to
transaction","attr":{"namespace":"blogify.$cmd","uuid":{"uuid":{"$uuid":"bb391f74-836a-4edb-a14f-6d311a486cab"}},"object":
{"createIndexes":"users","v":2,"unique":true,"key":{"email":1},"name":"email_1","background":true}}}
{"t":{"$date":"2025-10-12T07:26:30.333+00:00"},"s":"I",  "c":"INDEX",    "id":20345,   "ctx":"conn3","msg":"Index build: done building","attr":
{"buildUUID":null,"collectionUUID":{"uuid":{"$uuid":"007cc612-c51f-4067-897f-
a76e42f6d090"}},"namespace":"blogify.posts","index":"title_text_content_text","ident":"index-7-1731626970878222548","collectionIdent":"collection-1-
1731626970878222548","commitTimestamp":null}}
{"t":{"$date":"2025-10-12T07:26:30.333+00:00"},"s":"I",  "c":"INDEX",    "id":20440,   "ctx":"conn3","msg":"Index build: waiting for index build to
complete","attr":{"buildUUID":{"uuid":{"$uuid":"5d4fdec8-4c0a-4eb1-997f-78d4acce8b08"}},"deadline":{"$date":{"$numberLong":"9223372036854775807"}}}}
{"t":{"$date":"2025-10-12T07:26:30.333+00:00"},"s":"I",  "c":"INDEX",    "id":20447,   "ctx":"conn3","msg":"Index build: completed","attr":{"buildUUID":
{"uuid":{"$uuid":"5d4fdec8-4c0a-4eb1-997f-78d4acce8b08"}}}}
{"t":{"$date":"2025-10-12T07:26:30.352+00:00"},"s":"I",  "c":"INDEX",    "id":20345,   "ctx":"conn2","msg":"Index build: done building","attr":
{"buildUUID":null,"collectionUUID":{"uuid":{"$uuid":"bb391f74-836a-4edb-a14f-
6d311a486cab"}},"namespace":"blogify.users","index":"email_1","ident":"index-8-1731626970878222548","collectionIdent":"collection-0-
1731626970878222548","commitTimestamp":null}}
{"t":{"$date":"2025-10-12T07:26:30.353+00:00"},"s":"I",  "c":"INDEX",    "id":20440,   "ctx":"conn2","msg":"Index build: waiting for index build to
complete","attr":{"buildUUID":{"uuid":{"$uuid":"bc771c3b-2c51-41c9-9011-caca8be83af7"}},"deadline":{"$date":{"$numberLong":"9223372036854775807"}}}}
{"t":{"$date":"2025-10-12T07:26:30.353+00:00"},"s":"I",  "c":"INDEX",    "id":20447,   "ctx":"conn2","msg":"Index build: completed","attr":{"buildUUID":
{"uuid":{"$uuid":"bc771c3b-2c51-41c9-9011-caca8be83af7"}}}}
{"t":{"$date":"2025-10-12T07:26:40.659+00:00"},"s":"I",  "c":"NETWORK",  "id":22943,   "ctx":"listener","msg":"Connection accepted","attr":
{"remote":"172.18.0.3:47984","isLoadBalanced":false,"uuid":{"uuid":{"$uuid":"3643f7fc-0261-4bcf-9c49-
3d47466f9b52"}},"connectionId":5,"connectionCount":5}}
{"t":{"$date":"2025-10-12T07:26:40.663+00:00"},"s":"I",  "c":"NETWORK",  "id":51800,   "ctx":"conn5","msg":"client metadata","attr":
{"remote":"172.18.0.3:47984","client":"conn5","negotiatedCompressors":[],"doc":{"driver":
{"name":"nodejs|Mongoose","version":"6.20.0|8.19.1"},"platform":"Node.js v18.20.8, LE","os":{"name":"linux","architecture":"x64","version":"6.6.87.2-
microsoft-standard-WSL2","type":"Linux"},"env":{"container":{"runtime":"docker"}}}}}
```



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Step 5: Stop Containers

Command:

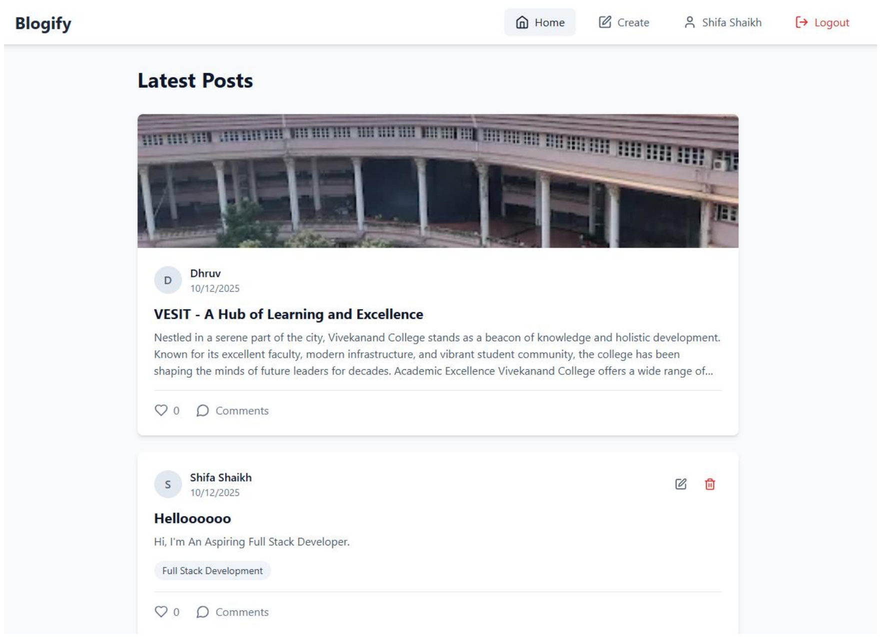
```
docker-compose down
```

- Stops and removes containers.

- Optional: `docker-compose down -v` to remove volumes and clear database.

5. Observations

- Docker containers isolate backend, frontend, and database.
- Using Docker Compose, the entire application can be started/stopped with a single command.
- Containerization ensures environment consistency.
- MongoDB Atlas works with containerized backend without needing a local MongoDB container.



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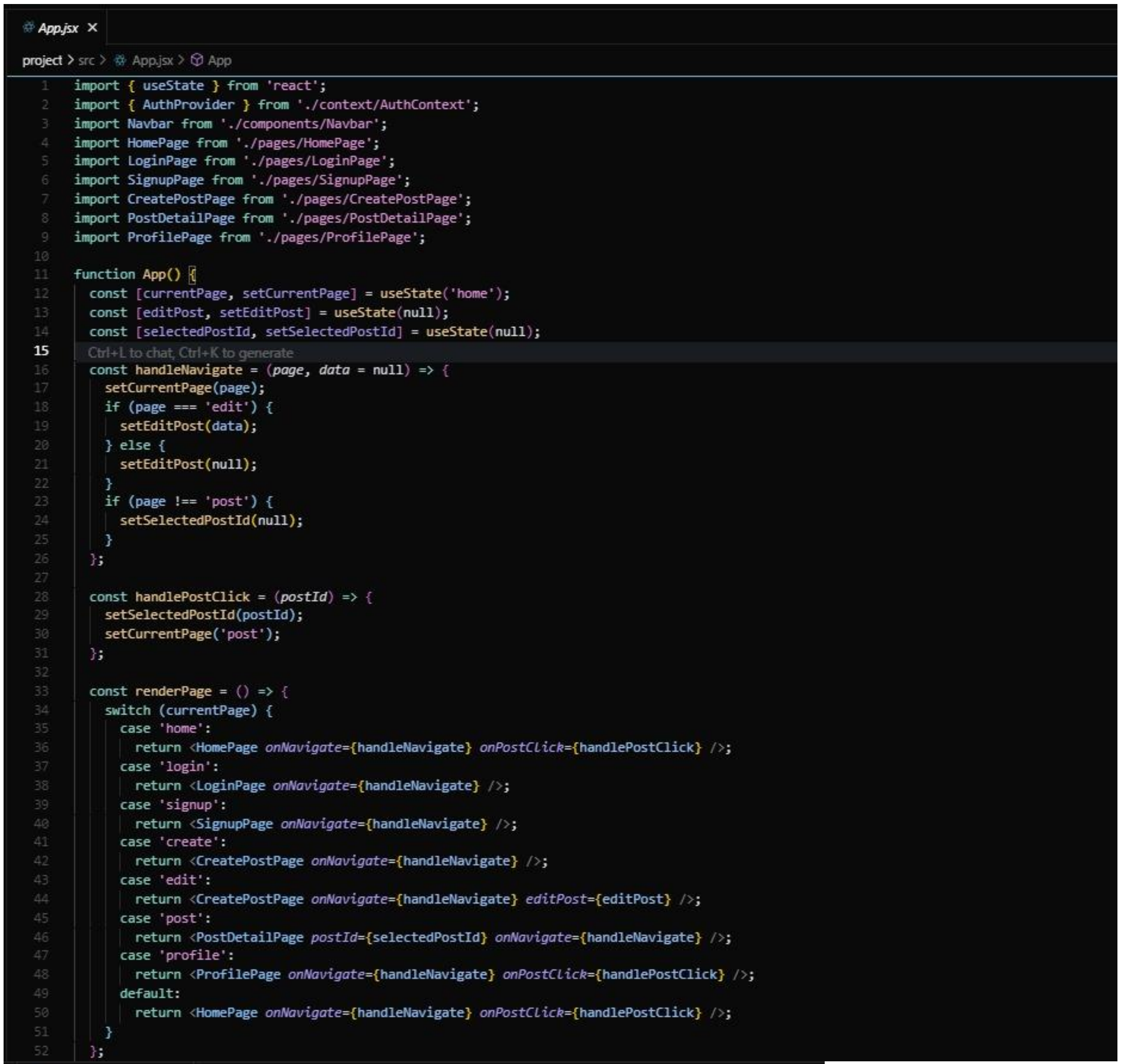
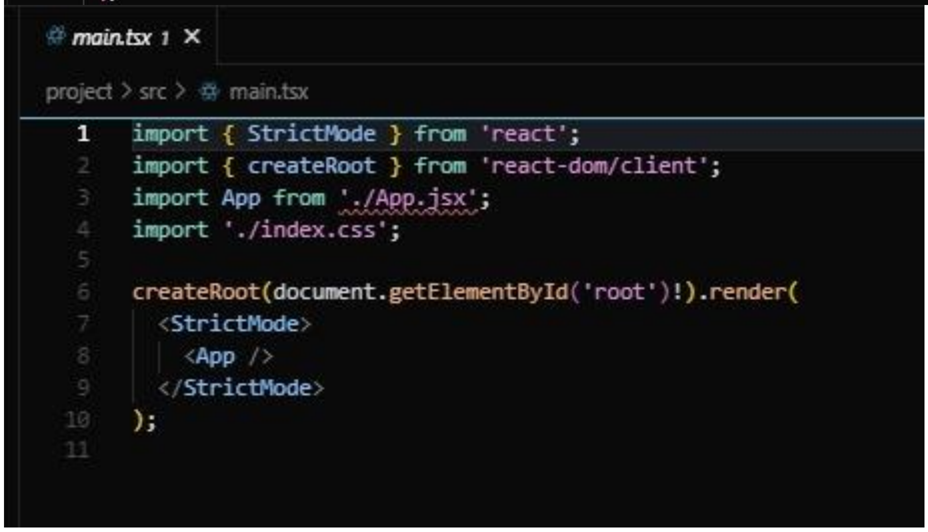
6. Conclusion

- The experiment successfully containerized the Blogify MERN application using Docker.
- Backend, frontend, and database can run independently in containers.
- Docker simplifies deployment and ensures portability.

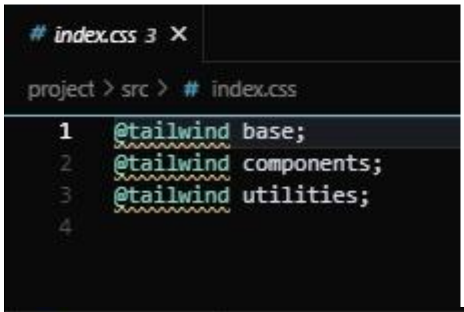
- Containerization is essential for modern software development and scalable applications.


App.jsx ×
project > src > App.jsx > App
Ctrl+L to chat, Ctrl+K to generate

```jsx
import { useState } from 'react';
import { AuthProvider } from './context/AuthContext';
import Navbar from './components/Navbar';
import HomePage from './pages/HomePage';
import LoginPage from './pages/LoginPage';
import SignupPage from './pages/SignupPage';
import CreatePostPage from './pages/CreatePostPage';
import PostDetailPage from './pages/PostDetailPage';
import ProfilePage from './pages/ProfilePage';

function App() {
  const [currentPage, setCurrentPage] = useState('home');
  const [editPost, setEditPost] = useState(null);
  const [selectedPostId, setSelectedPostId] = useState(null);

  const handleNavigate = (page, data = null) => {
    setCurrentPage(page);
    if (page === 'edit') {
      setEditPost(data);
    } else {
      setEditPost(null);
    }
    if (page !== 'post') {
      setSelectedPostId(null);
    }
  };

  const handlePostClick = (postId) => {
    setSelectedPostId(postId);
    setCurrentPage('post');
  };

  const renderPage = () => {
    switch (currentPage) {
      case 'home':
        return <HomePage onNavigate={handleNavigate} onPostClick={handlePostClick} />;
      case 'login':
        return <LoginPage onNavigate={handleNavigate} />;
      case 'signup':
        return <SignupPage onNavigate={handleNavigate} />;
      case 'create':
        return <CreatePostPage onNavigate={handleNavigate} />;
      case 'edit':
        return <CreatePostPage onNavigate={handleNavigate} editPost={editPost} />;
      case 'post':
        return <PostDetailPage postId={selectedPostId} onNavigate={handleNavigate} />;
      case 'profile':
        return <ProfilePage onNavigate={handleNavigate} onPostClick={handlePostClick} />;
      default:
        return <HomePage onNavigate={handleNavigate} onPostClick={handlePostClick} />;
    }
  };
```



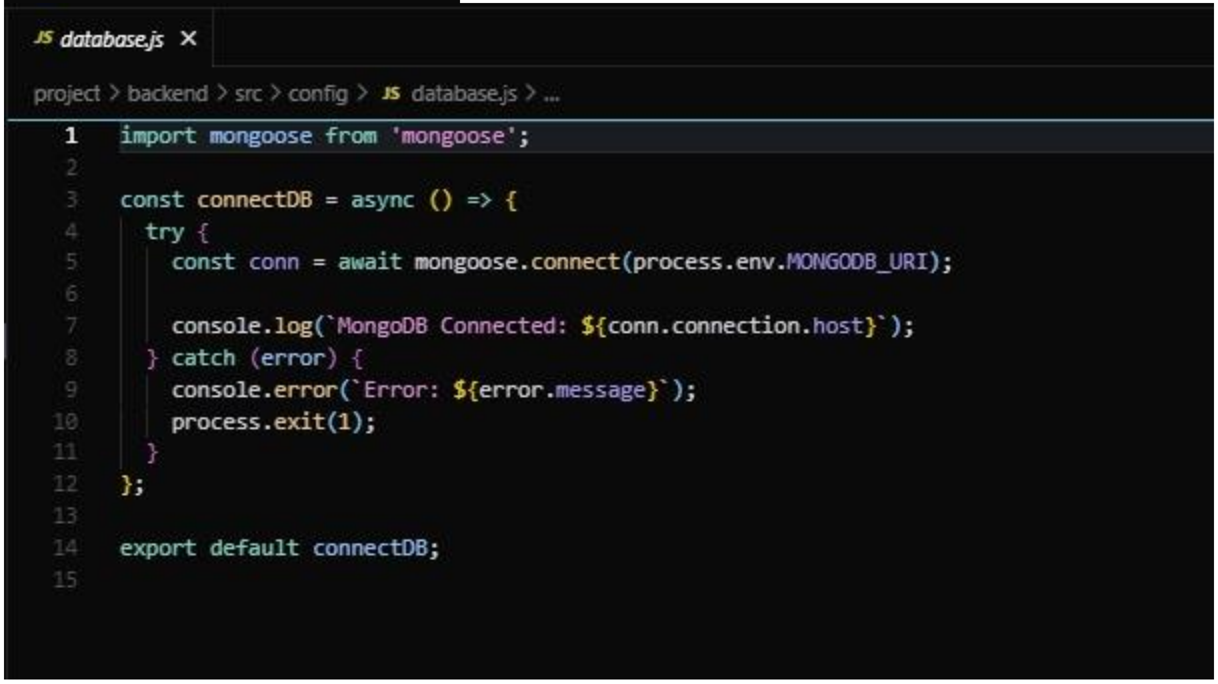
```tsx
import { StrictMode } from 'react';
import { createRoot } from 'react-dom/client';
import App from './App.jsx';
import './index.css';

createRoot(document.getElementById('root')!).render(
  <StrictMode>
    <App />
  </StrictMode>
);
```



index.css 3 ×

project > src > # index.css

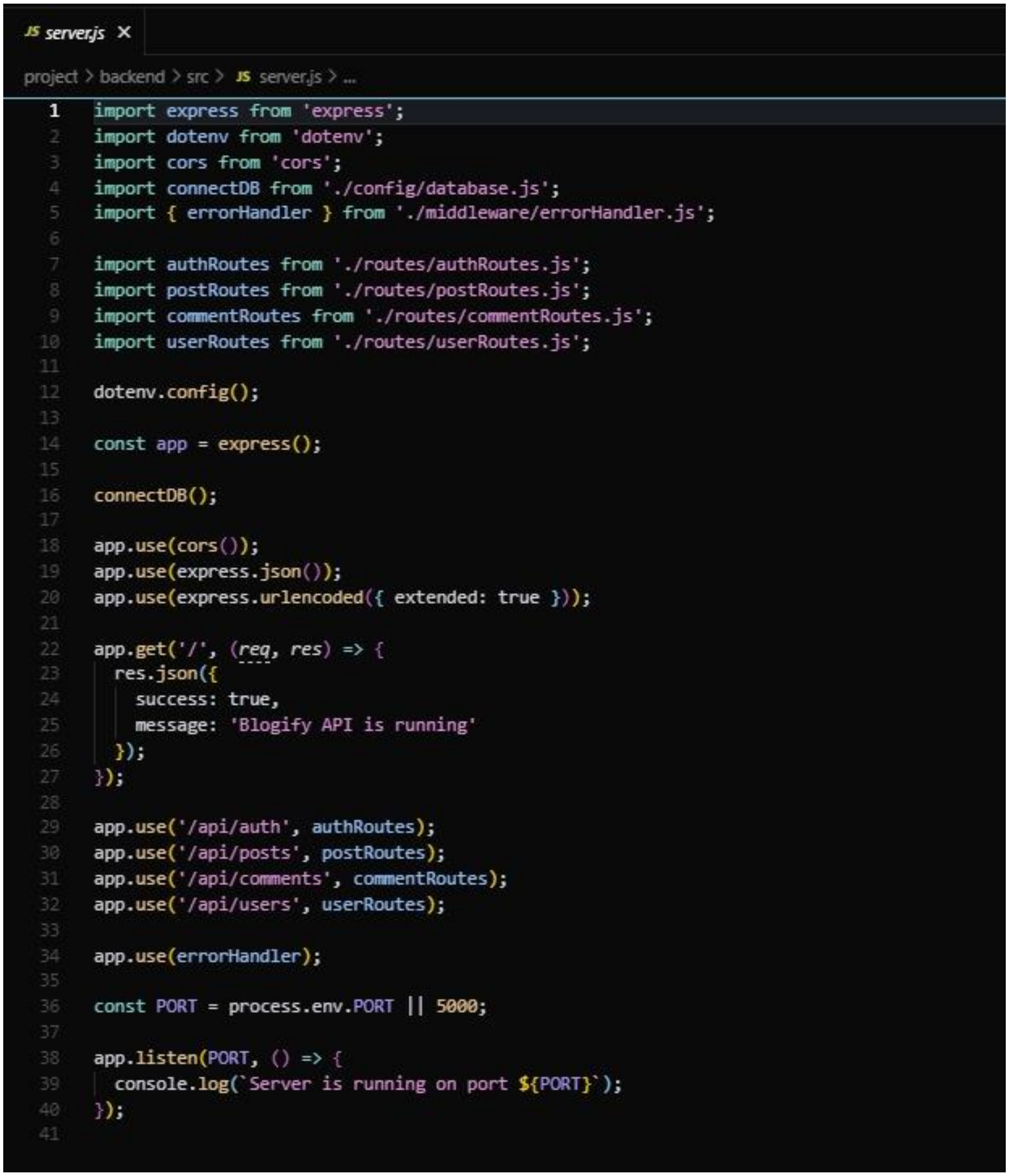
```css
@tailwind base;
@tailwind components;
@tailwind utilities;
```



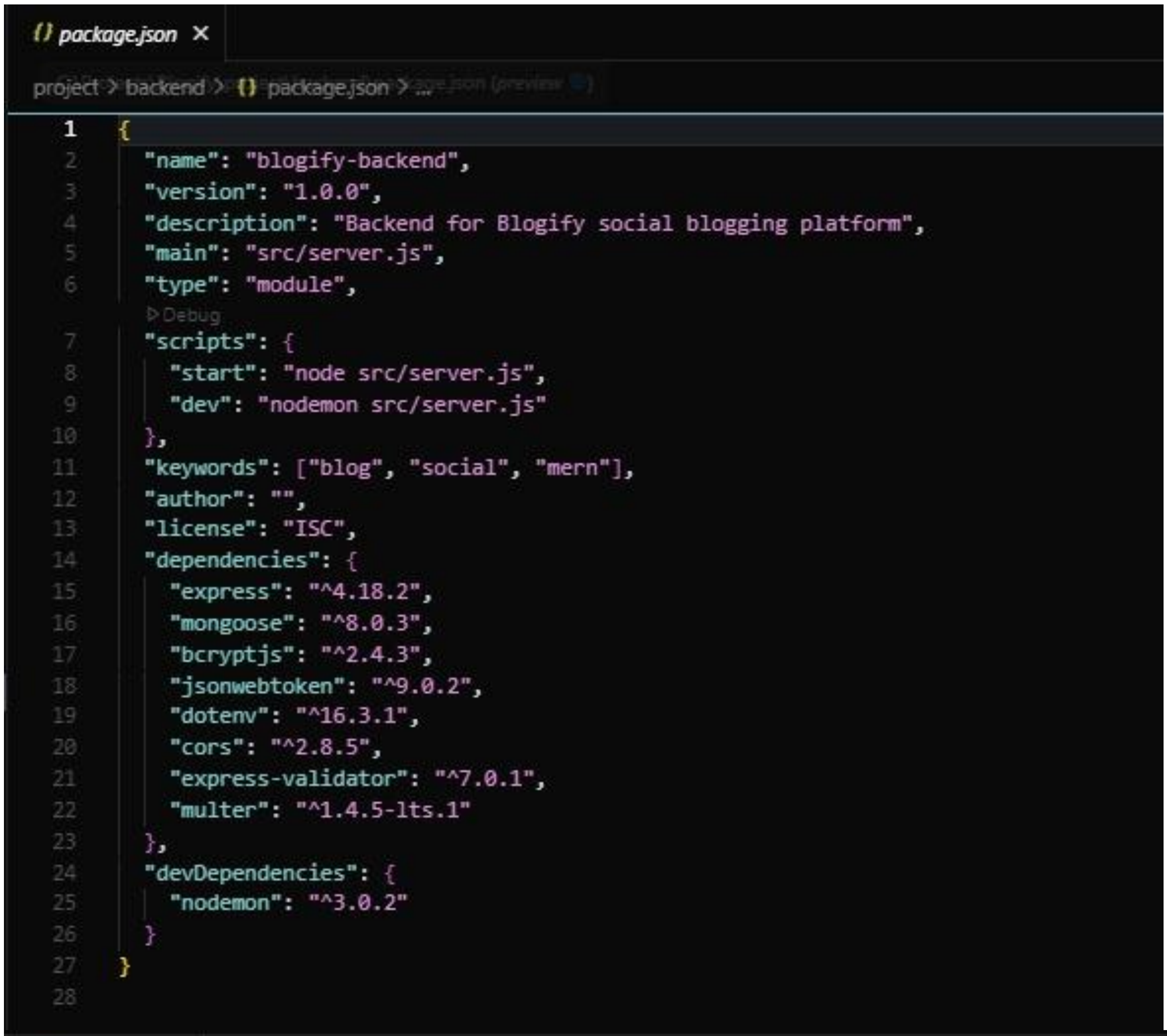
database.js ×

project > backend > src > config > database.js > ...

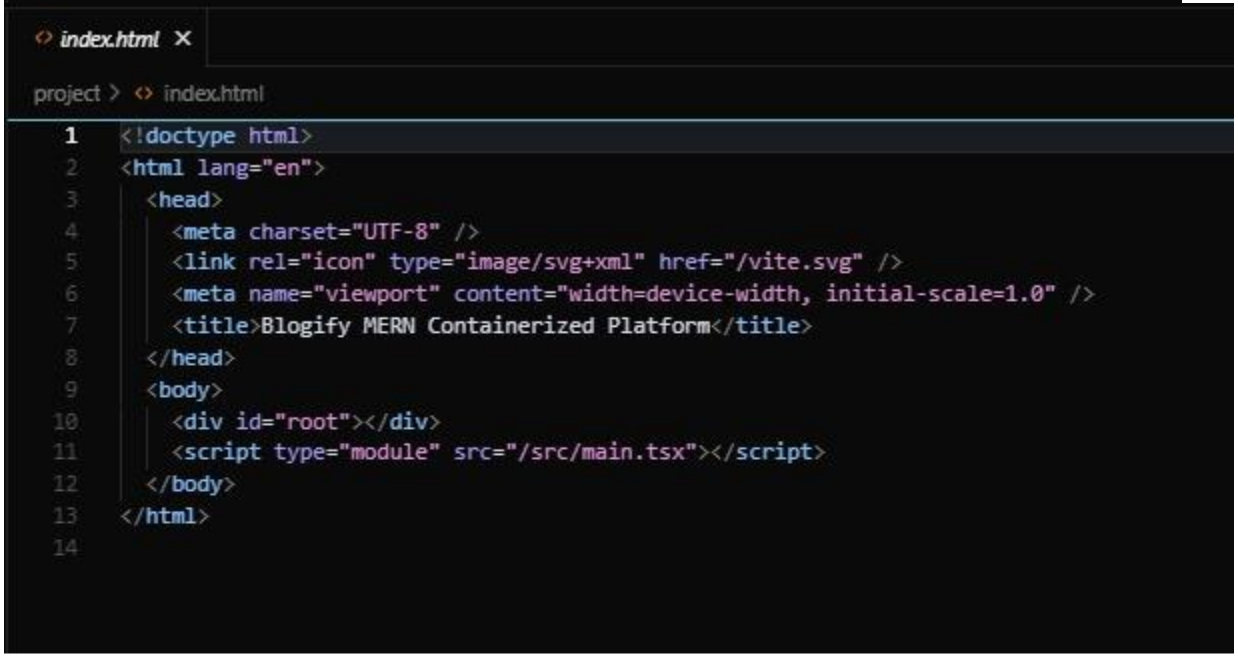
```javascript
import mongoose from 'mongoose';

const connectDB = async () => {
  try {
    const conn = await mongoose.connect(process.env.MONGODB_URI);

    console.log(`MongoDB Connected: ${conn.connection.host}`);
  } catch (error) {
    console.error(`Error: ${error.message}`);
    process.exit(1);
  }
};

export default connectDB;
```



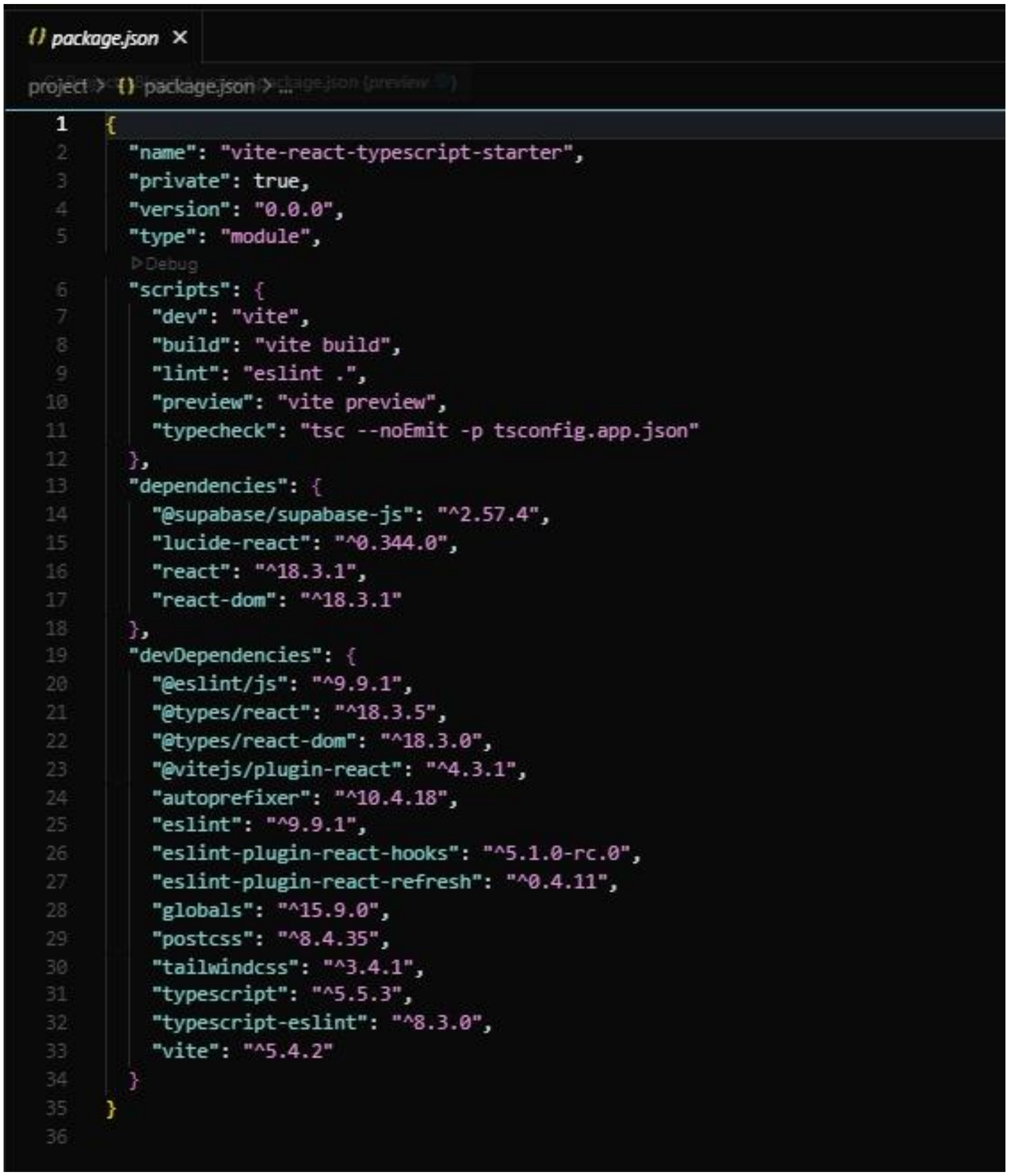
```javascript
import express from 'express';
import dotenv from 'dotenv';
import cors from 'cors';
import connectDB from './config/database.js';
import { errorHandler } from './middleware/errorHandler.js';

import authRoutes from './routes/authRoutes.js';
import postRoutes from './routes/postRoutes.js';
import commentRoutes from './routes/commentRoutes.js';
import userRoutes from './routes/userRoutes.js';

dotenv.config();

const app = express();

connectDB();

app.use(cors());
app.use(express.json());
app.use(express.urlencoded({ extended: true }));

app.get('/', (req, res) => {
  res.json({
    success: true,
    message: 'Blogify API is running'
  });
});

app.use('/api/auth', authRoutes);
app.use('/api/posts', postRoutes);
app.use('/api/comments', commentRoutes);
app.use('/api/users', userRoutes);

app.use(errorHandler);

const PORT = process.env.PORT || 5000;

app.listen(PORT, () => {
  console.log(`Server is running on port ${PORT}`);
});
```



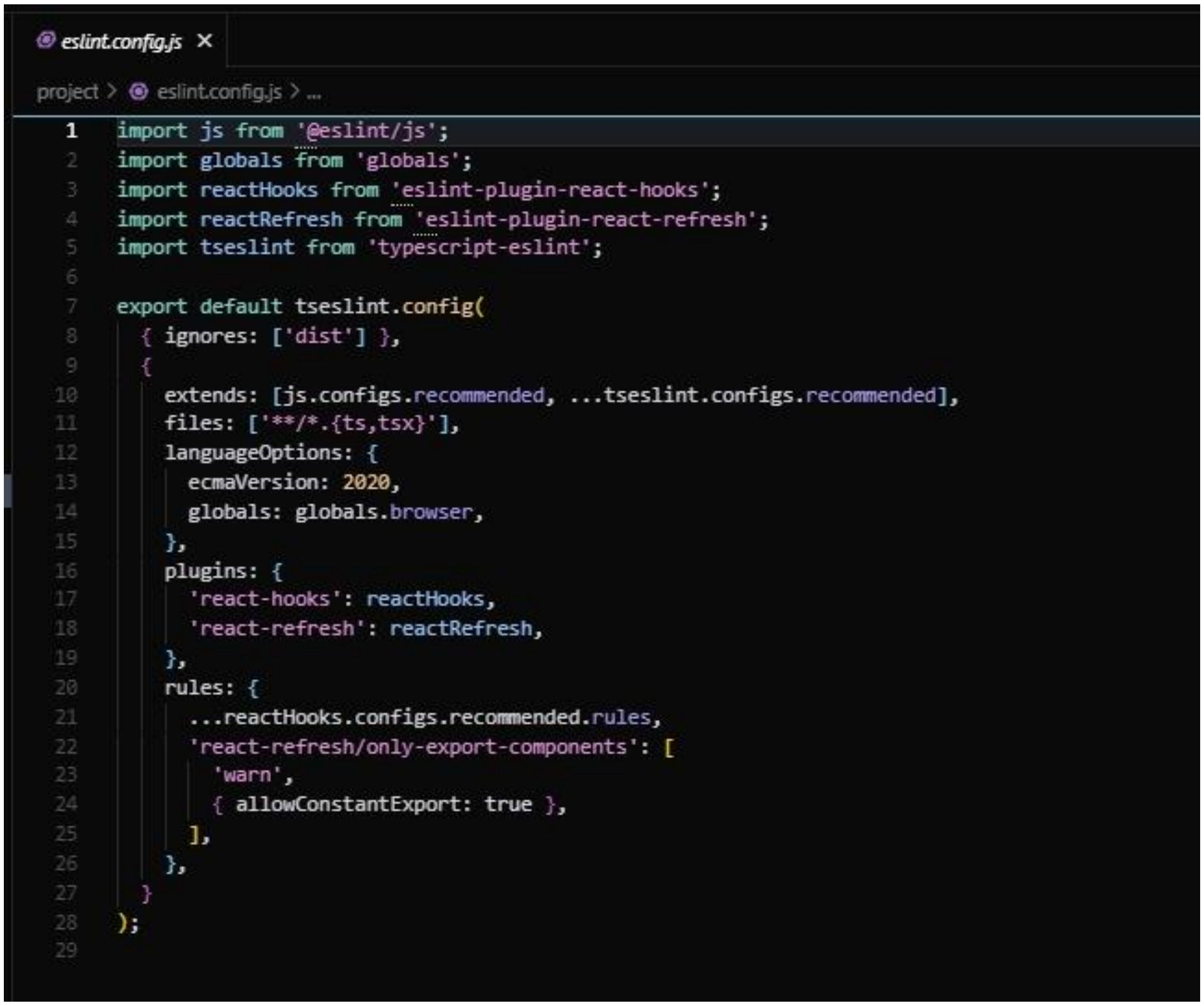
```json
{
  "name": "blogify-backend",
  "version": "1.0.0",
  "description": "Backend for Blogify social blogging platform",
  "main": "src/server.js",
  "type": "module",
  "scripts": {
    "start": "node src/server.js",
    "dev": "nodemon src/server.js"
  },
  "keywords": ["blog", "social", "mern"],
  "author": "",
  "license": "ISC",
  "dependencies": {
    "express": "^4.18.2",
    "mongoose": "^8.0.3",
    "bcryptjs": "^2.4.3",
    "jsonwebtoken": "^9.0.2",
    "dotenv": "^16.3.1",
    "cors": "^2.8.5",
    "express-validator": "^7.0.1",
    "multer": "^1.4.5-lts.1"
  },
  "devDependencies": {
    "nodemon": "^3.0.2"
  }
}
```



```html
<!doctype html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <link rel="icon" type="image/svg+xml" href="/vite.svg" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Blogify MERN Containerized Platform</title>
  </head>
  <body>
    <div id="root"></div>
    <script type="module" src="/src/main.tsx"></script>
  </body>
</html>
```



```json
{
  "name": "vite-react-typescript-starter",
  "private": true,
  "version": "0.0.0",
  "type": "module",
  "scripts": {
    "dev": "vite",
    "build": "vite build",
    "lint": "eslint .",
    "preview": "vite preview",
    "typecheck": "tsc --noEmit -p tsconfig.app.json"
  },
  "dependencies": {
    "@supabase/supabase-js": "^2.57.4",
    "lucide-react": "^0.344.0",
    "react": "^18.3.1",
    "react-dom": "^18.3.1"
  },
  "devDependencies": {
    "@eslint/js": "^9.9.1",
    "@types/react": "^18.3.5",
    "@types/react-dom": "^18.3.0",
    "@vitejs/plugin-react": "^4.3.1",
    "autoprefixer": "^10.4.18",
    "eslint": "^9.9.1",
    "eslint-plugin-react-hooks": "^5.1.0-rc.0",
    "eslint-plugin-react-refresh": "^0.4.11",
    "globals": "^15.9.0",
    "postcss": "^8.4.35",
    "tailwindcss": "^3.4.1",
    "typescript": "^5.5.3",
    "typescript-eslint": "^8.3.0",
    "vite": "^5.4.2"
  }
}
```



```js
import js from '@eslint/js';
import globals from 'globals';
import reactHooks from 'eslint-plugin-react-hooks';
import reactRefresh from 'eslint-plugin-react-refresh';
import tseslint from 'typescript-eslint';

export default tseslint.config(
  { ignores: ['dist'] },
  {
    extends: [js.configs.recommended, ...tseslint.configs.recommended],
    files: ['**/*.{ts,tsx}'],
    languageOptions: {
      ecmaVersion: 2020,
      globals: globals.browser,
    },
    plugins: {
      'react-hooks': reactHooks,
      'react-refresh': reactRefresh,
    },
    rules: {
      ...reactHooks.configs.recommended.rules,
      'react-refresh/only-export-components': [
        'warn',
        { allowConstantExport: true },
      ],
    },
  }
);
```