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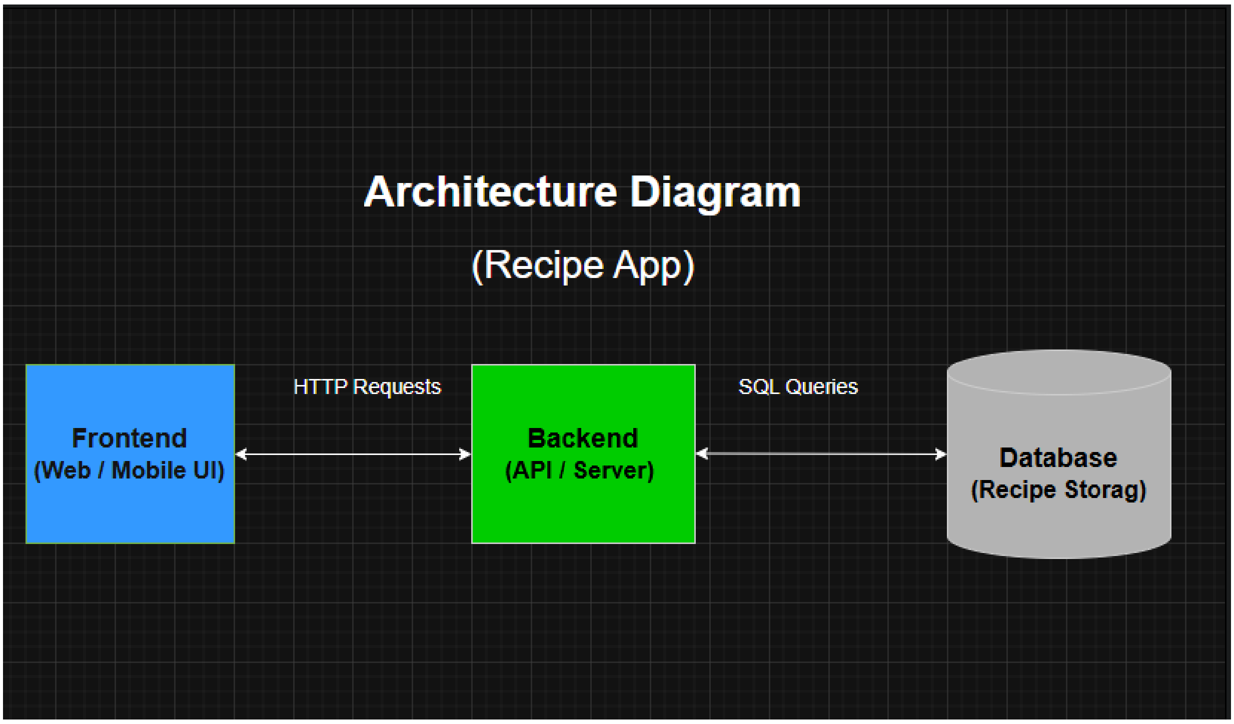
Architecture Diagram (Recipe App)



Component Explanations

Frontend (UI)

- Displays all recipe lists and individual recipe details
- Sends requests to the backend to create, read, update, and delete (CRUD) recipes
- Receives responses and updates the user interface accordingly

Backend (API Server)

- Validates incoming data
  - If validation fails –> returns 400 Bad Request + error message
- Provides REST endpoints with correct status codes
  - POST /recipes –> 201 Created + created recipe
  - GET /recipes –> 200 OK + list of recipes
  - GET /recipes/:id –> 200 OK + recipe OR 404 Not Found
  - PUT /recipes/:id –> 200 OK + updated recipeUpdate a recipe by ID
  - DELETE /recipes/:id –> 204 No Content
- Communicates with database
- Returns responses back to the frontend

Database

- Stores all recipe data: id, title, ingredients, instructions, etc.
- Supports CRUD operations requested by the backend

Sequence Diagrams (Text Format)

Adding a new recipe

- **User → Frontend → Backend → Database**
- User clicks "Add Recipe" button
- Frontend sends POST /recipes with recipe data
- Backend validates data
    - If invalid → 400 Bad Request → Frontend shows error
- Backend saves recipe to database
- Database returns newly created ID
- Backend responds 201 Created + created recipe
- Frontend updates the UI with new recipe

Viewing a specific recipe

- **User → Frontend → Backend → Database**
- User clicks on a recipe to view
- Frontend sends GET /recipes/:id
- Backend queries database
- If recipe exists → returns 200 OK + recipe data
- If recipe does not exist → returns 404 Not Found
- Frontend displays recipe OR shows “Recipe not found” message

Editing an existing recipe

- **User → Frontend → Backend → Database**
- User clicks "Edit" on a recipe
- Frontend sends PUT /recipes/:id with updated data
- Backend validates data
    - If invalid → 400 Bad Request
- Backend updates recipe in database
- Database returns updated record
- Backend sends 200 OK + updated recipe
- Frontend updates the page with new recipe details