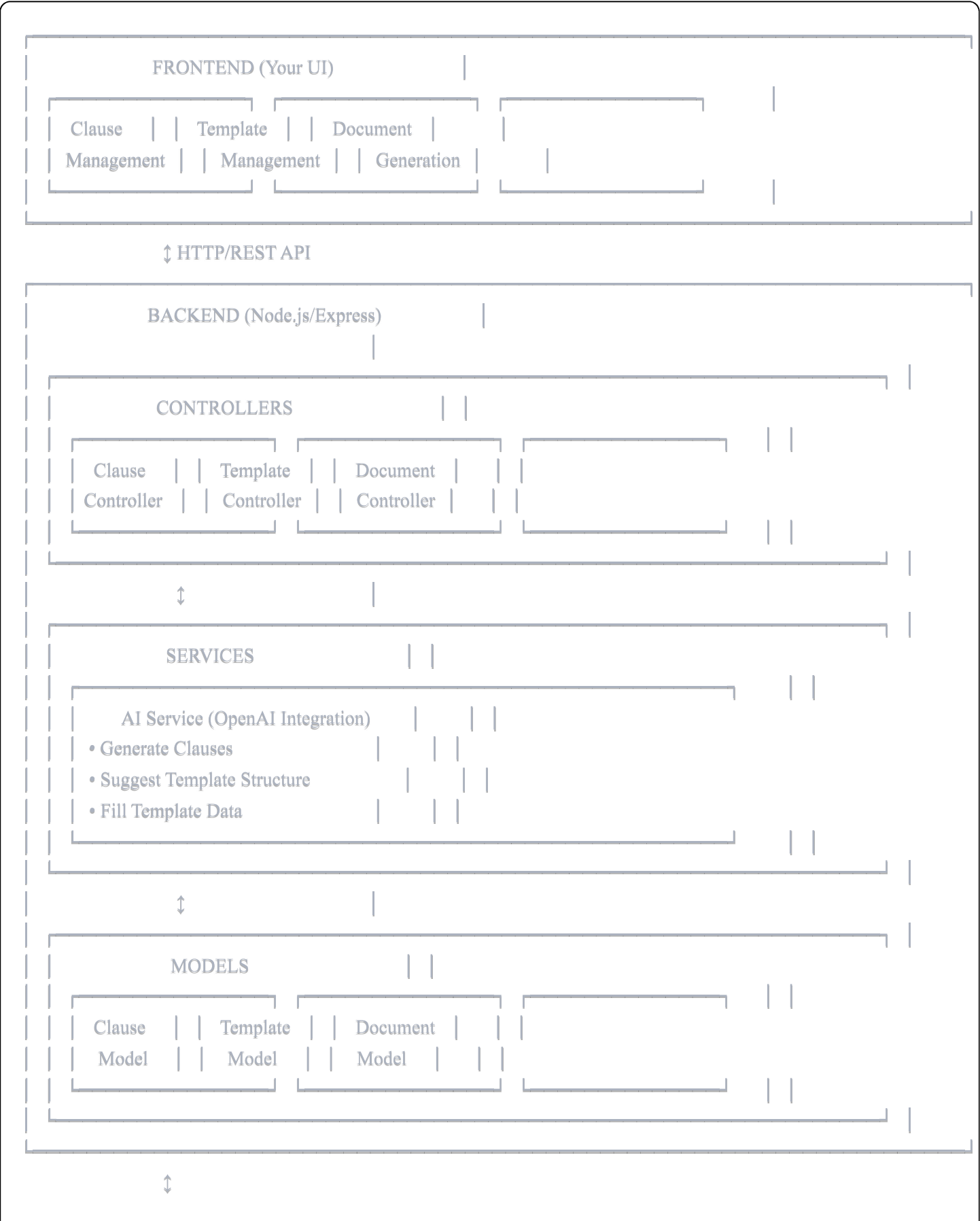
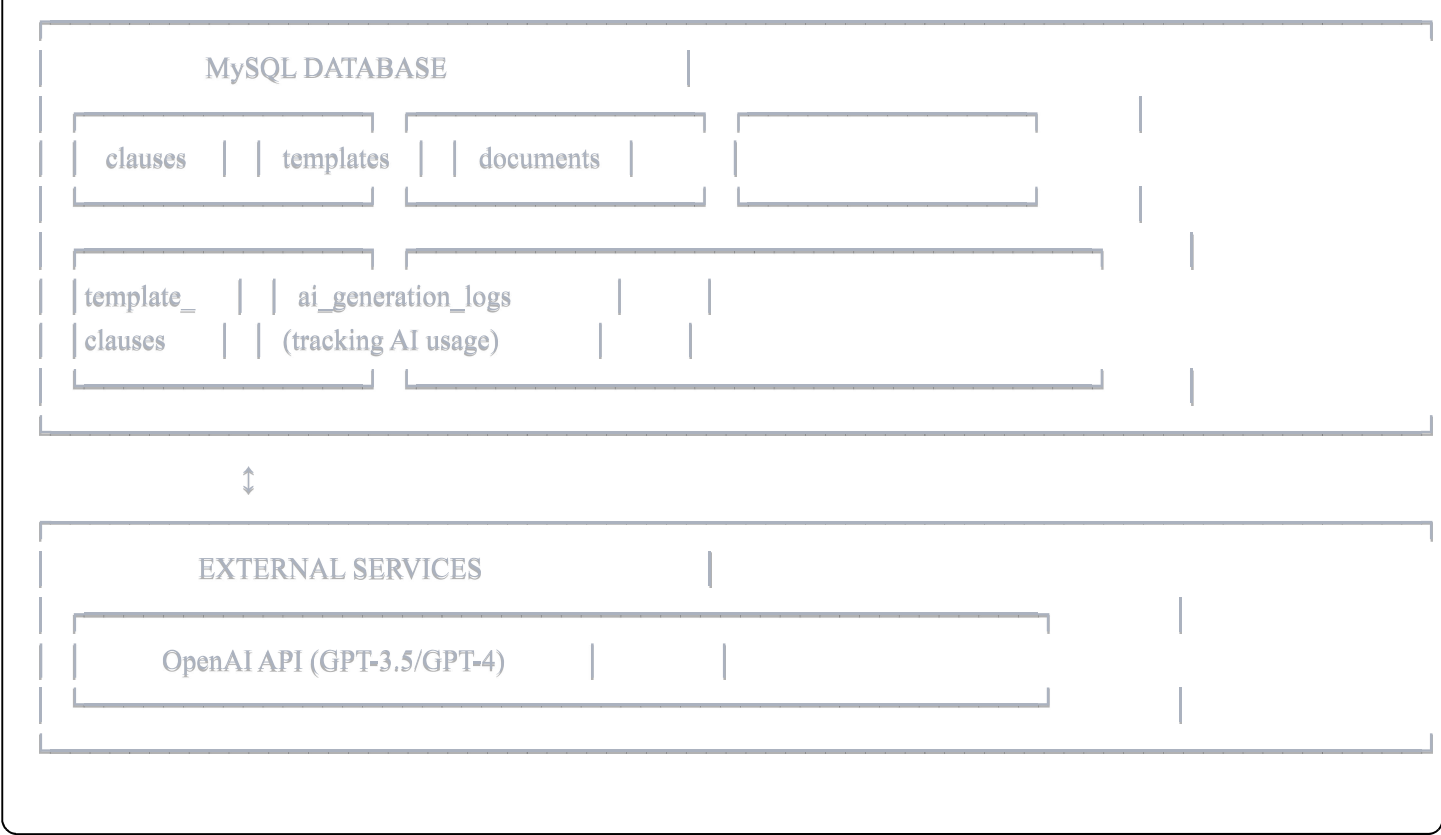


BDM System Architecture - Complete Overview

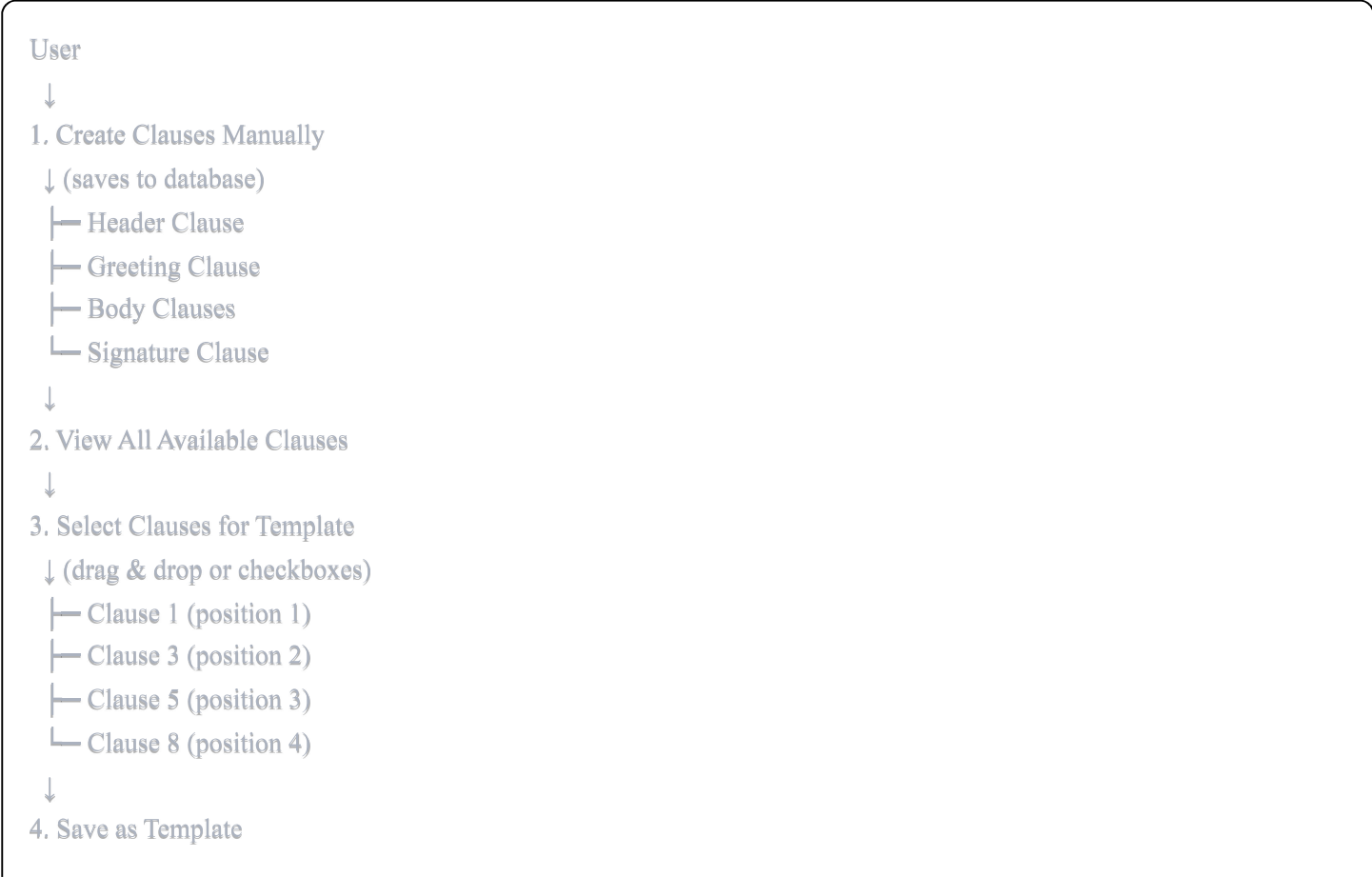
System Architecture Diagram





User Journey Flow

Journey 1: Manual Creation (Full Control)



↓

5. Use Template to Generate Documents

↓

6. Fill in Variables (names, dates, etc.)

↓

7. Download PDF ✓

Journey 2: AI-Assisted (Smart & Fast)

User

↓

1. Click "Use AI" Button

↓

2. Provide Context

└─ Document Type: "offer_letter"

└─ Company: "Tech Corp"

└─ Additional Info: "remote position"

↓

3. AI Generates Clauses (Preview)

↓

4. User Reviews & Edits

↓

5. Save Clauses to Database

↓

6. AI Suggests Template Structure

↓

7. User Reviews & Approves

↓

8. Save Template

↓

9. Use Template for Documents

↓

10. Download PDF ✓

Journey 3: Fully Automated (Fastest)

User

↓

1. Click "Generate Complete Template with AI"

↓

2. Provide:

└─ Template Name

- └ Document Type
- └ Context/Description



3. AI Creates Everything

- └ Generates all clauses
- └ Arranges in optimal order
- └ Creates template



4. User Reviews Complete Template



5. Use Template Immediately



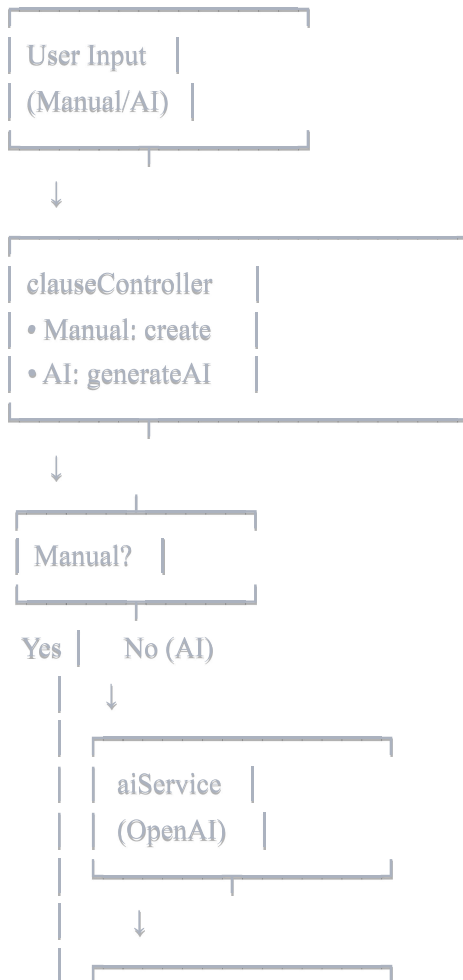
6. Generate Document

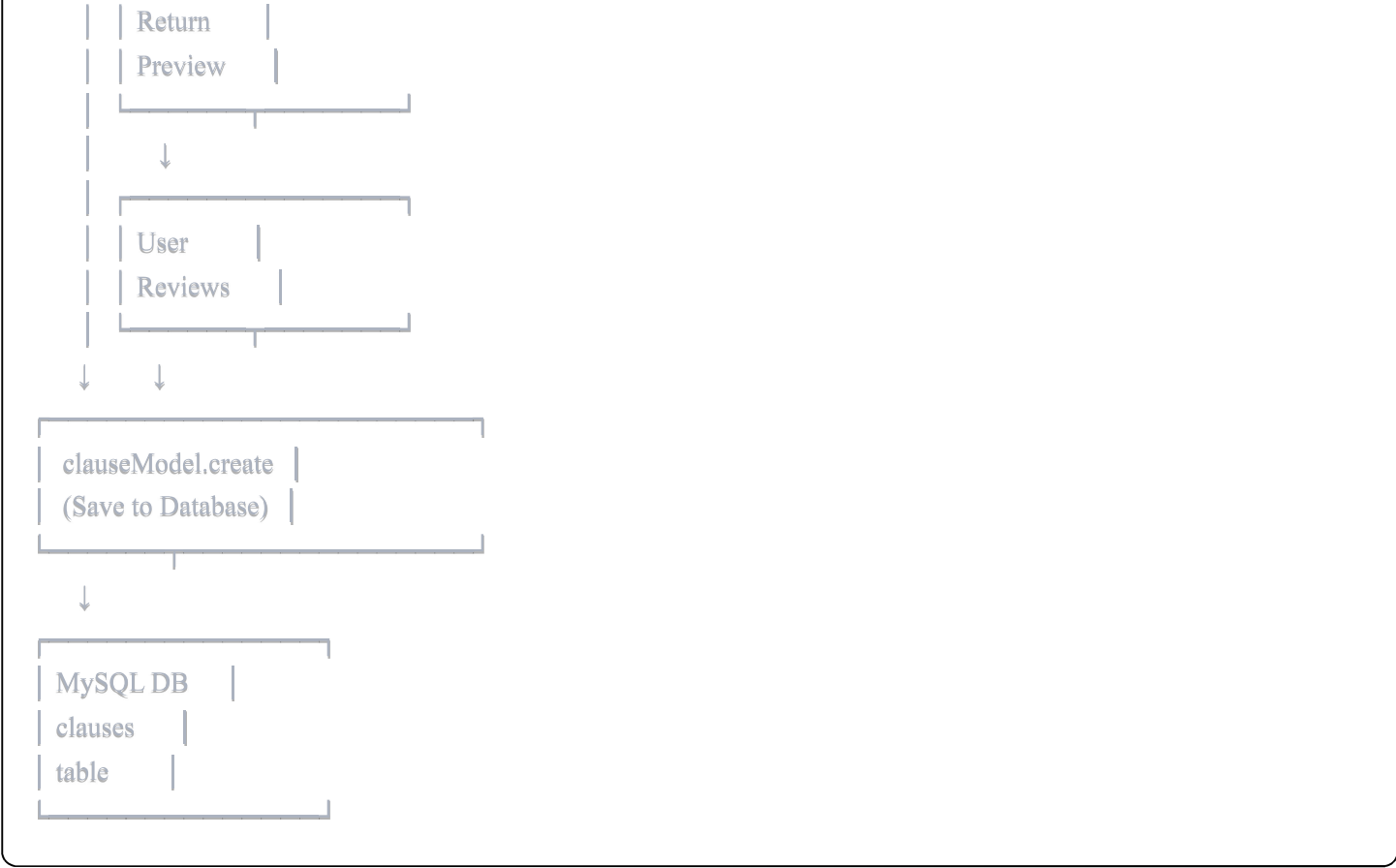


7. Download PDF ✓

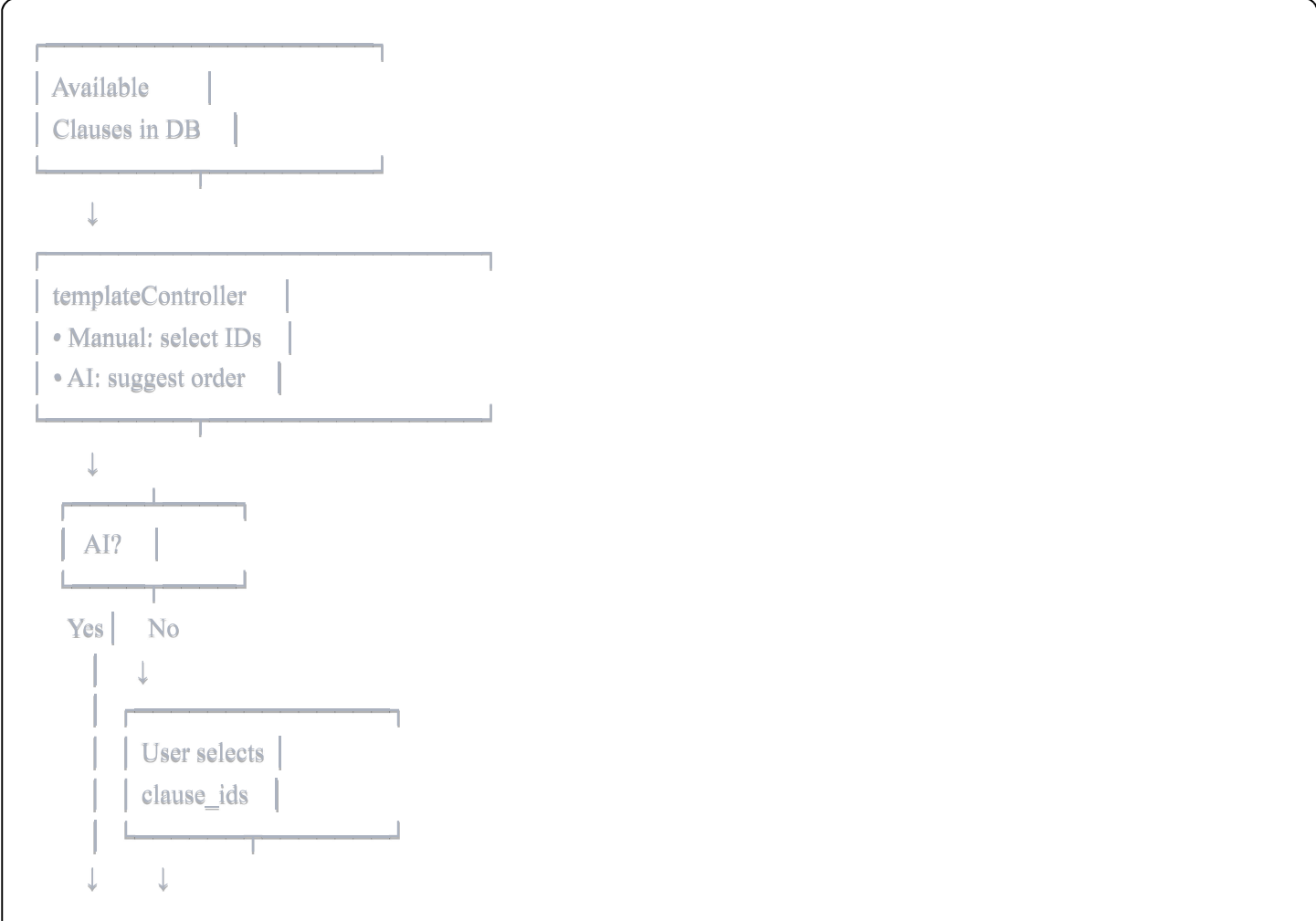
Data Flow Diagram

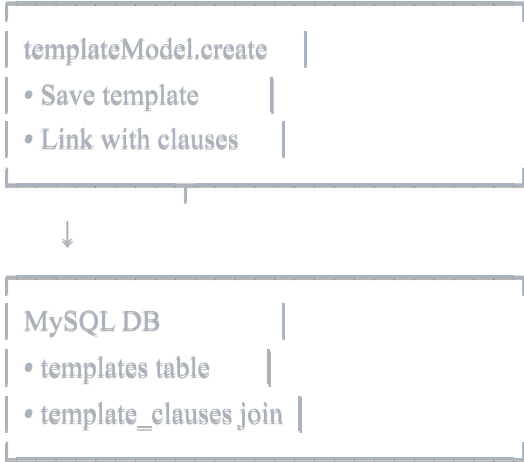
Clause Creation Flow



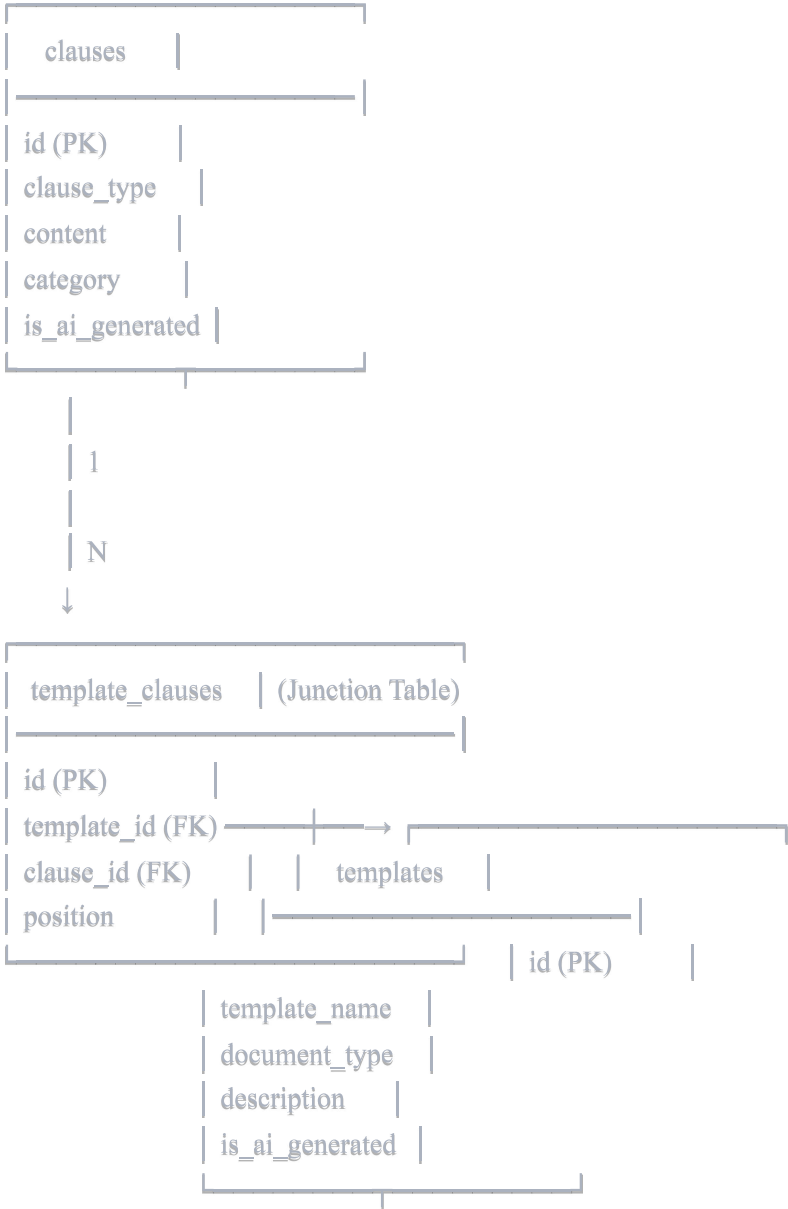


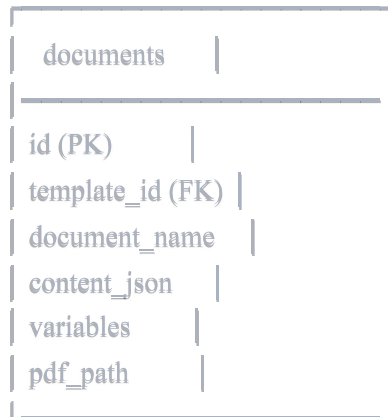
Template Creation Flow





Database Relationships





🔌 API Endpoint Structure

```
/api
├── /clauses
│   ├── GET / → Get all clauses
│   ├── GET /:id → Get clause by ID
│   ├── GET /category/:category → Get clauses by category
│   ├── POST /manual → Create clause manually
│   ├── POST /generate-ai → Generate with AI (preview)
│   ├── POST /save-ai-generated → Save AI clauses
│   ├── PUT /:id → Update clause
│   └── DELETE /:id → Delete clause
├── /templates
│   ├── GET / → Get all templates
│   ├── GET /:id → Get template with clauses
│   ├── GET /document-type/:type → Get by document type
│   ├── POST /manual → Create manually
│   ├── POST /generate-ai-structure → AI suggest structure
│   ├── POST /generate-ai-complete → AI create everything
│   ├── POST /save-ai-generated → Save AI template
│   ├── POST /:id/add-clause → Add clause to template
│   ├── DELETE /:id/remove-clause/:cid → Remove clause
│   ├── PUT /:id → Update template
│   └── DELETE /:id → Delete template
```

```
└── /documents
    ├── GET /          → Get all documents
    ├── GET /:id       → Get document by ID
    ├── POST /generate-document → Create from template
    ├── PUT /:id        → Update document
    └── DELETE /:id     → Delete document
```

Frontend Component Structure (Suggested)

```
src/
├── pages/
│   ├── ClausesPage.jsx
│   │   ├── ClauseList.jsx
│   │   ├── ClauseForm.jsx (Manual)
│   │   └── AIClauseGenerator.jsx
│   ├── TemplatesPage.jsx
│   │   ├── TemplateList.jsx
│   │   ├── TemplateBuilder.jsx (Drag & Drop)
│   │   └── AITemplateGenerator.jsx
│   ├── DocumentsPage.jsx
│   │   ├── DocumentList.jsx
│   │   ├── DocumentGenerator.jsx
│   │   └── PDFPreview.jsx
│   └── components/
│       ├── ClauseCard.jsx
│       ├── TemplatePreview.jsx
│       ├── AIButton.jsx ("Use AI" button)
│       └── LoadingSpinner.jsx
└── services/
    ├── clauseService.js (API calls)
    ├── templateService.js
    └── documentService.js
```


Cost Estimation Per Operation

Operation	Model	Tokens	Cost (Approx)
Generate 8 clauses	GPT-3.5	~800	\$0.001
Generate 8 clauses	GPT-4	~800	\$0.024
Suggest template structure	GPT-3.5	~500	\$0.0007
Suggest template structure	GPT-4	~500	\$0.015
Complete template generation	GPT-3.5	~1200	\$0.002
Complete template generation	GPT-4	~1200	\$0.036

Monthly estimates (100 documents):

- Using GPT-3.5: ~\$0.20/month
- Using GPT-4: ~\$6/month

Implementation Checklist

Phase 1: Backend (Current)

- ☒ Database schema
- ☒ Manual clause CRUD
- ☒ AI clause generation
- ☒ Manual template creation
- ☒ AI template suggestions
- ☒ AI complete template generation
- ☒ Document generation
- ☐ PDF generation (Next)

Phase 2: PDF Generation (Next Step)

- ☐ Add PDFKit or Puppeteer
- ☐ Create PDF templates
- ☐ Download endpoint
- ☐ Email integration (optional)

Phase 3: Frontend (Future)

- ☐ React/Vue/Angular UI
- ☐ Clause management interface

- ☐ Template builder (drag & drop)
 - ☐ "Use AI" buttons
 - ☐ Document preview
 - ☐ PDF download button
-

System Status:  Backend Complete |  PDF Generation Next |  Frontend Pending