

GEMtracker

Project Documentation

Executive Summary

GEMtracker is a complete web application for managing government tender bids from GeM (Government e-Marketplace). It automates the tedious process of tracking bid deadlines and compliance requirements.

Core Features

1. Smart PDF Processing

The application automatically extracts critical information from GeM tender PDFs:

Bid Number	e.g., GEM/2026/B/7132339
Bid End Date	Deadline extraction
Item Category	Tender description
Short Subject	10-word summary

2. Dashboard & Organization

Professional dashboard featuring:

- **Tender List:** Left sidebar with all tenders
- **Custom Nicknames:** Rename tenders for easier identification
- **Time Remaining:** Visual countdown (e.g., '5d 3h left')
- **Status Indicators:** Green for active, red for expired
- **Smart Sorting:** Active tenders first (by deadline), expired last

3. 28-Point Compliance Checklist

Every tender includes a comprehensive checklist with dual status tracking:

- **Ready?** - Document is prepared
- **Submitted?** - Document uploaded to GeM

Standard checklist includes: EMD, Manufacturer Authorization, GST Certificate, PAN Card, Technical Specifications, Financial Documents, and 22+ additional items.

4. Data Management

- **Backup Download:** Export entire database
- **PDF Download:** Retrieve original tender documents
- **Nickname System:** Custom friendly names for tenders

Technical Architecture

Frontend (User Interface)

- **Framework:** Next.js (React-based)
- **Styling:** Tailwind CSS for responsive design
- **Build:** Compiled to static files (HTML/CSS/JS)
- **Features:** Modern, fast, mobile-responsive

Backend (Server)

- **Framework:** FastAPI (Python)
- **Database:** SQLite for portable data storage
- **PDF Processing:** pdfplumber library
- **API:** RESTful endpoints for all operations

Deployment: Single-Service Architecture

- Frontend compiled into backend
- Single server deployment
- No CORS complexity
- One URL for everything
- Simplified deployment process

Key Advantages

✓ Time-Saving	Eliminates manual data entry
✓ Deadline Management	Never miss a bid deadline
✓ Compliance Tracking	Structured checklist system
✓ Portable	SQLite allows easy backup
✓ Simple Deployment	One command local, one service cloud
✓ Cost-Effective	Free and open-source

Deployment Options

Local Deployment

```
cd GEMtracker/backend  
python run_backend.py
```

Access at: **http://localhost:8000**

Cloud Deployment (Render)

1. Push code to GitHub
2. Create Web Service on Render
3. Point to 'backend' directory
4. Automatic deployment

Technology Stack

Frontend	Next.js 16.x, React, TypeScript, Tailwind CSS, Axios
Backend	Python 3.9+, FastAPI, SQLAlchemy, pdfplumber, Uvicorn
Database	SQLite (development), PostgreSQL (production)

Market Position

Traditional Solutions:

- Spreadsheets: Manual, error-prone, no automation
- Enterprise Software: Expensive, complex, overkill

GEMtracker Advantage:

- Automated extraction
- Professional interface
- Simple enough for individuals
- Scalable for businesses
- Free and customizable

Use Cases

1. **Individual Vendors:** Track personal tender bids
2. **Small Businesses:** Manage multiple concurrent bids
3. **Procurement Teams:** Coordinate compliance documentation
4. **Consultants:** Offer as a managed service

Conclusion

GEMtracker represents a modern, efficient solution for government tender bid management. By combining automated PDF extraction, intelligent organization, and comprehensive compliance tracking, it significantly reduces manual effort while improving deadline adherence and documentation completeness.

The single-service architecture ensures easy deployment and maintenance, making it accessible for users ranging from individual vendors to procurement teams.

Built with: Python, FastAPI, Next.js, React, SQLite

License: Open Source

Deployment: Local or Cloud (Render, Railway, etc.)