

FastAides

FastAides is a comprehensive healthcare and service platform built using Django and Django REST Framework, designed to facilitate seamless interactions between users (customers), various vendors (service providers, pharmacies, product sellers), and platform administrators. It provides end-to-end support for vendor onboarding, service/product management, appointment booking, order processing including prescription-based orders, AI-powered chatbot assistance, communication, promotion, and notification functionalities.

1. Introduction & Purpose

FastAides connects customers with a diverse ecosystem of vendors, enabling users to book appointments, place orders (including those requiring prescriptions), and interact through AI chatbots for assistance and medicine order processing. The platform supports multi-role access with distinct interfaces and capabilities for business admins, vendors, and customers, ensuring workflow segmentation and role-specific functionalities.

2. Core Functionalities

- User Roles: Admins (business), Vendors (service, package, product, pharmacy), Customers.
- Vendor Management: Registration, document verification workflow (licenses, certifications, identity proofs), and vendor profile management.
- Item Management: Vendors can add/manage services, packages, and products supporting bulk uploads and detailed categorization.
- Appointment System: Calendar-integrated booking with validation against vendor availability and flexible status updates.
- Order Processing: Regular orders, vendor-specific orders, and AI chatbot-driven medicine orders with prescription upload and validation.
- AI Chatbot: Uses Langchain and OpenAI GPT models to handle medical queries, prescription processing, pharmacy locating, and ordering.
- Communication: Real-time chat between business admins and vendors, plus a ticketing system for support.
- Promotions & Content: Coupon and discount functionalities for platform-wide and vendor-specific use, blogging, banners, and advertising.
- Notifications: Email and WhatsApp notifications for critical events such as order approval, appointment updates, and vendor approvals.

3. Technology Stack

- Backend: Django framework with Django REST Framework APIs.
- Database: PostgreSQL for structured data storage.
- AI and Chatbot: OpenAI GPT models (e.g., gpt-4o-mini), Langchain for LLM orchestration, Groq as an alternative LLM provider, and ChromaDB for vector storage in retrieval-augmented generation (RAG).
- Asynchronous Tasks & Real-time Features: Implied use of Django Channels for WebSocket support in chat.
- External Integrations: PharmApps API for pharmacy data, Twilio-like WhatsApp messaging through a custom endpoint.
- Excel and File Handling: pandas, openpyxl for bulk uploads and processing.

4. Database Schema Highlights

- User Models: Custom user model (extends AbstractUser) with flags for business and vendor roles; Customer model with phone verification via OTP.
- Vendor Models: VendorsRegister stores approved vendor details; Vendor_Verification handles applications; VendorDefaultSettings and VendorCalendar manage working hours and holidays.
- Service & Product Models: Categorized groups for services, packages, and product categories; individual service, package, and product models linked to vendors.
- Appointment & Order Models: Model structures for appointments with status tracking and validation, order tables for vendor and AI-chatbot-based orders, including prescription image and invoice management.
- Coupon & Usage: Coupon definitions with validation methods and usage tracking.
- Communication Models: Tickets, chat areas, message systems, and notifications for multi-channel communication.
- Content Models: Blogs, banners, advertisements linked to vendors or coupons.
- AI Chatbot Models: ChatSession managing AI interaction state; Message storing conversation logs; Prescription model for uploaded prescriptions with extracted data and validation states.

5. Admin Interface

- Customized Django admin with extensive filtering, searching, and field grouping for efficient management of users, vendors, services, packages, orders, coupons, appointments, chats, prescriptions, tickets, content, and notifications.

- Role-specific admin views allow granular control over vendor verification, item bulk uploads, calendar management, and AI chatbot session monitoring.

6. URL Structure & API Endpoints

- Separate URLs for authentication, vendor and admin dashboards, item management (add/edit/delete services/packages/products), appointment booking and management, order processing, chatbot interfaces, ticketing systems, coupon management, and content handling.
- DRF API endpoints supporting CRUD operations for core models, search functionalities (including LLM-powered semantic search), and external API integrations.

7. Application Logic & Workflows

- Authentication: Role-based login with session management and redirects.
- Vendor Management: Admin-driven approval/rejection flow with email notifications, and vendor self-management portals.
- Item Management: Supports both individual and bulk uploads of services, packages, and products.
- Appointment Booking: User booking validated against vendor calendar, with status updates visible to vendors and admin.
- Order Lifecycle: Order creation, assignment, status tracking, price updates, invoice handling, and notification delivery.
- AI Chatbot Flow: Handles text queries and prescription uploads, utilizing multiple AI tools to provide medical information, pharmacy locators, prescription validation, and medicine ordering.
- Communication: Integrated chat rooms for business-vendor communication with read tracking, alongside a support ticketing system.
- Coupon Application: Validates and applies discounts on appointments and orders.
- Content Publication: Blog and advertisement management with vendor associations.
- Notifications: Event-triggered email and WhatsApp messaging to keep stakeholders informed.

8. Key Features Summary

Feature	Description
Multi-role Support	Distinct roles for business admins, vendors, and customers.
Vendor Ecosystem	Verification, profile, calendar, service/product management.
Flexible Booking System	Calendar-aware appointments with vendor approval and tracking.
Advanced Order Handling	Orders including prescription-based with AI chatbot assistance.
AI-Powered Assistance	Chatbot leveraging Langchain and GPT for medical queries and order processing.
Communication Tools	Real-time chats and support tickets for issue resolution.

Promotions & Content	Coupons, blogs, banners, and advertisements management.
Notification System	Email and WhatsApp alerts for key updates and status changes.
Extensive Admin Tools	Custom admin interfaces for comprehensive platform oversight.

9. Summary

FastAides is a robust, modular healthcare and services platform built with Django emphasizing ease of vendor onboarding, flexible service/product management, streamlined appointment and order systems, and intelligent AI integration for enhanced user interaction. Its multi-channel communication and notification framework facilitates real-time engagement between admins, vendors, and customers, while its comprehensive admin interfaces enable efficient oversight. By integrating external APIs and supporting bulk operations, FastAides ensures scalability and adaptability to diverse healthcare and service delivery needs.