

# Technical Documentation: Chuks Kitchen API

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**Live Link:** <https://chuks-kitchen-api.onrender.com>

**GitHub:** <https://github.com/Emmanuel8577/chuks-kitchen-API>

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## 1. Project Overview

Chuks Kitchen API is a robust backend solution for a food delivery service. It handles secure user onboarding, role-based menu management, and a validated ordering pipeline. The system is built using the **MERN** (Node.js, Express, MongoDB) stack.

## 2. System Architecture

The API follows a **Controller-Service-Model** pattern to ensure separation of concerns.

- **Authentication Layer:** JWT-based with 6-digit OTP verification.
- **Authorization Layer:** Custom middleware to distinguish between Customer and Admin roles.
- **Security:** Password hashing via bcryptjs and protection against NoSQL injection.

### 3. Database Schema

We utilized **MongoDB Atlas** for a flexible, document-oriented data structure:

Collection	Key Fields	Purpose
Users	name, email, password, role, isVerified	Stores user credentials and access levels.
Products	name, price, category, isAvailable	Stores the menu items managed by the Admin.
Orders	userId, items, total Price, status	Stores transaction history and order status.

### 4. Key Logic Implementations

#### A. The Ordering Flow (Price Integrity)

To prevent "Price Manipulation" attacks, the API does not trust the price sent from the frontend. Instead, it:

1. Receives the productId.
2. Queries the database for the *actual* current price.
3. Calculates the total on the server before saving the order.

#### B. OTP Verification

OTP codes are generated using the crypto module, stored with a 10-minute expiresAt timestamp, and delivered via SMTP.

## 5. API Endpoints (Quick Reference)

Method	Endpoint	Access	Description
POST	/api/auth/signup	Public	Register and trigger OTP.
POST	/api/auth/verify	Public	Verify OTP to activate account.
GET	/api/products	All	Fetch menu items.
POST	/api/products	Admin	Add new dish to menu.
POST	/api/orders	User	Place a new order.

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## 6. Setup and Installation

Follow these steps to get the environment running locally:

Bash

1. Clone the repository

```
git clone https://github.com/Emmanuel8577/chuks-kitchen-API.git
```

2. Enter the project directory

```
cd ChuksKitchen
```

3. Install dependencies

```
npm install
```