NBA Data Analysis Project
Deployment Plan Document

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Alkım Doryan
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1. Task Matrix

Task	Contributor	Status
Writing Project Overview	*Tunahan Oğuz*	Completed
Identifying Tools and Technologies Used	*Alkım Doryan*	Completed
Specifying Deployment Environment	*Ali Eren Kurt*	Completed
Documenting Step-by-Step Deployment Process	*Tunahan Oğuz*	Completed
Database Installation and Configuration Steps	*Beyzanur Zeybek*	Completed
Environment Variable Configuration Details	*Ali Eren Kurt*	Completed
Gunicorn Server Setup Instructions	*Alkım Doryan*	Completed
Nginx Configuration Documentation	*Beyzanur Zeybek*	Completed

Documentation of Automated Scripts and Tools	*Ali Eren Kurt*	Completed
Writing Final Project Configuration	*Tunahan Oğuz*	Completed
Preparing Environment Variables Management	*Beyzanur Zeybek*	Completed
Preparing Configuration Plan	*Alkım Doryan*	Completed

2. Deployment Overview

Overview

NBA Data Analysis is a Django web application providing real-time NBA player statistics and league insights. The app leverages nba_api for NBA data fetching and BeautifulSoup for scraping additional content. It is hosted on a web server using Gunicorn as the WSGI HTTP server, Nginx as the reverse proxy, and PostgreSQL as the database. Smartproxy is integrated to manage API requests and potential rate-limiting.

Tools Used

- Django
- nba_api
- BeautifulSoup
- PostgreSQL
- Smartproxy
- GitHub for version control
- HTML/CSS

3. Deployment Process

Step-by-Step Deployment Instructions

Installation

To set up the NBA Data Analysis project locally, follow these straightforward steps:

Prerequisites
- Ensure you have Python 3.7+ installed.
- Install PostgreSQL on your system.

Steps

1. Clone the Repository:
```bash
```

git clone https://github.com/tunahan-oguz/NBADataAnalysis.git
```

2. Navigate to the Project Directory:
```bash
cd NBADataAnalysis
```

3. Create and Activate a Virtual Environment:

- Windows:
```bash
python -m venv venv
venv\Scripts\activate
```

- macOS/Linux:
```bash
python -m venv venv
source venv/bin/activate
```

4. Install Dependencies:
```bash
pip install -r requirements.txt
```

5. Set Up PostgreSQL Database:

Open your PostgreSQL shell or use pgAdmin and execute the following commands:
```sql
CREATE DATABASE nbadb;

CREATE USER tun WITH PASSWORD '123';
ALTER ROLE tun SET client_encoding TO 'utf8';
ALTER ROLE tun SET default_transaction_isolation TO 'read committed';
ALTER ROLE tun SET timezone TO 'UTC';
GRANT ALL PRIVILEGES ON DATABASE nbadb TO tun;
```

6. Configure Environment Variables:

Update your `.env` file located in the project's root directory with the following details:
```env
DB_NAME=nbadb
DB_USER=tun
DB_PASSWORD=123
DB_HOST=localhost
```
```

DB_PORT=5432

SMARTPROXY_URL=http://gate.smartproxy.com:10001
SMARTPROXY_USERNAME=your_username_here
SMARTPROXY_PASSWORD=your_password_here

SECRET_KEY=your_django_secret_key
DEBUG=True
```

7. Apply Database Migrations:
```bash
python manage.py migrate
```

8. Run the Development Server:
```bash
python manage.py runserver
```

Access the application by navigating to `http://localhost:8000/` in your web browser.

4. Configuration Plan

Final Project Configuration

The following configurations were applied during deployment:

- **Django Debug Mode**: Disabled to enhance security.
- **Allowed Hosts**: Configured with the domain/IP address for secure access.
- **Database Configuration**: PostgreSQL database set up with user credentials and necessary privileges.
- **Security Measures**: HTTPS enforced through Nginx with SSL certificates from Let's Encrypt.
- **Proxy Setup**: Smartproxy configured to handle external NBA API requests efficiently and securely.
```