**Kenya Data Viz Documentation**

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**1. Project Overview**

* **Project Name:** Kenya Data Viz
* **Description:** A financial and macroeconomic data analysis platform for Kenya, offering both free and premium content. The platform includes various dashboards displaying data such as GDP, population, exchange rates, inflation trends, and stock prices.
* **Key Features:**
  + Freely accessible macroeconomic and financial data.
  + Pay-to-view historical data trends.
  + User authentication and membership.
  + Payment integration with Stripe and Mpesa.
* **Tech Stack:**
  + **Backend:** Django, Django Rest Framework
  + **Frontend:** React, Vite, Bootstrap
  + **Database:** SQLite
  + **Payments:** Stripe, Mpesa

**2. Getting Started**

**2.1 Prerequisites**

* **Node.js** (version >= 20.16.0)
* **Python** (version >=3.10)
* **Django** (version 5.1)
* **Package Manager:** Yarn for JavaScript packages, pip for Python packages.

**2.2 Installation**

**Backend (Django):**

1. Clone the repository:

>> git clone https://github.com/EmanuelSolver/Kenya-Data-Viz.git

1. Create a virtual environment:

>> cd Kenya-Data-Viz/serverside

>> python -m venv venv

1. Activate virtual environment

>> venv\Scripts\activate

1. Install dependencies:

>> pip install -r requirements.txt

**Requirements are:**

**asgiref==3.8.1**

**beautifulsoup4==4.12.3**

**certifi==2024.7.4**

**charset-normalizer==3.3.2**

**Django==5.1**

**django-cors-headers==4.4.0**

**django\_csp==3.8**

**djangorestframework==3.15.2**

**djangorestframework-simplejwt==5.3.1**

**idna==3.7**

**numpy==2.0.1**

**pandas==2.2.2**

**PyJWT==2.9.0**

**python-dateutil==2.9.0.post0**

**python-decouple==3.8**

**pytz==2024.1**

**requests==2.32.3**

**six==1.16.0**

**soupsieve==2.6**

**sqlparse==0.5.1**

**stripe==10.8.0**

**tabulate==0.9.0**

**typing\_extensions==4.12.2**

**tzdata==2024.1**

**urllib3==2.2.2**

1. Apply migrations:

>> python manage.py migrate

1. Run the development server:

>> python manage.py runserver

**Frontend (React):**

1. Navigate to the frontend directory

>> cd Kenya-Data-Viz/serverside

1. Install dependencies:

"@fortawesome/fontawesome-free": "^6.6.0",

"@fortawesome/fontawesome-svg-core": "^6.6.0",

"@fortawesome/free-solid-svg-icons": "^6.6.0",

"@fortawesome/react-fontawesome": "^0.2.2",

"@popperjs/core": "^2.11.8",

"@stripe/react-stripe-js": "^2.8.0",

"@stripe/stripe-js": "^4.3.0",

"axios": "^1.7.3",

"bootstrap": "^5.3.3",

"chart.js": "^4.4.3",

"chartjs-adapter-date-fns": "^3.0.0",

"chartjs-chart-financial": "^0.2.1",

"date-fns": "^3.6.0",

"formik": "^2.4.6",

"js-cookie": "^3.0.5",

"prop-types": "^15.8.1",

"react": "^18.3.1",

"react-bootstrap": "^2.10.4",

"react-chartjs-2": "^5.2.0",

"react-dom": "^18.3.1",

"react-router-dom": "^6.26.0",

"react-toastify": "^10.0.5",

"vite-plugin-compression": "^0.5.1",

"yarn": "^1.22.22",

"yup": "^1.4.0"

**2.3 Configuration**

* **Environment Variables:** Create a .env file in the root of your project for Django

**Django:**

STRIPE\_TEST\_PUBLIC\_KEY=pk\_test\_51PolQwP020xIvhG40iMPAB4HWJXw4bVXGDtKdVbu6fLdUVEYytHU0ZJ1dYnGtfYQ9rlSkbL3YEX0LpUbGOxIMgOi00aoPgLrqo

STRIPE\_SECRET\_KEY=sk\_test\_51PolQwP020xIvhG4YMkjhqHxIuXCg0wXiPnL1aWzG8gGb8fjUxe6ly6msFuDvjP340IexqgqSkOXZDbEkdmjtdB000CsNdvea5

CONSUMER\_KEY=1nguj6gd0JVeAGRBS3NZih8IL79lUvNb

PASS\_KEY=bfb279f9aa9bdbcf158e97dd71a467cd2e0c893059b10f78e6b72ada1ed2c919

BUSINESS\_SHORT\_CODE=174379

CONSUMER\_SECRET=AzckkCq2QfTNtRjt

DEBUG=True

**4. Usage**

* 1. **Navigating the Platform**
* **Home Page:** Provides an overview of Kenya Data Viz providing users with a header with tabs which users can navigate to Sign up, Sign in, Macroeconomics or Financials. The last 2 are restricted to only logged in users.
* **Main Dashboard:** After successful login by the user, he is redirected to the main dashboard which contains a sidebar.
  + **Profile:** Provides simple user information, name, email, location
  + **Dashboard1:** Displays nominal GDP, per capita gdp and population charts.
  + **Dashboard2:** Displays USD/KES exchange rates.
  + **Dashboard3:**
    - D3-Page1: Compares current vs. prior month's inflation (free).
    - D3-Page2: Displays historical inflation trends (paid).
  + **FinancialAnalysis Tab:**
    - FA-Page1: Shows Safaricom's share prices from July 2024 (free).
    - FAPage2: Shows historical prices prior to July (paid).

**4.2 User Registration & Authentication**

* A new user to Kenya Data Viz registers by clicking Sign Up tab on the header if a user has an account, they go ahead and click the Sin in tab at the header and login with their username and password
* Users are authenticated using jsonwebtoken (JWT)
* Users can View profile information on the Profile page by clicking Profile button on the sidebar.

**4.3 Payments & Subscriptions**

* To access paid content, users can purchase a subscription via Stripe or Mpesa by clicking ‘Be a full member’ button when the head to locked pages on the sidebar.
* Users using debit/credit card give the card details and Ksh.100 is deducted from their account upon successful payment.
* Users who pay via Mpesa, provide only their Mpesa number and an STK push is made to their phone, the only thing they need to do is provide their Mpesa pin.
* Users can use discount coupons to access premium content. A coupon code is given to them.

**5. API Documentation**

* **Authentication:**
  + POST /accounts/token/ - Obtain JWT token.
  + POST /accounts/token/refresh/ - Refresh JWT token.
* **Macroeconomic Data:**
  + GET / macroeconomics /gdp/ - Retrieve GDP data.
  + GET /macroeconomics/population/ - Retrieve population data.
  + GET / macroeconomics /exchange-rates/ - Retrieve exchange rate data.
* **Financial Data:**
  + GET /financialanalysis/share-prices/ - Retrieve Safaricom share prices.