

Predict_Xplore – Setup Guide

Predict_Xplore consists of a **Django backend** and a **React (Vite) frontend**. Follow the steps below to set up the project locally.

Prerequisites

Ensure the following are installed on your system:

- **Python** ≥ 3.10
 - **Node.js** ≥ 16
 - **npm** or **yarn**
 - **Git**
 - **Docker Desktop** (required)
 - **PostgreSQL** (used in production; optional for local setup)
 - **virtualenv** (recommended)
-

Clone the Repository

```
git clone https://github.com/Predict-Xplore-IIT-B/Predict-Xplore.git
```

```
cd Predict-Xplore
```

Repository Structure

```
Predict-Xplore/
|
└── backend/
    └── Xplore/      # Django backend
|
└── frontend/     # React frontend (Vite)
```

Backend Setup (Django)

Step 1: Navigate to Backend

```
cd backend/Xplore
```

Step 2: Create & Activate Virtual Environment

```
python -m venv venv
```

Activate it:

- macOS / Linux:
source venv/bin/activate
- Windows:
venv\Scripts\activate

Step 3: Install Dependencies

pip install -r requirements.txt

If requirements.txt is missing or incomplete, install manually:

```
pip install django djangorestframework social-auth-app-django \
python-decouple google-api-python-client google-auth-httplib2 \
google-auth-oauthlib
```

Step 4: Grad-CAM Dependency Check

Ensure this **local wheel file** exists:

backend/Xplore/libs/grad_cam-1.5.5-py3-none-any.whl

If missing, add it before proceeding.

Step 5: Generate Django Secret Key

```
python -c "from django.core.management.utils import get_random_secret_key;
print('DJANGO_SECRET_KEY=' + get_random_secret_key())"
```

OR

python generate_secret.py

Step 6: Create .env File

Create a .env file inside backend/Xplore/:

```
EMAIL_ID=""
EMAIL_PASS=""
GOOGLE_OAUTH_CLIENT_ID=
GOOGLE_OAUTH_CLIENT_SECRET=
DJANGO_SECRET_KEY=""
```

⚠ Important:

Fill all required values **before starting the server.**

Step 7: Apply Migrations

```
python manage.py makemigrations
```

```
python manage.py migrate
```

Step 8: Create Superuser (Optional)

```
python manage.py createsuperuser
```

Step 9: Run Backend Server

```
python manage.py runserver
```

Backend runs at:

<http://localhost:8000/>

Frontend Setup (React + Vite)

Step 1: Open a New Terminal

```
cd frontend
```

Step 2: Install Dependencies

```
npm install
```

Step 3: Start Frontend Server

```
npm run dev
```

Frontend runs at:

<http://localhost:5173/>

Google OAuth Setup

Step 1: Create Google Cloud Project

- Visit [Google Cloud Console](#)
 - Create a new project (e.g., *Predict Xplore*)
-

Step 2: Configure OAuth Consent Screen

- Go to **APIs & Services → OAuth consent screen**
- Choose **External**
- Fill:
 - App name
 - Support email
 - Developer contact info

- Save
-

Step 3: Create OAuth Client ID

- Go to **APIs & Services → Credentials**
- Click **Create Credentials → OAuth Client ID**
- Select:
 - **Application type:** Web application
 - **Name:** PredictXplore

Authorized JavaScript Origins

http://localhost:8000

http://localhost:5173

Authorized Redirect URI

http://localhost:8000/auth/complete/google-oauth2/

 Changes may take **5 minutes to a few hours** to reflect.

Step 4: Configure Backend Credentials

- Copy values into .env:

GOOGLE_OAUTH_CLIENT_ID=your_client_id

GOOGLE_OAUTH_CLIENT_SECRET=your_client_secret

- Download credentials.json
- Paste its content into:

backend/util/credentials.json

5 Gmail App Password Setup (For Email / OTP)

Step 1: Enable 2-Step Verification

- Go to myaccount.google.com/security
- Enable **2-Step Verification**

Step 2: Generate App Password

- Go to **Security → App passwords**
- Select:
 - App: Mail

- Device: Other (e.g., DjangoApp)
- Generate password (16 characters)

Step 3: Update .env

EMAIL_ID="yourgmail@gmail.com"

EMAIL_PASS="abcdefghijklmnopqrstuvwxyz"

⚠ Notes

- Never use your real Gmail password
 - Regenerate app password if Gmail password changes
-

6 🚀 Test the Application

- Frontend:
 - <http://localhost:5173/>
 - Try [Login / OTP / Google Auth](#)
 - Django Admin:
 - <http://localhost:8000/admin>
-

7 💬 Troubleshooting

Issue	Solution
redirect_uri_mismatch	Ensure exact redirect URI is added in Google Console & credentials.json
invalid_grant (Gmail API)	Delete token.json and re-authenticate
ModuleNotFoundError	Activate virtual environment
React API errors	Check Django CORS configuration
Reset database	<code>python manage.py flush</code>

🐳 Docker Requirement

- **Docker Desktop must be installed and running**
- Required for containerized services used in the project