GIS-Python-First-Repo (Original Files Only)

This repository is a clean, minimal version that contains **only your original work** from the GeoNames → GeoPackage pipeline. No extra scripts, no CI, no additional automation — just the essentials you actually created today.

Use this as your **first GIS + Python GitHub repo**, neat and professional.

📁Repository Structure

```
gis-python-first-repo/
├── README.md
├── requirements.txt
├── .gitignore
│
├── notebooks/
│   └── web_api.ipynb        # your original notebook
│
├── output/                  # empty (added to .gitignore)
└── data/                    # DO NOT commit large files
    └── README.md            # instruction on where to download US.txt
```

📝README.md (for your repo)

```
# GIS Processing with Python – My First GIS Project

This repository contains my first hands-on GIS workflow using Python.
It demonstrates how to:

- Read the **GeoNames** dataset (tab-delimited TSV)
- Filter hypsographic features (mountains, hills – feature class 'T')
- Convert coordinates into spatial geometry using **GeoPandas**
- Export results as a **GeoPackage (.gpkg)** or **Shapefile (.shp)**

Everything you see here is based on the notebook I built while learning GIS
today.

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## 📌 Notebook Included
- `notebooks/web_api.ipynb`

This is the exact notebook I used to:
- Load GeoNames data
```

```
- Filter mountains
- Create geometry
- Export spatial data

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## 📦 Requirements
Install packages using:

```bash
pip install -r requirements.txt
```

Minimal dependencies:

```
geopandas
pandas
fiona
shapely
pyproj
```

📂Data

Due to file size, the GeoNames dataset is **NOT included**.
Download it from:

https://download.geonames.org/export/dump/

Example expected file:

```
data/US.txt
```

Add large datasets to `.gitignore`.

📩How to Use

Open the notebook:

```
jupyter notebook notebooks/web_api.ipynb
```

Run all cells to: - Load your dataset - Filter mountain features - Build GeoDataFrame - Export to a spatial format

Output will be written to the `output/` folder.
```

💡 What I Learned

This repo showcases my understanding of: - Reading and cleaning geospatial data - Converting coordinate pairs into geometry - Using **GeoPandas** efficiently - Exporting GIS formats for real-world use

This serves as the base for more advanced GIS work in Python.

```
---

## 📄 requirements.txt
```

geopandas pandas fiona shapely pyproj

```
---

## 🗑️ .gitignore
```

pycache/ .ipynb_checkpoints/ *.pyc output/ data/*.txt venv/ .env

```
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## 📄 data/README.md
```

This folder contains instructions only.
Do NOT add large datasets here.

Download GeoNames files from:
https://download.geonames.org/export/dump/

Place the file like so: data/US.txt ```

Your minimal, clean repo is ready.
Just create these files locally → `git init` → push to GitHub.