# 15‑Minute City Accessibility · Cyprus Case Study

This project quantifies walkable 15‑minute access to eight essential service types (food retail, healthcare, education, green space, etc.) for Cyprus’s four largest cities: Nicosia, Limassol, Larnaca, and Paphos.

The entire analysis lives in one Python script, plus a CSV input and the resulting output tables. No extra modules, no package refactor.

## 1  Quick‑start (pip)

# 1  Clone this repo  
$ git clone https://github.com/<your‑user>/15min‑cyprus.git  
$ cd 15min‑cyprus  
  
# 2  Create an isolated Python environment (optional but recommended)  
$ python -m venv .venv  
$ source .venv/bin/activate # Windows: .\.venv\Scripts\activate  
  
# 3  Install the exact dependencies  
$ pip install -r requirements.txt  
  
# 4  Run the full pipeline (generates all CSVs & figures)  
$ python CODE.py

⚠️ **Important:** Before running the script, open CODE.py and update the file paths at the top of the file to reflect the correct local paths on your machine (e.g., the location of the population data and where results should be saved).

All outputs are written to results/ by default (folder is created on first run).

## 2  Repository structure

15min‑cyprus/  
├── README.md  
├── requirements.txt # pinned package versions  
├── CODE.py # main analysis script  
├── data/  
│ └── raw/ # input layers (Population grid, OSM extracts)  
├── results/ # output CSVs & SHPs (auto‑generated)  
└── .gitignore # keeps large raw data out of Git

## 3  Data sources

| Layer | Source | Licence |
| --- | --- | --- |
| Population grid (1 km, 2020) | WorldPop | CC BY‑4.0 |
| Street network & POIs | OpenStreetMap | ODbL 1.0 |

## 4  Outputs & reproducibility check

Running the script should create

**City-Level Accessibility Files (CSV)**

* nicosia\_15min\_score\_pop.csv
* larnaca\_15min\_score\_pop.csv
* limassol\_15min\_score\_pop.csv
* paphos\_15min\_score\_pop.csv

Each file contains population-weighted accessibility scores for 15-minute city indicators per hexagonal cell.

**National Summary File**

* cyprus\_accessibility\_pop\_15min\_index.csv  
  Aggregated national-level indicators comparing all four cities.

**Geospatial Outputs (per city)**

Each city folder also contains a full shapefile set for visualization and spatial operations:

* .shp, .shx, .dbf, .prj, .cpg files  
  (e.g., nicosia\_15min\_score\_pop.shp, larnaca\_15min\_score\_pop.shp, etc.)

**Boundary Files (GeoJSON)**

Used as input or reference boundaries for processing:

* nicosia\_boundary.geojson
* larnaca\_boundary.geojson
* limassol\_boundary.geojson
* paphos\_boundary.geojson

## 5  How to cite

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## 6  Licence

No license has been applied to this repository.

All rights reserved by the author.

## 7  Contributing

Contributions are welcome!  
If you plan to make substantial changes, please open an issue first to discuss your proposal.

You can:

* Report bugs or suggest features via GitHub Issues.
* Submit improvements through Pull Requests (PRs).
* Cite or reuse responsibly (see Section 5 and 6 for terms).

*Last updated : 09 Jul 2025*