Project Kickoff Session

Exploration and Brainstorming with GPS, Bikes, and Public Transport Data

Session Objectives

- Start working collaboratively in project groups
- Familiarize with datasets (GPS, Bikes, PT) and tools
- Explore data, raise questions, sketch first ideas
- End the session with a tangible outcome per group
- Share insights and feedback across groups

Session Agenda (3h)

- 8:50–9:05 Introduction & Goals
- 9:05–9:30 Group Formation & Dataset Familiarization
- 9:30–10:30 Group Work: Brainstorming + First Data Deep Dive
- 10:30–11:45 First Prototyping: Code or Idea Sketches
- 11:45–12:25 Presentations & Cross-feedback
- 12:25–12:30 Wrap-up

Your Group's Goal Today

- Choose a dataset to start with
- Explore its structure and contents
- Brainstorm possible research directions
- Sketch early analyses or visualizations
- Present your findings and ideas to the class

Mini-Exploration Checklist

- 🚗 How many entries / users / vehicles?
- 🕐 What is the time span and resolution?
- 🧭 Are there missing values / anomalies?
- 📊 What are 3 patterns or surprises you see?
- 🔧 What cleaning or preprocessing is needed?

Inspiration: Project Directions

-  Mobility Patterns: Temporal/Spatial dynamics
-  User Segmentation: Commuters vs Tourists, etc.
-  Anomalies: Events, disruptions, strikes
-  Multimodal Comparison: PT vs Bikes vs GPS
-  OD Analysis: Where do flows originate and end?
-  Sustainability Proxy: CO_2 savings estimations

How to Work Effectively in a Team

-  Discuss together, don't rush to code individually
-  Think aloud: hypotheses, goals, challenges
-  Document your steps and questions clearly
-  Start with simple plots or clustering
-  Prepare a short, clear presentation for end of session

Mini Presentation – What to Share

- 🔍 Dataset(s) explored and key characteristics
- 💡 One idea or research question
- 📈 One first result or visualization
- 📌 Plans for next steps
- 🤝 Optional: what you’d like help with

Expected Outcome of Today

- Each group produces a short output (code or slide)
- Each group presents for 5–6 minutes
- You gain early feedback from peers and instructor
- Class builds a shared understanding of datasets
- You feel confident about your project direction

Good Practices for Today’s and Tomorrow’s Work

- 👥 Collaboration
- - Talk before you code: align on goals and split tasks
- - Use shared files or notebooks to track ideas and decisions
- - Rotate roles (e.g., coder, explorer, documenter)

- 💻 Code Hygiene
- - Write clear, modular functions – avoid long monolithic scripts
- - Comment your code: explain what, but especially why
- - Use consistent naming conventions and clean formatting

Good Practices for Today’s and Tomorrow’s Work

- 📜 Documentation
- - Document steps taken, decisions made, and questions raised
- - Create a README or project log (even a simple .md or .txt)

- 🚚 Version Control
- - Use Git/GitHub from the start – even simple commits matter
- - Push your first notebook or script today!
- - Commit meaningful changes with clear messages

- 🎯 Reproducibility & Sharing
- - Keep results reproducible (seed random processes, save configs)
- - Export plots or summary tables for your presentations
- - Clean up notebooks: remove unused code, restart & run all