



LUND
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Module 2: Introduction to low-code Python programming

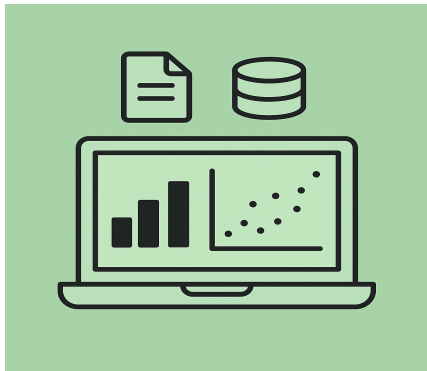
Lesson 2.2: Python and AI-aided data
analysis

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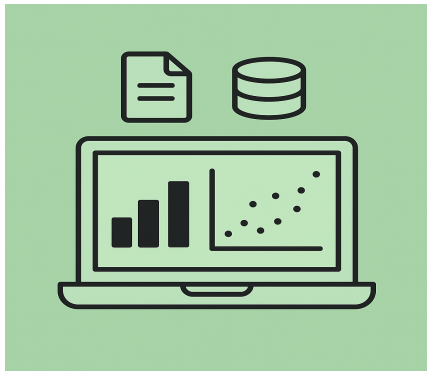
Python for Social Science Data Analysis

- Descriptive inferential exploratory overview
- Highlight quantitative social methods
- Introduce text image analysis
- Python enables flexible scaling
- Use pandas matplotlib scikit



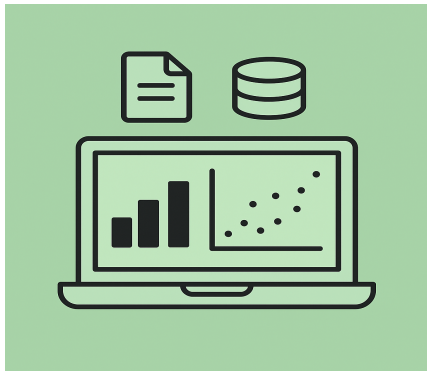
AI-Aided Quantitative Analysis with Python

- LLMs generate statistical code
- Query data with prompts
- Automate tests and models
- Lower barriers for newcomers
- Balance manual control AI



AI-Aided Computational Content Analysis

- LLMs classify summarize topics
- Image models study visuals
- Merge text visual features
- Automate entity theme detection
- Scale massive corpus analysis



Low-Code Data Analysis with Tables

- View data with pandas
- Filter group summarize quickly
- Compare high-code low-code
- AI generates interprets tables
- Use pandasgui datatable
ChatGPT



A stylized icon of a data table with 5 columns and 5 rows. The top row is highlighted in light green and contains a funnel icon in the fifth column. The bottom row is highlighted in light yellow and contains a bar chart icon in the fifth column. All other cells contain a horizontal line.

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Data Transformations with AI Assistance

- Select variables via prompts
- Filter cases by conditions
- Aggregate summaries by groups
- Contrast pandas and AI queries
- Learn with interactive AI



Low-Code Data Analysis with Graphs

- Create basic bar line hist
- Contrast univariate bivariate plots
- AI suggests suitable charts
- Use matplotlib seaborn plotnine
- Reveal trends with little setup



Multivariate and Interactive Graphs

- Show multivariable relationships
- Use scatter heatmap bubble
- Add interactivity with plotly altair
- AI refines layouts variables
- Explore patterns dynamically

