



LUND
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Module 2: Introduction to low-code Python programming

Lesson 2.1: AI-aided and low-code
programming

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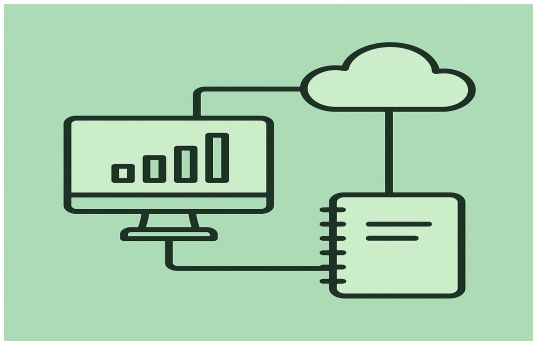
Open Science Methods

- Champion reproducible research
- Foster global collaboration
- Share data code openly
- Leverage open source tools
- Boost integrity innovation



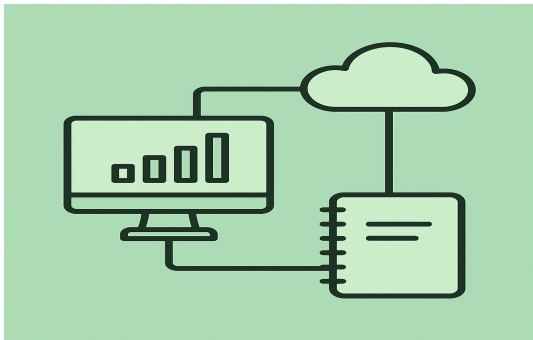
Python Environments: Local, Cloud, Notebooks

- Install configure locally
- Skip setup with cloud
- Notebook code plus docs
- Scale resources via cloud
- Run code with markdown



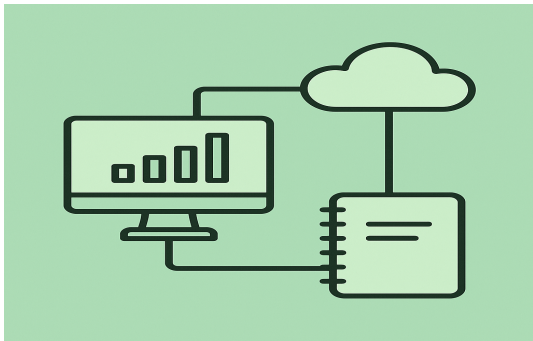
The Concept of Jupyter Notebooks

- Enable stepwise code runs
- Combine code text visuals
- Support iterative debugging docs
- Serve teaching and research
- Differ from script workflows



Google Colab Notebook Interface

- Cloud Jupyter plus GPUs
- Code and text cells
- Auto-save to Google Drive
- Collaborate and share easily
- Launch projects without setup



What Is Programming and Python Programming

- Write instructions for computers
- Use readable versatile Python
- Use for web data automation
- Leverage rich Python libraries
- Fit beginners and pros



Python Use Cases: Low vs. High-Code

- Low-code speeds analysis
- High-code adds customization
- Social sciences exploit low-code
- CS projects demand high-code
- Python supports both modes



Basic Python Syntax: Variables, Data Objects, Loops

- Variables store typed data
- Lists dicts tuples structure data
- Loops automate repetitive work
- Syntax stays simple readable
- Basics enable advanced skills

