RICE | BUSINESS
Jones Graduate School of Business

Local Execution: Python, Claude Code, VS Code

MGMT 675: Generative AI for Finance

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What is VS Code?

- Visual Studio Code: a free code editor from Microsoft
- Works on Windows, Mac, and Linux
- Lightweight but powerful
- Huge ecosystem of extensions
- We'll use it primarily as a user interface for Claude Code

VS Code + Claude Code vs Colab

Colab

- Browser-based
- No installation
- Google Drive storage
- Google Gemini AI

VS Code

- Desktop application
- Local file access
- Claude Code AI
- More powerful tools

Both support Jupyter notebooks!

Install from Course Site

- Python 3.12
- VS Code with extensions (Python, Jupyter, Claude Code)
- Git and GitHub CLI
- Node.js
- Claude Code (need Anthropic account and authentication)
- GitHub Copilot (need Github account and authentication)
- Koyeb CLI (eventually need Koyeb account)

Software Installation Page

Opening a Folder in VS Code

- VS Code works with **folders**, not individual files
- File → Open Folder → select your project folder
- The folder appears in the Explorer sidebar (left panel)
- All files in the folder are accessible
- This is your workspace for a project

Tip: Create a dedicated folder for course work

Jupyter Notebooks in VS Code

Same concept as Colab but local execution

- Code cells and text cells
- Run cells with Shift+Enter or click Run button
- Output appears below each cell
- No browser or internet required

Try It: Open a Notebook

1. Download the notebook from the course site
2. File → Open File → select the notebook
3. Select a Python kernel from the top-right picker (like Colab's runtime, must be selected before code can be run)
4. Run the cells

Download objects.ipynb

Other VS Code Features

Useful Panels

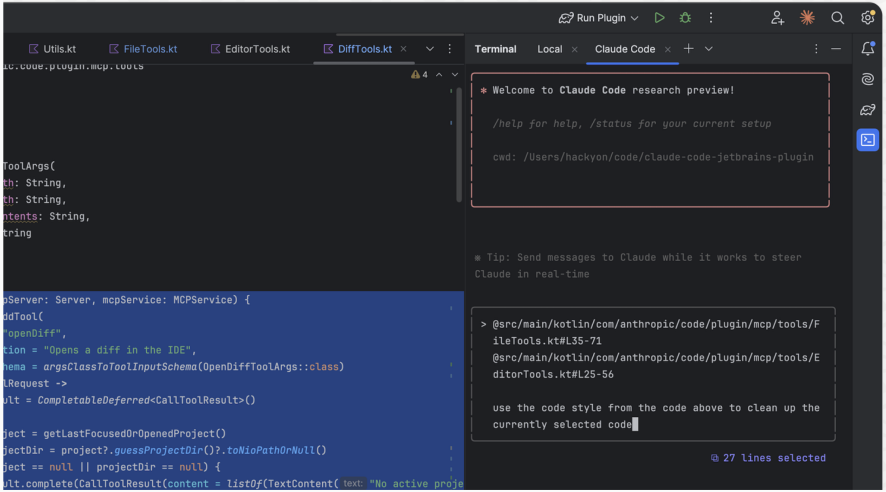
- **Explorer**: View → Explorer (or click folder icon)
- **Terminal**: View → Terminal
- **Command Palette**: Ctrl+Shift+P

Dark Mode

- File → Preferences → Theme → Color Theme
- Choose a dark theme

VS Code has many features—you won't need most of the menu items or command palette options for this course.

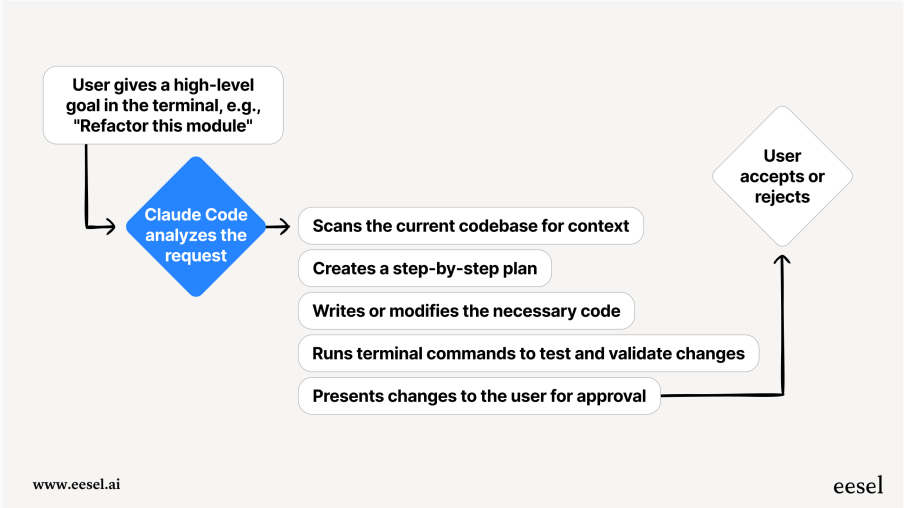
The Claude Code Interface



Opening Claude Code

- **Spark icon**: Click the spark icon in the top-right corner of any open file
- **Status bar**: Click "Claude Code" in the bottom-right corner
- **Command Palette**: Ctrl+Shift+P → type "Claude Code"
- **Keyboard shortcut**: Cmd+Esc (Mac) / Ctrl+Esc (Windows)

How Claude Code Works



Chatting with Claude

- Type your question or request in the prompt box
- Press Enter to send
- Claude can see your selected code automatically
- Use `@filename` to reference specific files
- Claude asks permission before making changes

What Claude Code Can Do

- Explain code and answer questions
- Write new code from descriptions
- Fix errors and debug problems
- Edit files (with your approval)
- Run commands in the terminal
- Create and modify Jupyter notebooks

Reviewing Changes

- Claude shows changes in a side-by-side diff view
- Green = additions, Red = deletions
- You can **Accept** or **Reject** each change
- Or tell Claude what to do differently
- Changes are not applied until you approve them

Using Claude with Notebooks

- Ask Claude to create a notebook for you
- Claude can add, edit, or delete cells
- Select code and ask Claude to explain it
- Request data visualizations or analysis
- Claude can fix errors in your notebook code

Using Claude with Scripts

- If Claude is writing the code, you don't really need notebooks.
- It is easier for Claude to write Python scripts, which are just text files containing code.
- A Python script can be executed with `python scriptname` in a terminal.
- Claude can run terminal commands, so it can execute the scripts it writes.

Other AI Coding Tools

You need to try them to understand the differences

- VS Code + Claude Code is one of several options
- Three other popular tools:
  - **Cursor**: AI-optimized editor (fork of VS Code)
  - **GitHub Copilot**: Extension for VS Code and other IDEs
  - **Google Antigravity**: Web-based editor (fork of VS Code)
- Each has different strengths and workflows
- Note: You can use Copilot **and** Claude Code together in VS Code

Exercise: Estimating Betas

Ask Claude Code to compute WMT's excess returns and run a regression to estimate its beta. Ask for a Word doc containing a scatterplot of the data with the regression line and a discussion of why the beta is what it is.

Data for the beta exercise

Exercise: Aggregating Spreadsheets

The zip file aggregation.zip contains multiple Excel workbooks, each containing a table. Some tables are missing some columns and the names of some of the columns vvary somewhat across the tables. Use Claude Code to combine the tables into a single table, including all columns, and reconciling the varying names.

Zip file for the table aggregation exercise