Claude Code and Claude Skills (and some NotebookLM) in MGMT 638

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AI Working Group

Claude Code (Introduced for Windows July 2025)

- Uses Claude Opus or Claude Sonnet as LLM
- Works beside you on your computer, providing information and assistance
  - Can read, edit, and create files on your computer (no manual uploading and downloading)
  - Can search the web and download files
  - Can run terminal commands, including running python scripts and compiling LaTeX docs
  - Can use Python to create Excel, Word, and PowerPoint docs
  - Can create and edit Jupyter notebooks with code, markdown, and visualizations

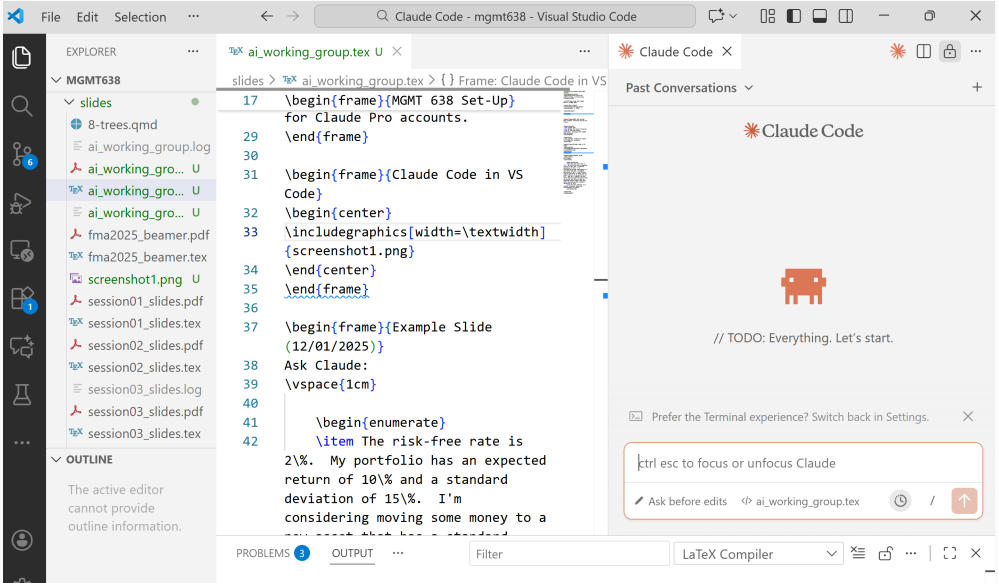
MGMT 638 Set-Up

Each student installed (during 1st class):

- Claude Code
- Python and select libraries
- VS Code and select extensions, including the Claude Code extension
- Access token from data-portal.rice-business.org, saved in .env (text) file

I pay $20 per student per month for Claude Pro accounts.

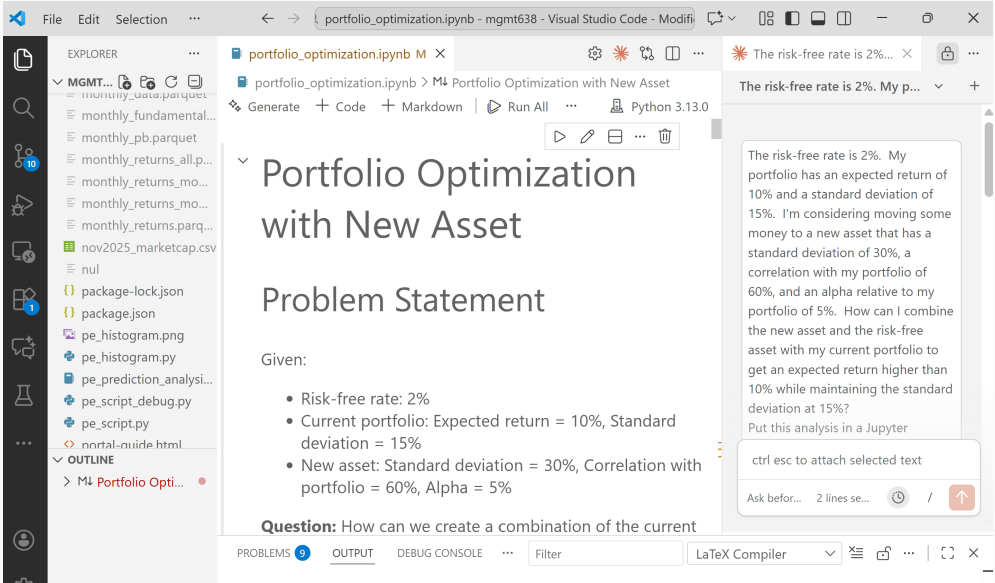
Claude Code in VS Code



Ask Claude:

1. The risk-free rate is 2%. My portfolio has an expected return of 10% and a standard deviation of 15%. I'm considering moving some money to a new asset that has a standard deviation of 30%, a correlation with my portfolio of 60%, and an alpha relative to my portfolio of 5%. How can I combine the new asset and the risk-free asset with my current portfolio to get an expected return higher than 10% while maintaining the standard deviation at 15%?
2. Put this analysis in a Jupyter notebook, doing the calculations in Python.

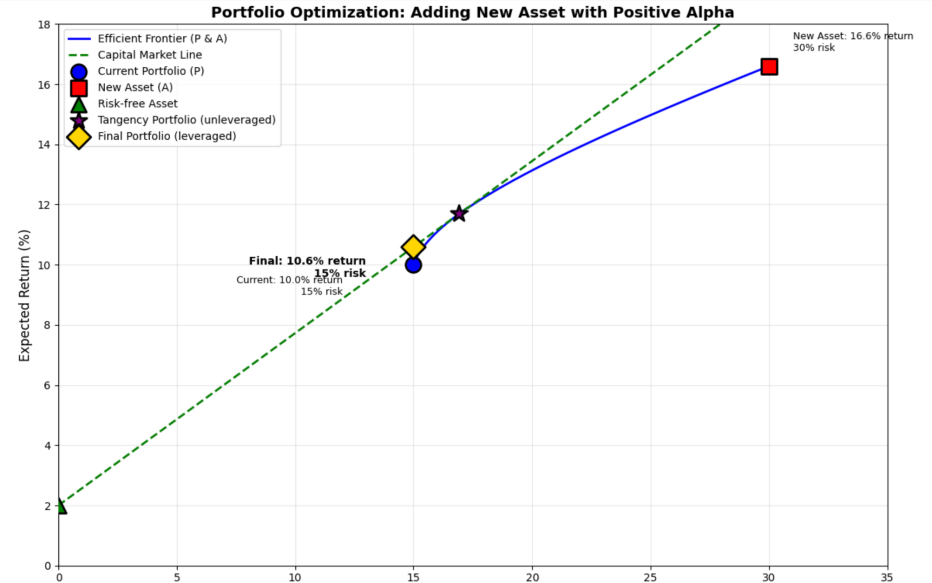
Jupyter Notebook in VS Code



```
================================================
FINAL PORTFOLIO ALLOCATION
================================================

Allocation:
  Current portfolio (P):    65.9%
  New asset (A):            22.7%
  Risk-free asset:          11.4%
  ──────────────────────────────────────────────
  Total:                   100.0%
```

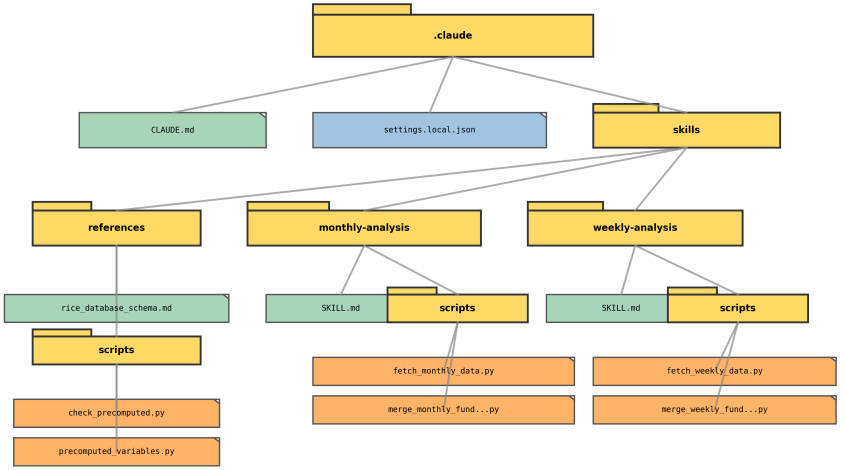
Scrolling Further Down



Claude Skills (Introduced 10/16/2025)

- Skill = text file (extended prompt) read by Claude when needed
- Can instruct to run Python scripts for repeatable performance
- Stored in `.claude/skills/`
- Anthropic provides xlsx, docx, pptx, skill-creator, and others

.claude Structure for Skills I Created



MGMT 638 Slide 12/01/2025

Tell Claude:

Use your weekly-analysis skill to create a weekly dataset containing ticker, return, momentum, price-to-book, sector, industry, size, and marketcap and the following variables from 10K's: ROE, 1-year percent growth in assets, gross margin, asset turnover, and leverage. I want all stocks and all dates after Jan 1, 2010.

More Claude Prompts

After running a machine learning and backtesting script to compute decile returns from sorts on predicted returns, we told Claude:

1. Read portfolio_returns.csv. What are the mean returns of the portfolios?
2. Plot the cumulative returns of the portfolios.
3. Plot the drawdowns of the portfolios. What is the maximum drawdown of each?
4. Get the five Fama-French factors from Ken French's data library using pandas datareader and compute the five-factor alpha of each portfolio.

MGMT Slide 11/10/2025 (NotebookLM)

- PDF: *Getting Paid to Hedge*, Kapadia, Ostdiek, Weston, and Zekhnini, 2019
- Video: *Getting Paid to Hedge*, Kapadia, Ostdiek, Weston, and Zekhnini, 2019
- NotebookLM

We usually have one of these each class session.