RICE | BUSINESS
Jones Graduate School of Business

Using AI inside an IDE

MGMT 675: Generative AI for Finance

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VS Code Basics

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!

Course Install Files

- Python 3.12, VS Code, Git, Quarto, TinyTeX, Node.js, Claude Code
- VS Code extensions: Python, Jupyter, Claude Code, Quarto, LaTeX Workshop, GitHub Copilot
- Command line interfaces for GitHub, Koyeb

Class Software Installer

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

Navigating VS Code

Activity Bar (Left Edge)

- **Explorer** (folder icon) — browse and open files
- **Search** (magnifying glass) — find text across files
- **Extensions** (blocks icon) — install add-ons
- Click an icon to toggle its panel open/closed

Essential Actions

- **Open file**: click it in Explorer, or Ctrl+O
- **Open folder**: File → Open Folder
- **Open terminal**: Ctrl+` (backtick)
- **Command Palette**: Ctrl+Shift+P — search any command

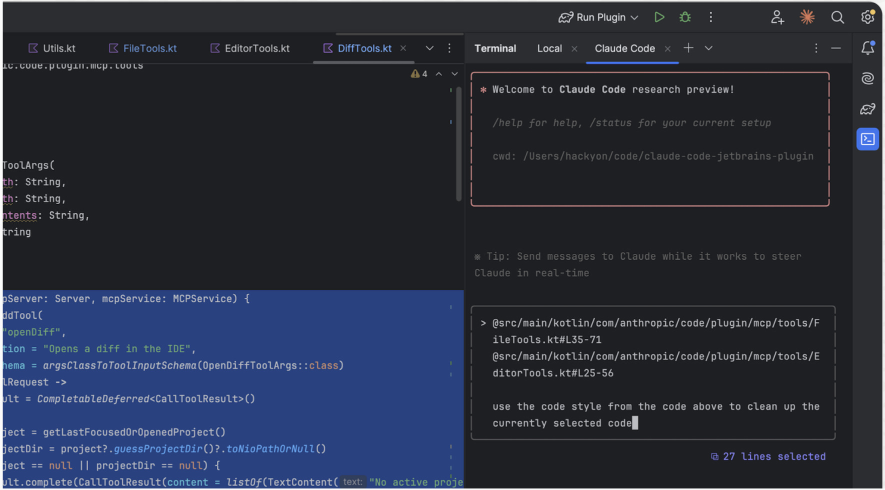
VS Code has many features—you won't need most of them for this course. Focus on Explorer, Terminal, and Claude Code.

VS Code Resources

- Official Tutorial: Get Started with VS Code — interactive walkthrough
- Introductory Videos — short official videos (7 min setup, 3 min editing, 4 min tips)
- Learn VS Code in 7 Minutes — Microsoft Learn video
- VS Code Documentation — full reference

You don't need to master VS Code. Just learn to open folders, open files, and use the terminal. Claude Code handles the rest.

The Claude Code Interface



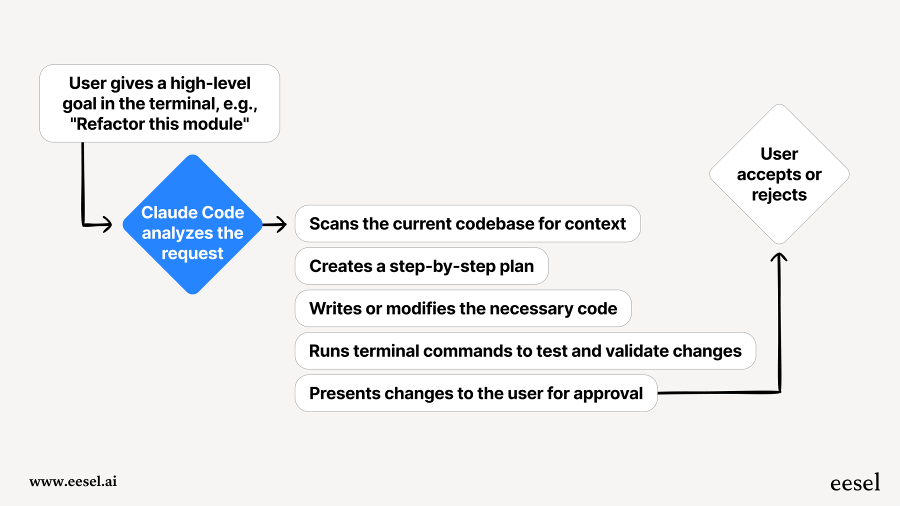
```
ic.code.plugin.mcp.tools

ToolArgs(
th: String,
th: String,
ntents: String,
tring

pServer: Server, mcpService: MCPService) {
ddTool(
"openDiff",
tion = "Opens a diff in the IDE",
hema = argsClassToToolInputSchema(OpenDiffToolArgs::class)
lRequest ->
ult = CompletableDeferred<CallToolResult>()

ject = getLastFocusedOrOpenedProject()
jectDir = project?.guessProjectDir()?.toNioPathOrNull()
ject == null || projectDir == null) {
ult.complete(CallToolResult(content = listOf(TextContent( text: "No active proje
```

```
✻ Welcome to Claude Code research preview!

  /help for help, /status for your current setup

  cwd: /Users/hackyon/code/claude-code-jetbrains-plugin


※ Tip: Send messages to Claude while it works to steer
Claude in real-time

> @src/main/kotlin/com/anthropic/code/plugin/mcp/tools/F
  ileTools.kt#L35-71
  @src/main/kotlin/com/anthropic/code/plugin/mcp/tools/E
  ditorTools.kt#L25-56

  use the code style from the code above to clean up the
  currently selected code

                                       ⧉ 27 lines selected
```

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



User gives a high-level goal in the terminal, e.g., "Refactor this module"

Claude Code analyzes the request

Scans the current codebase for context

Creates a step-by-step plan

Writes or modifies the necessary code

Runs terminal commands to test and validate changes

Presents changes to the user for approval

User accepts or rejects

www.eesel.ai

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, Python scripts, LaTeX files, . . .

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.

Exercise: Estimating Betas

- In VS Code, open the folder containing betas.xlsx (or copy it into the folder currently open in VS Code)
- 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 Exercise

Exercise: Aggregating Tables

- Download aggregation.zip into the folder open in VS Code.
- Extract all the workbooks in the zip file.
- Each workbook contains a table with similar data. Some tables are missing some columns and the names of some of the columns vary somewhat across the tables. Ask Claude Code to combine the tables into a single table, to include all columns, and to reconcile the varying names.

Data for Exercise

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
- **Common architecture**: All these tools share the same pattern—an LLM with access to your files and the ability to execute code
- Note: You can use Copilot **and** Claude Code together in VS Code

AI for Class Preparation and Research

Some Claude Code prompts:

- Using this data . . . compute these statistics . . . and put them in a latex table like this . . . and insert them in my paper in . . .
- Using this data . . . generate figures like this . . . and insert them in . . .
- I don't like the way I worded things in this paragraph . . . Please clean it up.
- I want to add a slide to my lecture about . . . It should say . . . in bullet points
- Use the Google API to get an image that represents . . . and insert it into . . .
- Make this edit to . . . and then render, commit, and push to update this website . . .
- Build my latex file. Find and fix any errors.
- Using sympy, simplify this integral . . .