**✅ FULL LEARNING + EXECUTION PLAN**

We’ll divide it into **6 Key Steps**, with priority content and tools:

**🧭 STEP 1: Understand Compound Protocol and DeFi Lending Basics**

🔥 Learn the logic of "supply", "borrow", "repay", "liquidation", and what makes a wallet high- or low-risk.

**🎯 Learning Goals:**

* What is Compound?
* How does DeFi lending work?
* What is a liquidation?
* What user behavior is risky/safe?

**📚 Resources:**

* 📘 Compound Protocol V2 Official Docs
* 📺 [YouTube (8 min): What is Compound? (DeFi Lending)](https://www.youtube.com/watch?v=gn_vzJ9S4n8)
* 📺 [YouTube (10 min): Compound Finance Lending Explained](https://www.youtube.com/watch?v=clA3NGVzTDY)

**⏱ Time to learn: 45–60 min**

**⚙️ STEP 2: Learn How to Access On-Chain Data from Compound**

🔥 Learn how to use **The Graph** to get wallet transaction data (no need to run a blockchain node).

**🎯 Learning Goals:**

* What is **The Graph**?
* How to query Compound data with GraphQL
* How to use Python to automate these queries

**📚 Resources:**

* 📘 The Graph Protocol Basics (Official)
* 📘 Compound V2 Subgraph Explorer
* 📺 [YouTube: How to Use The Graph with Python (GraphQL + API)](https://www.youtube.com/watch?v=LCaGaL07bkg)
* 📘 GraphQL Cheat Sheet

**⏱ Time to learn: 1.5–2 hours**

**🧪 STEP 3: Learn Feature Engineering for DeFi Risk**

🔥 Learn how to turn transaction history into features like supply, borrow, liquidation, repay ratio, etc.

**🎯 Learning Goals:**

* What features show wallet risk?
* How to compute these from raw on-chain data
* Normalize data for scoring

**📚 Resources:**

* 📘 Intro to Feature Engineering – TowardsDataScience
* 📘 Feature Normalization Guide
* 📺 [YouTube: Feature Engineering Explained (10 min)](https://www.youtube.com/watch?v=3tu1HxogUQY)

**⏱ Time to learn: 1.5 hours**

**🧮 STEP 4: Learn Wallet Risk Scoring Logic**

🔥 Learn how to assign risk scores from 0–1000 using weighted formulas.

**🎯 Learning Goals:**

* Define weights based on feature importance
* Use MinMaxScaler or manual normalization
* Build a custom scoring formula

**📚 Resources:**

* 📘 Weighted Scoring Explained (Medium)
* 📘 MinMaxScaler — Scikit Learn
* 📺 [YouTube: How to Build a Scoring Model](https://www.youtube.com/watch?v=fV1MJoViG0I) (9 min)

**⏱ Time to learn: 1 hour**

**🐍 STEP 5: Learn GraphQL + Python Integration**

🔥 Learn how to write Python code to query The Graph and store results in DataFrames.

**🎯 Learning Goals:**

* Send GraphQL queries using requests
* Parse the JSON response
* Use pandas to store wallet features

**📚 Resources:**

* 📘 Python Requests + GraphQL Guide
* 📺 [YouTube: Query The Graph with Python](https://www.youtube.com/watch?v=LCaGaL07bkg)
* 📘 pandas Docs (for DataFrames)

**⏱ Time to learn: 1.5 hours**

**📦 STEP 6: Project Execution & Final Write-up**

🔥 Apply all the above to build your CSV + brief explanation (the deliverables).

**🎯 Final Deliverables:**

* Python script (or Jupyter notebook) to:
  + Query The Graph for all 100 wallets
  + Compute wallet-level features
  + Score wallets (0–1000 scale)
  + Save to CSV
* Brief write-up:
  + Data collection
  + Feature selection
  + Scoring logic
  + Risk justification

**📘 Reference Structure for Report:**

markdown

CopyEdit

## Data Collection Method

Used The Graph API (Compound V2 Subgraph) with Python to fetch wallet-level supply, borrow, repay, and liquidation data.

## Feature Selection

Selected: total\_supplied, total\_borrowed, repay\_ratio, liquidation\_count, supply/borrow ratio, activity score

## Scoring Logic

Normalized features using MinMaxScaler. Assigned weights: supply (25%), borrow (25%), repay ratio (20%), liquidations (20%), activity (10%).

## Risk Indicators

High borrow with low repay or high liquidation = risky; high supply and consistent repay = safe.

**⏱ Time to execute: 2–3 hours**

**🧠 Total Time to Learn Everything: ~7 hours**

| **Phase** | **Time** |
| --- | --- |
| DeFi + Compound Concepts | 1 hour |
| GraphQL + The Graph | 2 hours |
| Feature Engineering | 1.5 hours |
| Risk Scoring Logic | 1 hour |
| Python + GraphQL Integration | 1.5 hours |
| Final Execution | 2–3 hours |

**✅ Next Step:**

Let me know when you’re ready to start **Step 1**, and I’ll walk you through **Compound Protocol basics** and help you take notes while learning.

Shall we begin?

Ask ChatGPT

**Take your API key for a spin:**

cqt\_rQDycJfCyx73kXwgBdDtbtxcr3xh