STARK SYSTEM ALERT SUBJECT: OPERATIONAL ROADMAP — "MERCENARY MODE" (JAN - MAY 2025) **STATUS: ASSUMING TOTAL FAILURE. OPTIMIZING FOR MAX SKILL EXTRACTION.**

We are scrubbing the "Hope" variable from the equation. This roadmap assumes you win **nothing**. No medals. No internships. Instead, it ensures that by May 2025, you possess a tech stack so lethal (Golang + K8s + DevSecOps) that you become undeniable for the Summer/Fall hiring cycle.

Here is your **Semester Protocol**.

📅 THE MONTHLY BATTLE PLAN

PHASE 1: THE SPRINT (Now – Jan 20)

Goal: Clear the deck. Finish the "Toy Projects" so you can focus on the "War Machines."

- **Imagine Cup (EchoLearn):**
    - *Action:* Vibe code the MVP. Connect OpenAI API + Streamlit.
    - *Deadline:* **Jan 9.** Submit and forget.
- **DSA (IBM Prep):**
    - *Action:* Finish **Blind 75** (Arrays, Two Pointers, Sliding Window).
    - *Goal:* Be ready for the IBM OA whenever it drops.
- **Tech:** None. Just Python logic.

PHASE 2: THE REBUILD (Jan 21 – Feb 28)

Goal: Become a Golang Developer.

- **College:** Semester begins. Survive attendance.
- **Primary Skill: Golang.**
  - *Don't:* Watch 10-hour tutorials.
  - *Do:* **Rewrite Argus in Go.** Start with a simple CLI that hits AWS Cost API.
  - *Key Concepts:* Structs, Interfaces, Goroutines (Concurrency is why we use Go).
- **DSA: Maintenance Mode.** 1 Medium problem/day (NeetCode 150).

PHASE 3: THE OBSERVABILITY (March 1 – March 31)

Goal: Master the CNCF Stack (Prometheus & Grafana).

- **Project (Argus V2):**
  - Make Argus export metrics. Don't just print "Cost: $50".
  - *Task:* Write a custom **Prometheus Exporter** in Go.
  - *Visual:* spin up a **Grafana** dashboard to visualize the cost data.
- **Why:** This is the *exact* skill required for LFX mentorships.

PHASE 4: THE FORTRESS (April 1 – April 30)

Goal: DevSecOps & Secret Management (The "Vault" Upgrade).

- **New Tech: HashiCorp Vault.**
  - *Task:* Stop hardcoding AWS keys in your `.env` file.
  - *Project:* Deploy Vault (local mode). Configure Argus to fetch AWS credentials dynamically from Vault.
- **New Tech: DevSecOps Basics.**
  - *Course:* Don't buy a course. Add **Trivy** (Container Scanning) and **SonarQube** (Code Quality) to your GitHub Actions pipeline.
  - *Outcome:* Your CI/CD pipeline now blocks insecure code.

PHASE 5: THE FINALS (May 1 – May 30)

Goal: Academic Survival.

- **College:** Exams.

- **Tech: FREEZE.** No new code. Just keep the DSA streak alive (1 problem/day).
- **LFX Summer:** Apply using the Argus V2 project you just built.

🛡️ THE WEEKLY ROUTINE (College Mode)

Monday – Friday (The Grind)

Time Block	Activity	The "Mercenary" Task
09:00 – 16:00	**College**	**Sleep in back bench.** Do DSA on paper during boring lectures.
17:00 – 18:00	**Rest**	Touch grass. Gym.
18:00 – 19:00	**DSA**	**1 LeetCode Medium.** No more, no less.
19:00 – 22:00	**The Build**	**Golang / Argus / DevSecOps.** This is your "Real Job."
Weekend	**Sprint**	5-6 hours of deep work on Vault/Prometheus integration.

🎒 THE RESOURCES (Free & Direct)

1. Golang (The Language)

- **Start Here:** <u>Go by Example</u> (Best for quick syntax).
- **Build This:** "Build a JSON API in Golang" (YouTube).

2. Prometheus & Grafana (Observability)

- **Read:** Prometheus Official Docs -> "Writing Exporters".
- **Task:** Understand how Prometheus *pulls* metrics from your Go app.

3. HashiCorp Vault (Security)

- **Start Here:** <u>HashiCorp Vault - Getting Started</u>.

- **Focus:** Just learn the "KV (Key-Value) Secrets Engine" first. Don't get lost in advanced auth policies yet.

4. DevSecOps (The "Small Course")

- **Don't pay.** Use this checklist:

  1. **GitLeaks:** Add it to your repo to prevent committing passwords.

  2. **Trivy:** Scan your Docker images for vulnerabilities.

  3. **Dependabot:** Enable it on GitHub to fix broken dependencies.

  - *That is 80% of practical DevSecOps.*

▦ THE FINAL OUTCOME (May 2025)

Worst Case Scenario:

- **IBM:** Rejected.

- **Imagine Cup:** Lost.

- **Attendance:** Borderline.

- **Your Resume:**

  - **Languages:** Python, C++, **Golang**.

  - **Cloud Native:** Docker, Kubernetes, **Prometheus, Grafana**.

  - **Security:** HashiCorp Vault, **DevSecOps (Trivy/GitLeaks)**.

  - **Project:** "Argus V2 - A Secure, Observable Cloud Cost Exporter built in Go."

That resume gets hired. The plan is set. Get back to EchoLearn.