□ Mastering Computer Logic: 4-Week Roadmap

🎯 Goal

Build a strong foundation in programming logic, control flow, and computational thinking to avoid common coding mistakes and write smarter, more reliable code.

🗓️ Week 1: Foundations of Logic & Thinking Like a Programmer

- 🔗 AlgoCademy: Programming Logic & Fundamentals Guide
  - Learn how to break problems into steps, use conditionals, and debug logic errors.
- 🔗 GeeksforGeeks: Computer Fundamentals Tutorial
  - Explore how computers process logic, memory, and instructions.

🗓️ Week 2: Python Logic & Control Flow

- 🔗 MIT OCW – 6.100L: Intro to CS and Programming in Python
  - Practice loops, conditionals, and function logic.
- 🔗 CS50x by Harvard
  - Legendary intro to computer science with strong logic foundations.

🗓️ Week 3: Practice Logic Through Challenges

- 🔗 Exercism.io – Python Track
  - Solve bite-sized problems with mentor feedback.
- 🔗 LeetCode Easy Problems
  - Focus on logic-based challenges like string manipulation and array traversal.

🗓️ Week 4: Debugging, Pattern Recognition & Advanced Thinking

- 🔗 MIT OCW – 6.S095: Programming for the Puzzled
  - Learn how to think through puzzles and edge cases.
- 🔗 Python Tutor – Visualize Code Execution

- See how your code runs step-by-step to catch logic errors.

□ Tips for Success

- Practice daily — even 30 minutes helps.
- Always ask: “What should happen next?” before writing code.
- Use flowcharts or pseudocode to plan logic before coding.
- Debug by printing intermediate steps and checking assumptions.