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**🚦 Railway Crossing Safety System – Logic-Based Design**

**📘 Overview**

This project is part of the Introduction to Computer Engineering course at the University of Canberra. The goal is to design a safety system for railway level crossings using intuitive logic. The system ensures gates are lowered when a train is approaching or a vehicle is on the tracks, and only raised when it is safe.

**📂 Project Steps**

* **Step 1:** Problem analysis, inputs/outputs, constraints, stakeholders
* **Step 2:** Brainstorming logic-based solutions and researching real-world systems
* **Step 3–4:** Evaluating alternatives and selecting the best solution
* **Step 5–6:** Planning and implementing logic in plain English with a flowchart
* **Step 7:** Testing with input combinations and refining the logic

**💻 Technology Integration**

* GitHub used for version control and collaboration
* Repository includes folders for each step, flowchart files, logic code, and test results
* AI agent (Microsoft Copilot) used to refine logic, explore hardware implementation, and improve documentation

**🧠 AI Reflection**

A short reflection is included to document how Copilot contributed to problem-solving, logic refinement, and ethical considerations.

**🔗 Submission**

Repository link is shared with the tutor and unit convener. All files are organized and documented for review.

**-Samir (u3312930)**