

graph_zombie_repo

repo para la calse de ia_p25 itam, contiene el simulador de zombies para grafos

Zombie Evacuation Challenge

The Situation

The year is 2025. A catastrophic incident at a secret research facility has led to an unprecedented crisis in the city. The combination of a radiation leak and an experimental pathogen has resulted in a dangerous environment filled with radiation zones and infected individuals exhibiting aggressive behavior (colloquially referred to as "zombies" by the evacuation teams).

You are part of the Emergency Response Strategic Command, tasked with developing evacuation protocols for rescue teams operating in this hazardous urban environment. Your mission is to create an AI-driven system that can guide rescue teams through the city while managing their limited resources.

The Challenge

As a strategic planner, you must develop an evacuation policy that can:

- Plot safe routes through the city from a starting point to designated extraction zones
- Manage the allocation of critical resources
- Adapt to varying city layouts and threat levels
- Maximize the chances of successful evacuation

The Environment

The city's infrastructure has been severely impacted:

- Some areas are contaminated with dangerous levels of radiation
- Groups of infected individuals roam certain sectors
- Many pathways are blocked by debris and structural collapse
- Communication infrastructure is unreliable, providing only approximate information

Available Resources

Each rescue team is equipped with limited supplies:

- **Radiation Suits:** Provides protection in contaminated areas
- **Ammunition:** Required for dealing with hostile encounters
- **Explosives:** Used to clear blocked pathways

The total amount of resources a team can carry is strictly limited by their transport capacity.

Environmental Intelligence

Your system has access to various environmental readings:

- Radiation detection readings
- Thermal imaging data
- Structural integrity assessments
- Movement detection patterns
- Emergency broadcast frequencies
- Infrastructure status reports

However, these readings are approximate and may not perfectly reflect the actual conditions on the ground.

Your Mission

Your task is to implement an evacuation policy that can:

1. Analyze the available environmental data
2. Determine the safest evacuation route
3. Allocate resources appropriately for the mission
4. Adapt to different city layouts and scenarios

Success Criteria

A successful evacuation means:

- The team reaches an extraction point
- They have sufficient resources to overcome obstacles along the way
- They complete the mission in a reasonable time

Evaluation

Your policy will be tested across multiple scenarios with:

- Different city layouts and sizes
- Varying threat levels and distributions
- Different starting points and extraction zones
- Limited resource availability

The Stakes

The success of your evacuation policy directly impacts the survival chances of rescue teams operating in the field. Each failed mission represents a potential loss of life, while each successful evacuation means survivors brought to safety.

Can you develop a policy that consistently guides teams to safety through this hazardous urban environment?

Read the rest of the documentation in [docs/](#)