Ancient Roman Firefighters

Prompt

You have been tasked with organizing a firefighting force for Ancient Rome known as the Vigiles Urbani or "watchmen of the city".

Optimize for overall distance traveled among all firefighters.

Given

City

The City is organized in a grid of squares where each square represents a Building and roads run between all of them. The size of the city can vary and the coordinates are 0-indexed. It knows its own dimensions and contains references to all buildings as well as FireDispatch.

CityNode

CityNode is a class that allows us to reference a location in the city.

Building

A Building knows its location, information about whether or not it's burning, and can toggle its own burning status.

FireStation

The FireStation is a special building. It is fireproof and has a random location in the city.

To Do

FireDispatch

FireDispatch is constructed with a reference to its city. It is responsible for initializing and dispatching the firefighters.

Firefighter

A Firefighter knows their own location and how far they have traveled throughout their lifetime. In order for a fire to be put out, a Firefighter must be present.