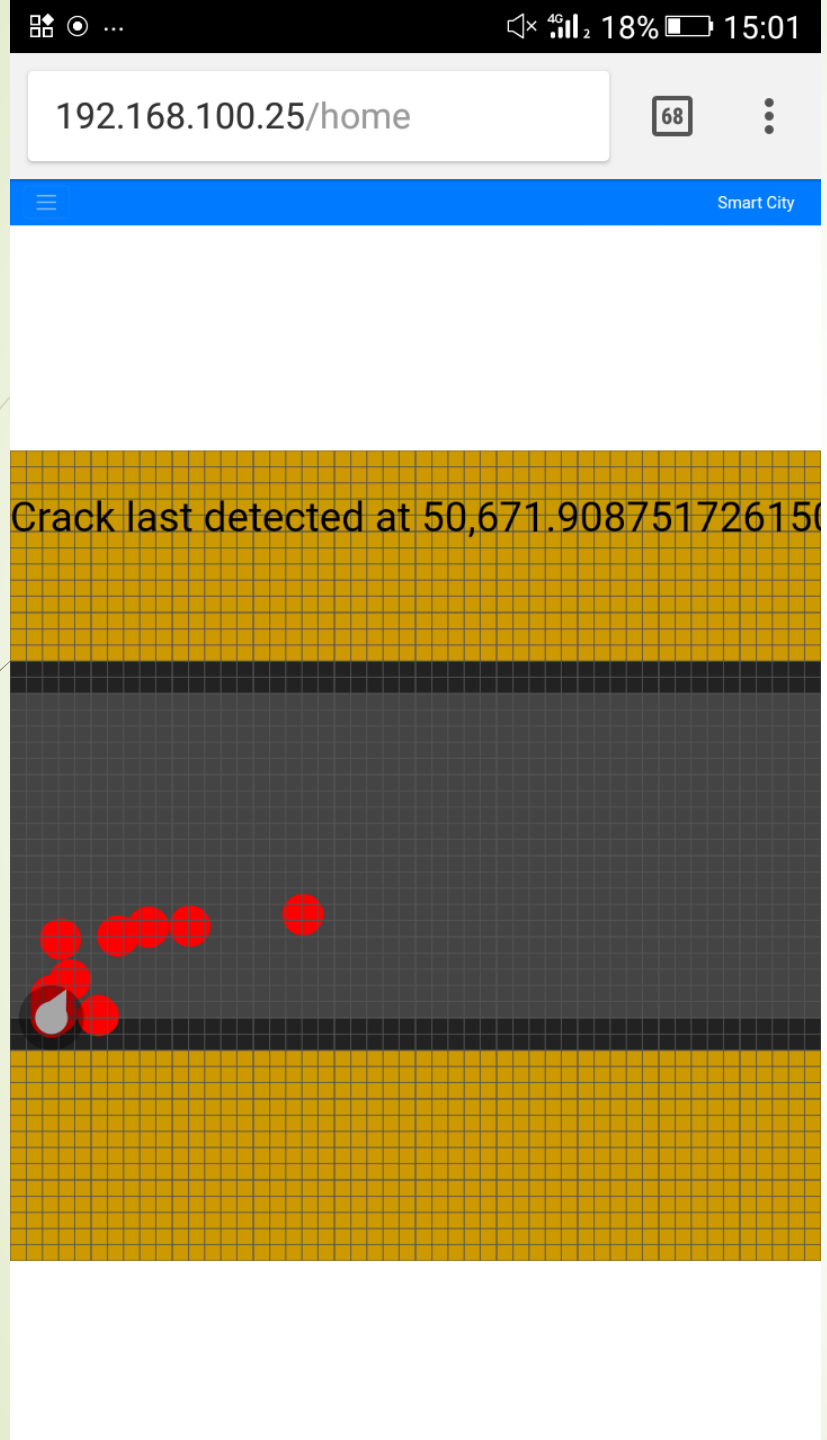
Extropia

Smart transport simulation project

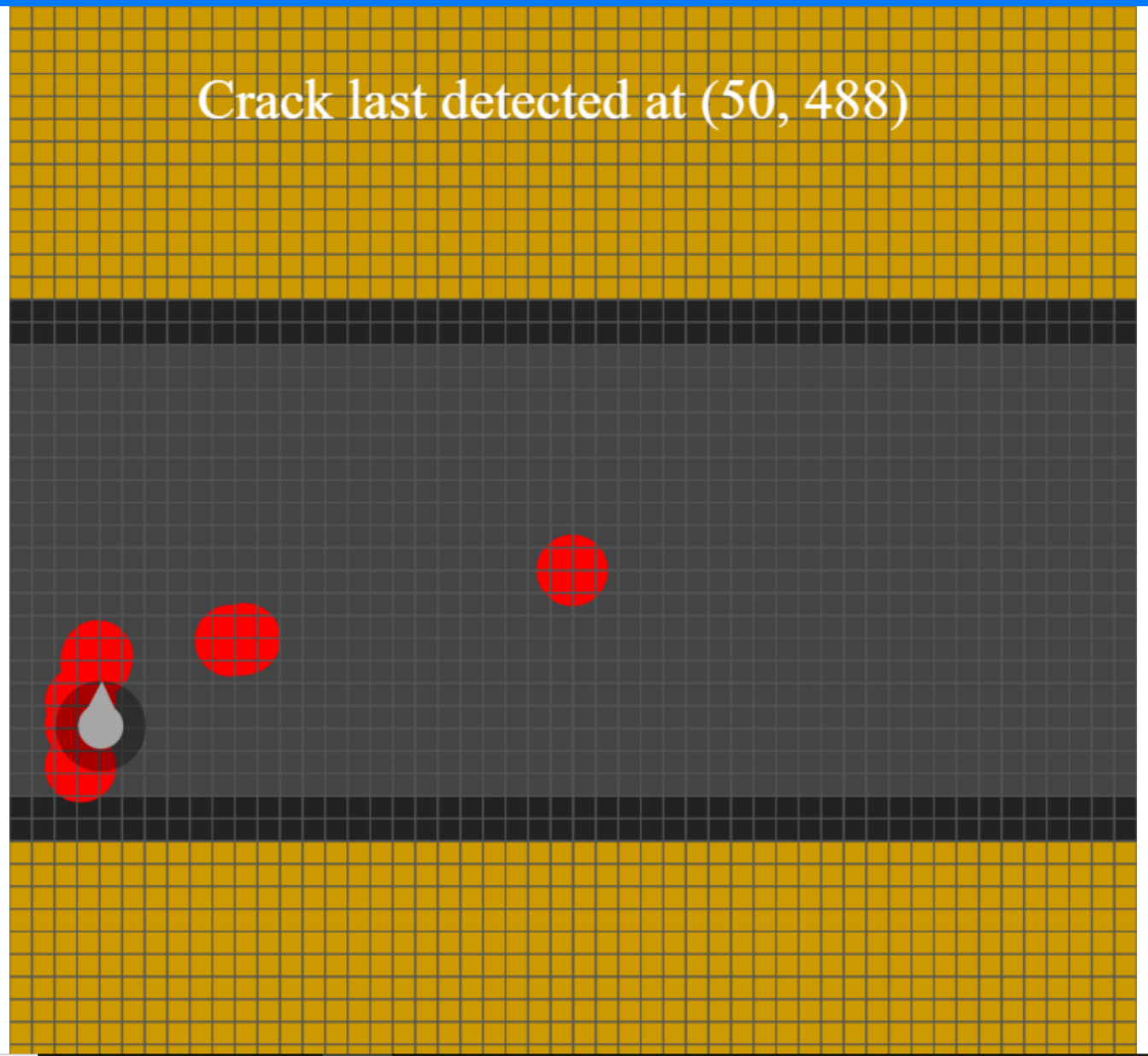
What is this project about?

- The purpose of our project is to simulate a road and mark the areas on the map where the cracks and pits are.
- We have built a web app that streams device's sensor data real time to the server
- In our app we have rendered a virtual map of the road to demonstrate this concept



This is how it looks in mobile browser

Crack last detected at (50, 488)

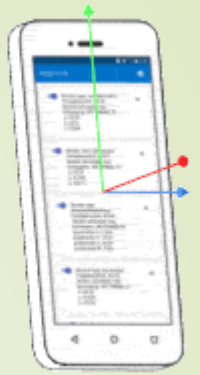


How does our app work?

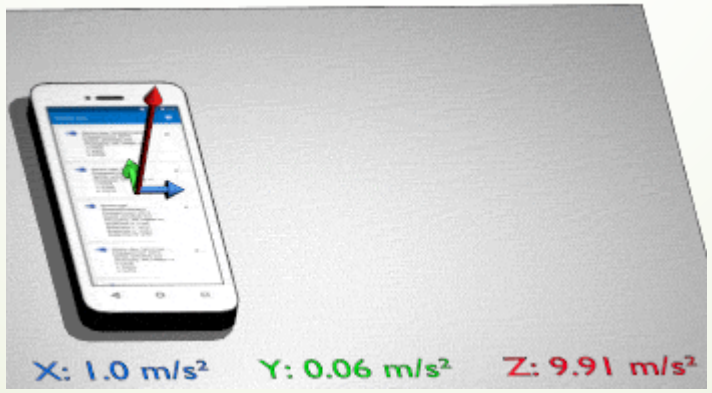
X: 0.0 rad/s

Y: 0.0 rad/s

Z: 0.0 rad/s



We've accessed device's native features, namely accelerometer, and gyroscope sensors to measure the tilts relative to the ground



We've used Html canvas for rendering graphics

Socket.io does magic of real-time data streaming

Where might it be useful?

While the project itself is crude and not production ready. However it can be extended to exciting real world projects.

- The prototype sensors could be scaled up using embedded sensors. Authorities may require every driver to have them installed in their vehicles.
- This way vehicles can be tracked in real time. The drivers who exceed speed limit, or drive off the road or show reckless driving history, could be blacklisted. And in order to remove their name off the blacklist, they may be required to pay penalty.
- As demonstrated in this project we could detect the status of roads.
- Most importantly, we could build massive network of IoT and generate huge databases which can be analyzed with big data and AI to extract some useful information.