Hackathon Four – Visualising Risk

1 Introduction

The aim of the fourth Hackathon is to think about "developing unique and novel ways of communicating COVID-19 data to the public, considering how to turn data into actionable information. Our challenge to you is to develop an app / modelling approach plus (interactive) visualisation that could be used to warn a member of the public where they are moving into an area having a high COVID-19 transmission rate, or an area posing greater or increased personal risk."

2 Methodology

This is a thinking exercise.

2.1 How about a website?

We have been pointed to how other countries have created websites where the number of covid-19 cases and deaths are reported daily. Such a website would only be accessed by the more computer literate members of society and so may not reach everyone. It could be written to be viewed from a smart phone but again it would require people to keep looking at the website as they moved through an area. It may also need people to drill down through many maps to find the local area that they are in.

2.2 How about a mobile app?

A smart phone knows a person's location and so a mobile app could talk to a remote server and ask it about the status of the person's current location. It could do this continuously without the person needing to do anything. If the person is entering an area of risk, then the mobile phone would sound an alarm notifying its owner of the threat. The mobile app could then show a local map indicating which areas are risky and which are safe (possibly overlay covid-19 hotspots onto google maps). This would require everyone with a smart phone to download the mobile app.

2.3 How about a much simpler idea?

It is usual for a red flashing light to be used to indicate danger, so why not deploy red flashing lights to areas where covid-19 is present?

3 Research

A search of the Internet was undertaken to identify a supplier of cheap red flashing lights and a flashing red LED system for £2.49 (one off price) was found. It is a dummy alarm system, see Figure 1, used to scare away burglars but could easily be repurposed for this job. It has approximately 6 months battery life on 2 x AA batteries. The company asks customers who want to buy in bulk to contact them for very competitive pricing! The company is UK based; Clever Products UK, Unit 9, Humber Street Workshops, Goole DN14 5UJ.

Email: info@cleverproducts.co.uk

Website: https://www.cleverproducts.co.uk/index.php?route=common/home

As for batteries Amazon supply a Duracell AA Battery Tub (Pack of 40) for £19.99, again these could be obtained cheaper in bulk.

The flashing light system shown in Figure 1 could be repurposed. It would need a brighter flashing LED and the solution might be to simply add two more making three of them even though this would reduce the battery life to 2 months. The casing and wire could be removed to reduce cost; this system does not need to look pretty but it does need to be watertight and so it could be placed into a resealable transparent food bag. With batteries the system should cost around £4.

4 Conclusion

In a covid-19 locked down area council workers would attach these red flashing lights high up on lamp posts and other high places to be easily visible and out of reach of the public. The red flashing lights would stay there during the lockdown period, they would be removed when the all clear is given. They would be easily visible and require no other technology to work. People would simply be warned to avoid such places and if it is a residential area then people should stay at home.

An extra level of visualisation would be to purchase some with amber LEDs. These could be used to warn people that they are entering an area of higher risk but one that is not bad enough to be locked down. This would warn the public to take extra precautions.

5 Finally

This is a simple way to indicate danger that only requires people to notice red or amber flashing lights attached to lamp posts. People do not need to look at a website or download anything onto their mobile phone.

6 Declaration

I have no association with Clever Products UK or Amazon, I simply found them on the Internet.