SuperHack 2017

Challenge 2

Hack the farms

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Background

Hacking the farms of the land down under.

Australia has always been a major player in the agricultural industry, and it stands as one of the 5 pillars of the Australian economy. There are more than 100,000 farms in Australia, covering more than half of the entire continent. Our farms do not only feed the Australia but also contribute to the whole world too.

Unfortunately, the major challenge to the industry is not just the ever increasing population and demand but the everyday battle against climate change.

Science and technology has enabled us to tackle these problems improving on the conventional methods or by taking a completely new turn. Putting theory into practice, it is another battle to trade off between efficiency and cost.

Optimizing the use of land and water, keeping biological threats away from the crops and protecting them against extreme weather conditions, all of which are a priority in the scope of this challenge.

Remember superheros: “There is always room for innovation, improvement and a better way”.

~Anonymous superhero of UniMelb

The Challenge

We want you superheros, to help the farmers with one or more of your superpowers:

- **Magic Water**: Crops will magically receive the water they need, when they need it. Not a single drop shall be wasted, water is a precious resource! Remember the farmer should know how the process works and how much water they are using.

- **Force Field**: Crops will be protected against evil bugs and/or villainous animals who want to destroy them and conquer the world. The force field must detect and reject the enemy using flashing lights, sound or any other mean that does not harm them or use sneaky chemicals. The farmer must be notified when a threat has been detected and neutralized.

- **Weather Control**: Ice cold nights and burning days are two sides of a coin, it's just a matter of probability. You must detect such extreme conditions and take action to keep the crops safe. The farmer must be informed of the areas in danger. Knowing where the conditions are usually more sever
- e will help them to plan ahead and reinforce the protection if necessary.

If you’re up for a challenge, you can use your imagination and tackle any pressing issue that you may find interesting. For an example; help the Tuna farms in South Australia against the vicious Algae agents or make forces if another Black Thursday comes around under your watch. You will be on your own, be sure to outline your assumptions, choices and your implementations accordingly.

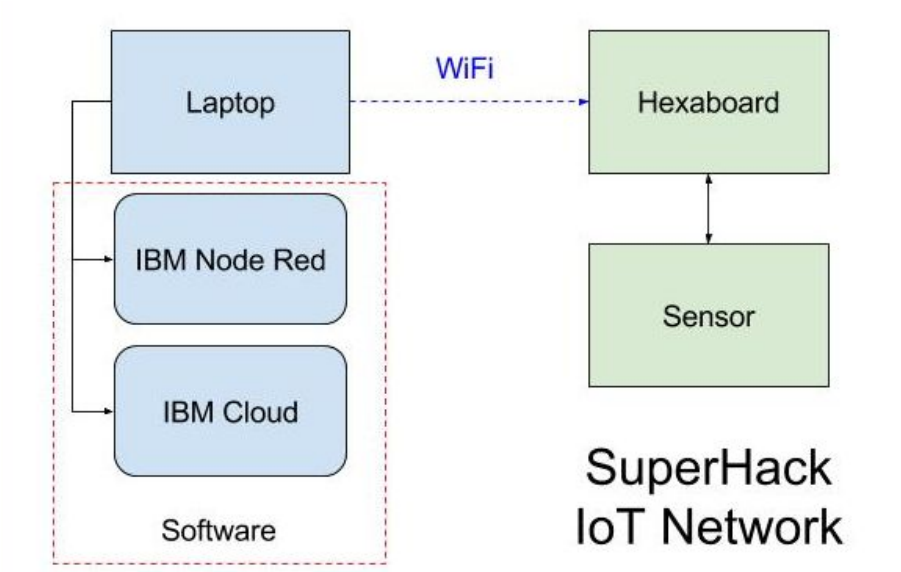
Dimensions of the Hack

Tech you will be using
During the SuperHack our mentors will help you create an Internet of Things network. You will be using software on your laptop to connect to the hardware provided over a WiFi connection.

Scope of your solution
You have a single Tekt Board and a lot of land to cover. Do not worry! Your solution must solve the problem only for a small area. However, its size depends on your choice.

To cover all the land, we can just place more devices working together. Therefore, more area you can cover with a single device, less devices you need and the solution becomes more and more efficient.

Having a single Tekt Board will also force you to simulate your actions in the same device. Make sure you still use IBM BlueMix and the data flows exactly as if you had more devices.



Judging Rationale

Theme	Criteria	Description
Idea & Use Case	Originality	Is this a fresh, original and exciting implementation?
	Viability	Is there a real demand for this implementation? Is there examples of early traction?
Experience	Intuitiveness	Is the overall user experience intuitive? Does the flow make sense?
	Presentation	Did the pitch and presentation create excitement and interest?
Technical Difficulty	Quality	Does it actually work? Could this scale as a real solution with multiple users?
	Ingenuity	How well did the implementation mashup interesting and relevant technologies?

“ The Power is Yours ”