
eggXchain

— Hack like a Girl 2018 —

Infectious Eggs are EVERYWHERE !



- Julia wants to buy eggs to make pancakes
- Later she hears on the news about infected eggs
- She has no idea if her eggs are infected too

2018.07

- 207,000 eggs
- Southern Germany
- Including "Bio" and 8+ supermarkets

2017.08

- 268,000 eggs
- Mostly Bavaria (DEU)

2016.10

- 100,000 eggs
- Southern Germany

1994

- 200,000+ ppl sick
- USA
- During delivery, Eggs contaminated ice cream

Infectious Eggs are EVERYWHERE !



Takeaway #1

Consumers want to get information about eggs immediately

- Because she has no idea **if eggs are still healthy**

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Takeaway #2

Supermarkets want to protect their reputation and update their customers immediately about possible damage

- They want to reach out every customer that might be affected by a problem

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Infectious Eggs are EVERYWHERE !



- Susan wants to buy eggs to make pancake for her children
- However, the infectious eggs news really worries her
 - At least once **every year**
 - even contaminated other food during **delivery**

Takeaway #3

Barcodes in general can only specify the source of farms, but not the whole delivery process

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What is our Solution?

Blockchain

Solution

- Each box of eggs has an ID associated with it.



<http://pngimage.net/egg-carton-png-3/>



https://en.wikipedia.org/wiki/Barcode_system

Solution

- **Each box** of eggs has an **ID** associated with it.
- **Each box** has a **GPS sensor** with updates of the coordinates at each time.



<http://marconisociety.org/accurate-mapping/>

Solution

- Each box of eggs has an ID associated with it.
- Each box has a GPS sensor with updates of the coordinates at each time.
- Once the egg is **marked as infected**, all the eggs that have been **at the same time in the same location** are marked as infected too.



Solution

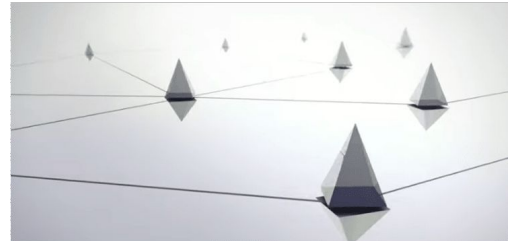
- Each box of eggs has an ID associated with it.
- Each box has a GPS sensor with updates of the coordinates at each time.
- Once the egg is marked as infected, all the eggs that have been at the same time in the same location are marked as infected too.
- An end user can check if the egg is infected and get the updated information.



Big Brother is watching the Eggs.

Solution

- Each box of eggs has an ID associated with it.
- Each box has a GPS sensor with updates of the coordinates at each time.
- Once the egg is **marked as infected**, all the eggs that have been **at the same time in the same location** are marked as infected too.
- An end user can check if the egg is infected and get the updated information.
- This is a **decentralised solution** based on **Blockchain Ethereum** platform (not only one server exists, but we have distributed servers/nodes).



Solution: Front-end UI

← → ↻ ⓘ localhost:4200 ☆ 🍌 ⋮

eggXchain

Providing Data Receiving Data

Create an egg box

Barcode number	Initial longitude	Initial latitude
5	22	33

Create

Push track record

ID	Longitude	Latitude
5	30	40

Push

Mark egg box as infected

ID

Send

Technology stack

- Blockchain (Ethereum/Solidity)
- Angular
- Web3.js

Code available at : <https://github.com/ringaile/eggchain>

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Questions?