



Climate Emergency Hackathon

Technical Information

31st JANUARY / 1st FEBRUARY 2020

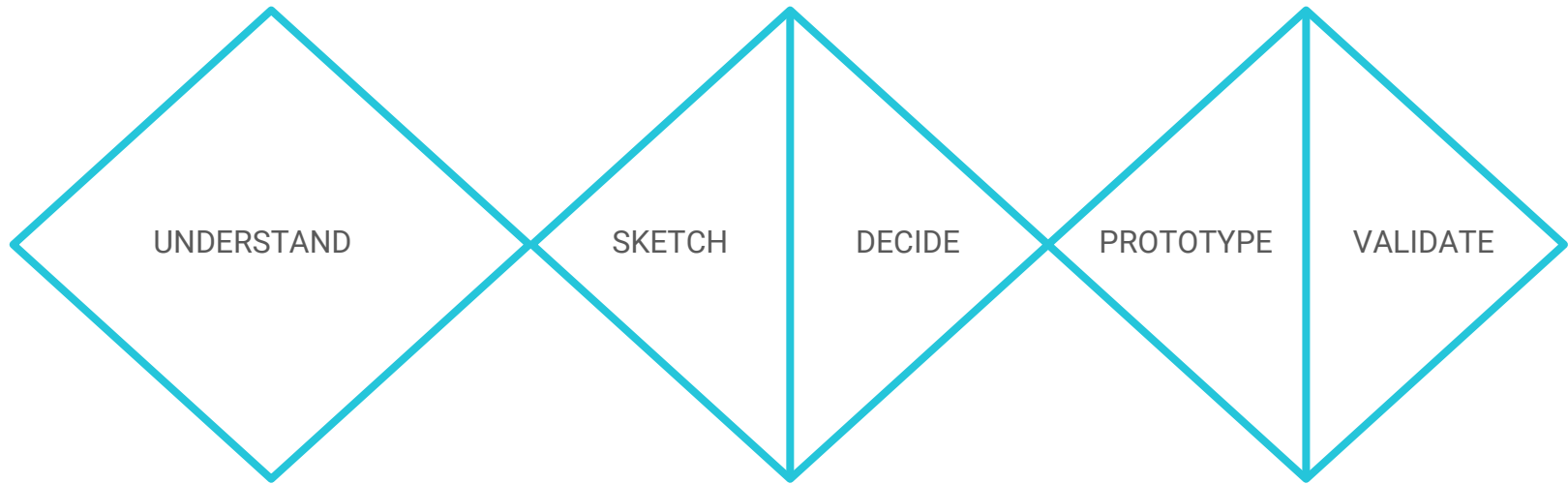
Hackathon Schedule: Day 1

Time	Activity
07:00	Doors open. Breakfast provided.
07:00 - 08:30	Registration (ID check and NDAs signed, laptop assignment, introductions to your teams, slack channel and confluence pages checked)
08:30 - 09:30	Welcome talk
09:30 - 11:30	Team building session with the Comedy Store
12:00 - 13:00	Lunch
13:00	Hackathon starts!
17:30	Day 1 Summary
21:00	End of Day 1!

Hackathon Schedule: Day 2

Time	Activity
8:00	Doors Open
10:00	Welcome Talk
13:00	Lunch
17:30	Last Call – 30 minutes to go!
18:00 - 19:45 PM	Teams present their ideas to the panel of judges – 5 minutes per team
7:45 PM	Winners announced and give prizes!
8 PM	End of Hackathon































Framework to support divergent and convergent thinking



Service Design and Process Evolution



Service Design Template

Actors (customers)					
The plot (experience)					
Front Stage (user touch points)					
Pain-points & opportunities					
Supporting data					
Back Stage (data & systems)					

Ways of working: Legal Disclaimer

Has everyone signed an NDA?

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Has everyone signed an NDA?

Section 1:

“This Non-Disclosure Agreement is to allow persons attending the event access to confidential information held by the Ofgem.”

Ways of working: Legal Disclaimer

Has everyone signed an NDA?

You have agreed to:

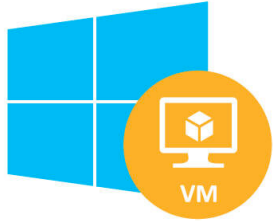
- Keep confidential information secret and confidential
- Not use or exploit the Confidential Information in any way
- Only make disclosure of the Confidential Information in accordance with clause 2.5 (no disclosure) and clause 2.6 (unless as required by law).

Ways of working: Surface Pro



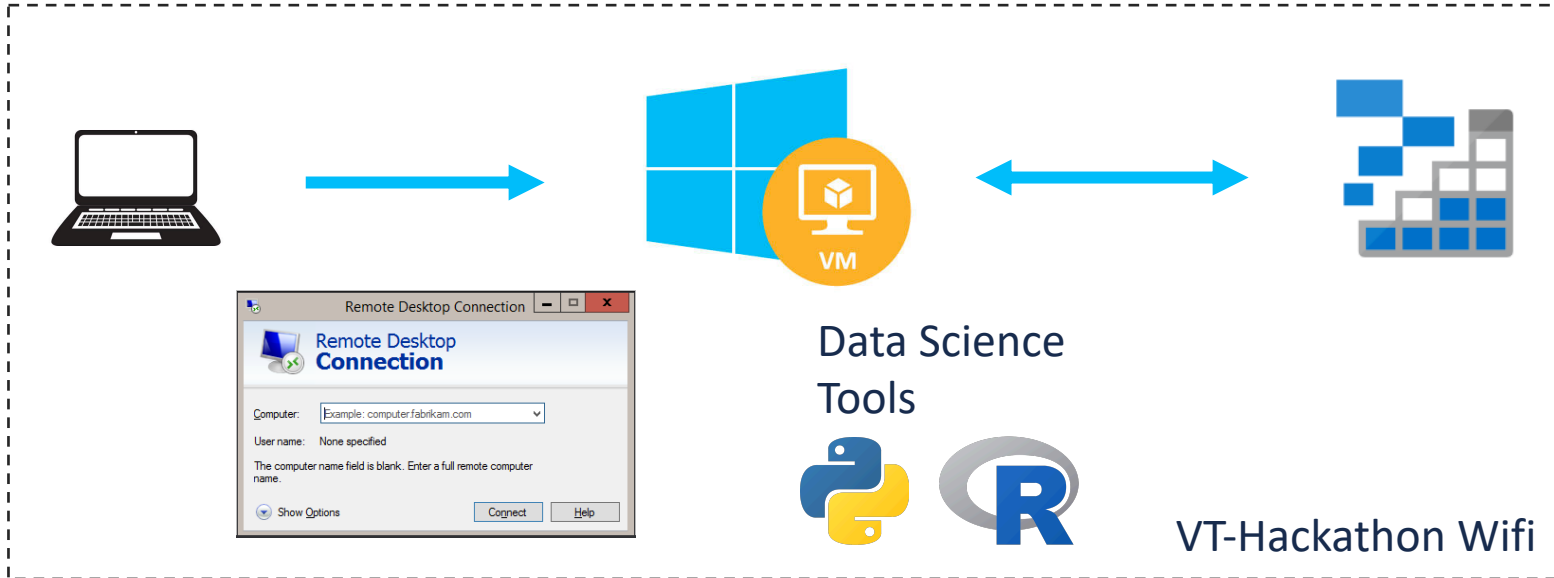
- Access through Username and Password
- You can only connect to VT-Hackathon wifi
- Laptops should not leave the Valtech office.
- Be careful with them – all are borrowed from Microsoft and we need to return them!

Ways of working: Virtual Machines



- Access through a *different* Username, Password and IP using remote desktop client
- There is one Virtual Machine per Surface Pro
- Users should connect to Blob Storage and download data to their Virtual Machines
- Instructions for how to use Storage Explorer are located at C:\dsvm\instruction\KBT-*

Ofgem data platform



Password: DCarb2020!

ofgem

Making a positive difference
for energy consumers



Department for
Business, Energy
& Industrial Strategy



Government
Digital Service



Cabinet Office

MAYOR OF LONDON

LONDON ASSEMBLY



Office for
National Statistics



Met Office



ElectraLink

ELEXON



ocado
TECHNOLOGY

Greenstone 
Data that talks to you

emperor

M&S

EST. 1884

IBM

AVIS
Budget

centrica

SWECO 



Queen Mary
University of London

US

University of Sussex

Duke
UNIVERSITY



valtech.

rbi reed business
information

CATAPULT
Energy Systems

TATA CONSULTANCY SERVICES

ATKINS

Member of the SNC-Lavalin Group



hippodigital



COMPARISON
TECHNOLOGIES

Which data do we hold?

ofgem

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Met Office



Department for
Business, Energy
& Industrial Strategy



Ordnance Survey

What: The ECO3 register

Description: <https://www.bbacerts.co.uk/blog/post/what-is-eco3>

TL;DR: The Energy Company Obligation (ECO) scheme is a government incentive that helps people lower their home heating costs through energy efficiency measures.

Relevance: Different scores related to cost, efficiency, savings and property type for different installations (demand reduction)

Possible joins: date-timestamp, postcode, region

Location: datasets/eserve

Which data do we hold?

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& Industrial Strategy



Ordnance Survey

What: Weather

Initial Reading: None needed!

TL;DR: Includes Temperature, Feels Like, Wind Speed, Rain and Snow Fall

Relevance: Weather is a strong predictor of energy consumption and potentially housing insulation. Weather over time is climate.

Possible joins: date-timestamp, region

Location: datasets/met_office

Which data do we hold?

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Ordnance Survey

What: Gas and Electricity consumption

Initial Reading: <https://www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes>

TL;DR: BEIS publish many aggregated energy statistics. Supplied is electricity consumption at the grouped postcode (in-code) level.

Relevance: Energy consumption is an indication of carbon intensity across different regions

Possible joins: date-timestamp, region

Location: datasets/BEIS

Which data do we hold?

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Ordnance Survey

What: Mapping Data

Initial Reading: <https://www.ordnancesurvey.co.uk/business-government/tools-support/open-data-support>

TL;DR: Open Mapping, Open Road

Relevance: Useful for visualisation and to see geographic trends

Possible joins: post-code, region

Location: datasets/ordnance_survey

Which data do we hold?



What: 3 datasets; Embedded Generation, Switching, Meter Read Data

Initial Reading: <https://www.electralink.co.uk/about-us>,
<https://modernisingenergydata.atlassian.net/wiki/spaces/MED/pages/93978683/Electralink+datasets>

TL;DR: Electralink provide the data transfer service between the participants in the UK electricity market. The company continues to operate the regulated Data Transfer Service (DTS) that underpins core processes that are critical to a competitive energy market.

Relevance: Energy consumption and generation are an indication of carbon intensity across different regions. Switching shows market behaviour

Possible joins: postcode

Location: datasets/electralink

Which data do we hold?



What: Generation, Demand, System electricity prices

Initial Reading: <https://www.bmreports.com/bmrs/?q=help/about-us>

TL;DR: Demand and generation at a transmission level including; medium and large generator data with demand data for around 350 grid supply points back to Apr 2013. System electricity prices included in system and market parameter data.

Relevance: More efficient balancing could enable lower generation, understanding relative changes in generation-demand will show local system transformation (DNO – DSO etc)

Possible joins: Unknown

Location: datasets/elexon

Which data do we hold?



What: Smart Meter Data

Initial Reading: <https://www.ofgem.gov.uk/gas/retail-market/metering/transition-smart-meters/data-communications-company-ofgem-publications>

TL;DR: The roll-out of smart meters in Great Britain is supported by a new national smart metering communications infrastructure. Installation date of smart meter at household level is supplied at the outer postcode level

Relevance: Rate of installation can be used as measure of uptake of smart meters in different regions of GB

Possible joins: EnergyDirection, outerpostcode

Location: datasets/smart_dcc

Which data do we hold?



What: Flights per day

Initial Reading: <https://www.caa.co.uk/Data-and-analysis/>

TL;DR: UK's aviation regulator, supporting consume value for money, security, efficient use of airspace, minimising the environmental impact of aviation on local communities and reduction of CO₂ emissions.

Relevance: Different aircrafts will have different levels of energy efficiency. May require joining to other data sets.

Possible joins: aircraft_name

Location: datasets/civil_aviation_authority

Which data do we hold?



What: Electric Vehicle Tariff Data

Initial Reading: <https://comparisontech.com/about/>

TL;DR: Comparison Tech support a wide range of businesses, including other price comparison sites, newspapers and financial services companies, offer their own successful energy and telecoms switching services to their customers.

Relevance: Market data on EV may show the rate of new electric vehicle tariffs uptake including domestic consumer market behaviour

Possible joins: region

Location: datasets/EVTariffData

Other data platforms



SDG indicators
United Nations Global SDG Database

data.gov.uk | Find open data



SEA AROUND US
FISHERIES, ECOSYSTEMS & BIODIVERSITY



GBIF | Global Biodiversity
Information Facility

nationalgridESO



Any other connection

Other data platforms



Valtech-Guest is currently unavailable.

Team Comms



What could go wrong?

- I have lost my login information – General Team, DevOps
- The energy space is complex – See data model near stage
- I am struggling to understand data – Ask slack for an expert
- I need more memory than 28 Gb – Try sampling or ask DevOps
- I am struggling with processing data – Ask our data engineering team
- I need a library that isn't installed – sorry there's no access to the internet on the VMs

questions?

