



Philip Potter

Tech Lead, Registers

Government Digital Service

@philandstuff

I'm from the Government Digital Service

We were set up in 2011 to support the digital transformation of government

I'm going to talk to you about...

1. What we've done
2. What we learned
3. What I'm working on


1. What we've done

2. What we learned

3. What I'm working on

You might recognise some what we've done, but probably not all of it...

GOV.UK
Exemplar services
GOV.UK Verify
Performance Platform
Assisted digital support
Digital skills in government
Digital Marketplace
Better, cheaper technology

**GOV.UK**

Welcome to GOV.UK

The best place to find government services and information
Simpler, clearer, faster

Popular on GOV.UK

- [Universal Jobmatch job search](#)
- [Renew vehicle tax \(tax disc\)](#)
- [Log in to student finance](#)
- [Book your theory test](#)
- [Employment and Support Allowance](#)

Benefits
Includes tax credits, eligibility and appeals

Births, deaths, marriages and care
Parenting, civil partnerships, divorce and Lasting Power of Attorney

Business and self-employed
Tools and guidance for businesses

Citizenship and living in the UK
Voting, community participation, life in the UK, international projects

Crime, justice and the law
Legal processes, courts and the police

Disabled people
Includes carers, your rights, benefits and the Equality Act

Driving and transport
Includes vehicle tax, MOT and driving licences

Education and learning
Includes student loans, admissions and apprenticeships

Employing people
Includes pay, contracts and hiring

Environment and countryside
Includes flooding, recycling and wildlife

Housing and local services
Owning or renting and council services

Money and tax
Includes debt and Self Assessment

Passports, travel and living abroad
Includes renewing passports and travel advice by country

Visas and immigration
Visas, asylum and sponsorship

Working, jobs and pensions
Includes holidays and finding a job

24


Ministerial departments

331


Other agencies and public bodies

The websites of all [government departments](#) and many other agencies and public bodies have been merged into GOV.UK.


Here you can see all [policies](#), [announcements](#), [publications](#), [statistics](#) and [consultations](#).



Election 2015
The [latest updates from government](#), following the general election on 7 May.



Vehicle tax has changed
You no longer need a paper tax disc for your vehicle. You can [renew your vehicle tax online](#) and pay by direct debit.



Find a job
Use [Universal Jobmatch](#) to find full or part-time work in Great Britain and abroad.

More on GOV.UK

Most active


- [Universal Jobmatch job search](#)
- [Log in to student finance](#)
- [Passport fees](#)

UK bank holidays

Working as open, agile,
multi-disciplinary teams

1. What we've done
2. What we learned
3. What I'm working on

GOV.UK: The best place to find government services and information



Welcome to GOV.UK

The best place to find government services and information
Simpler, clearer, faster

Search GOV.UK

Popular on GOV.UK

[Universal Jobmatch job search](#)
[Renew vehicle tax \(tax disc\)](#)
[Log in to student finance](#)
[Book your theory test](#)
[Employment and Support Allowance](#)

[Benefits](#)
Includes tax credits, eligibility and appeals

[Births, deaths, marriages and care](#)
Parenting, civil partnerships, divorce and Lasting Power of Attorney

[Business and self-employed](#)
Tools and guidance for businesses

[Citizenship and living in the UK](#)
Voting, community participation, life in the UK, international projects

[Crime, justice and the law](#)
Legal processes, courts and the police

[Disabled people](#)
Includes carers, your rights, benefits and the Equality Act

[Driving and transport](#)
Includes vehicle tax, MOT and driving licences

[Education and learning](#)
Includes student loans, admissions and apprenticeships

[Employing people](#)
Includes pay, contracts and hiring

[Environment and countryside](#)
Includes flooding, recycling and wildlife

[Housing and local services](#)
Owning or renting and council services

[Money and tax](#)
Includes debt and Self Assessment

[Passports, travel and living abroad](#)
Includes renewing passports and travel advice by country

[Visas and immigration](#)
Visas, asylum and sponsorship


[Working, jobs and pensions](#)
Includes holidays and finding a job

24
Ministerial departments

331
Other agencies and public bodies


The websites of all [government departments](#) and many other agencies and public bodies have been merged into GOV.UK.

Here you can see all [policies](#), [announcements](#), [publications](#), [statistics](#) and [consultations](#).




Election 2015

The [latest updates from government](#), following the general election on 7 May.



Vehicle tax has changed

You no longer need a paper tax disc for your vehicle. You can [renew your vehicle tax online](#) and pay by direct debit.



Find a job

Use [Universal Jobmatch](#) to find full or part-time work in Great Britain and abroad.

More on GOV.UK

Most active

[Universal Jobmatch job search](#)
[Log in to student finance](#)
[Passport fees](#)

UK bank holidays

We can't fix everything – there are
hundreds of services and it'd take ages

Plus there are now teams across government now who are great at improving individual services

There are still barriers to building great services



Companies House

[Return to Companies House](#)

Web Incorporation Service

[HELP](#)

[CYMRAEG](#)

You will need:

Company Name and Address



Officer Details (Director and

**Sign in or register to
incorporate a new company**

Enter email address:



Register for HMRC taxes

What types of business can use this service?

The following types of business can use this service to register with HM Revenue & Customs (HMRC) for the taxes shown:



Self Assessment and PAYE

- Self-employed/sole traders
- Nominated partner of a self-employed business partnership (information on registering other partners can be found on the next page)

Corporation Tax and PAYE

- Limited companies (you will need the Companies House Registration Number and the Unique Taxpayer Reference from HMRC)

VAT

- Sole proprietors
- Corporate bodies (eg Limited Companies)

Register (notify) under the Data Protection Act

The Data Protection Act 1998 requires every data controller (eg organisation, sole trader) who is processing personal information to register with the ICO, unless they are exempt.



[Home](#) > [Business and self-employed](#) > [Food, catering and retail](#)

Licence

Food business registration

Apply for this licence

Enter your postcode (UK only)

eg SW1A 2AA

Find

1 Start with needs*

*user needs not government needs

The best way we can help is providing the tools, services, standards and infrastructure that makes improving every service easier

We call that idea Government as a Platform

<Cmd-tab>

A critical part of this is getting the relationship with data right

Speech

Open Data Institute summit 2015: Matt Hancock speech

From: [Cabinet Office](#), [The Rt Hon Matt Hancock MP](#) and [Government Digital Service](#)
Delivered on: 3 November 2015 (Original script, may differ from delivered version)
Location: London
First published: 3 November 2015
Part of: [Central government efficiency](#) and [Government transparency and accountability](#)

The Minister for Cabinet Office Matt Hancock spoke about data-driven government at the Open Data Institute (ODI) summit.



Government has been in the data business for a very long time.

The earliest known examples are over 5,000 years old. You can see them at the British Museum: clay tablets from ancient Mesopotamia, about the size – interestingly enough – of a modern computer tablet. They record the daily beer ration paid out to workers on big public projects like temples and irrigation systems.

the ODI gives us a good base on which to build, and I'm grateful for your help in developing that.

Getting this right is critical to the future of digital government in the UK. The digital platforms we're building, led by the brilliant GDS, will depend on strong data foundations.

Our core datasets must talk to each other, built on high quality registers instead of lists of data replicated in each government department.

Second, we must continue to build capability across the Civil Service. In the last Parliament we set up a cross-government Data Science Accelerator Programme, to train analysts in cutting-edge tools and techniques. Now in its fourth cohort, it's helping to embed expertise and drive innovation across Whitehall.

But to be truly data-driven, we also need policymakers and operational

1. What we've done
2. What we learned
3. What I'm working on

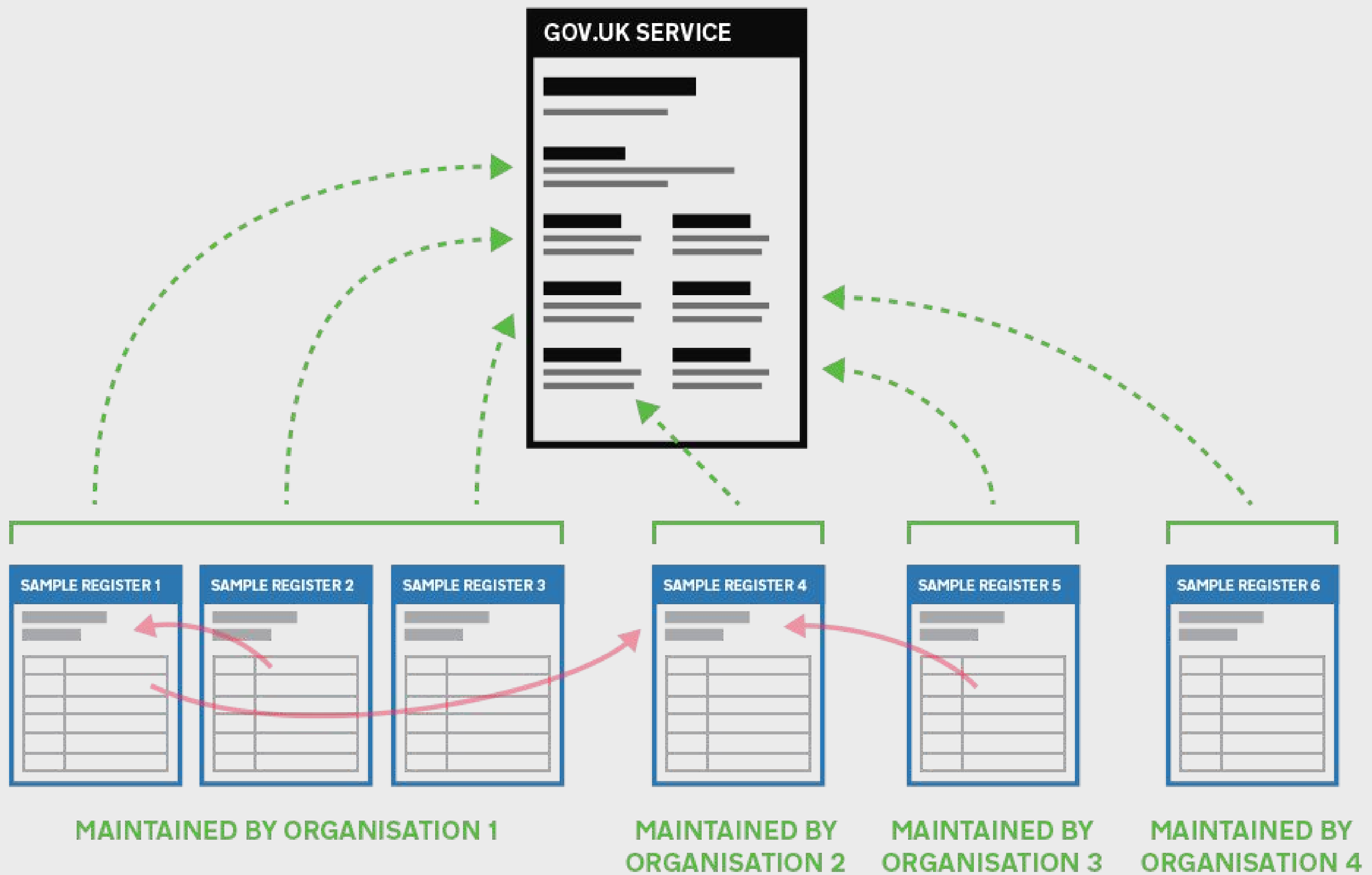
Registers

Bad data hinders building good services

Problems with:
access & liveness
quality & cleanliness
duplication & authority
provenance

We're working on defining good,
authoritative lists you can trust

We call these lists “Registers”



What does a good register look like?

Blog

Government Digital Service

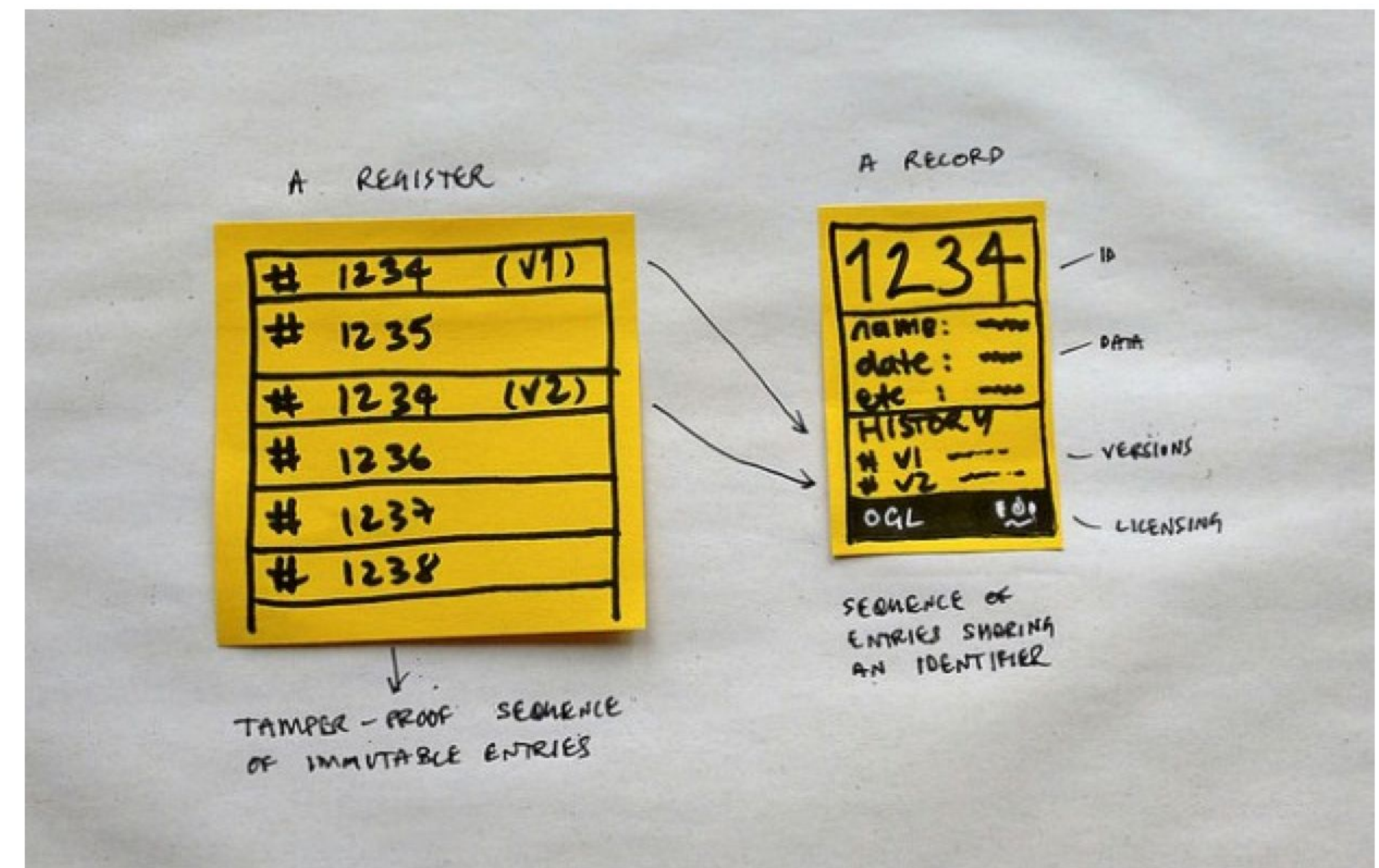
Organisations: [Government Digital Service](#), [Cabinet Office](#)

Search blog



The characteristics of a register

Paul Downey, 13 October 2015 — [Government as a Platform](#)



Registers are:

1. Accessible

2. Authoritative

3. Trustworthy

Registers are:

1. Accessible

2. Authoritative

3. Trustworthy

Problem:
restricted access
stale data

Registers are live, not just published

ALPHA This is a new service – your [feedback](#) will help us to improve it.

Record WC1A 1AA

A record in the [Postcode register](#)

The latest entry for this record is:

Field	Value
latitude	51.51659512019005
longitude	-0.12927864867614655
postcode	WC1A 1AA

This data is available as: [json](#), [yaml](#), [html](#), [csv](#), [tsv](#) and [ttl](#)

View all versions of this record [here](#)

Contains Ordnance Survey data © Crown copyright & database right 2015

Contains National Statistics data © Crown copyright & database right 2015

Contains Royal Mail data © Royal Mail copyright & database right 2015


```
{  
  "serial-number": 2438251,  
  "hash": "2e1dc3c37608f3...",  
  "entry": {  
    "latitude": "51.51659512019005",  
    "longitude": "-0.12927864867614655",  
    "postcode": "WC1A 1AA"  
  }  
}
```

serial-number: 2438251

hash: "2e1dc3c37608f33b..."

entry:

latitude: "51.51659512019005"

longitude: "-0.12927864867614655"

postcode: "WC1A 1AA"

entry	latitude	longitude	postcode
2561455	, 59.887103540517636	, -1.3075783081915386	, ZE3 9XP
2561454	, 59.892391890714244	, -1.3108994391200481	, ZE3 9JZ
2561453	, 59.89157217283275	, -1.3138470843325012	, ZE3 9JY
2561452	, 59.87528613934355	, -1.3075024472833292	, ZE3 9JX
2561451	, 59.8736691204111	, -1.305660718172103	, ZE3 9JW
2561450	, 59.88954400162179	, -1.3072059139252135	, ZE3 9JU
2561449	, 59.87261539003782	, -1.3067721279174649	, ZE3 9JT
2561448	, 59.89059722473173	, -1.2941571428112393	, ZE3 9JS
2561447	, 59.89178480652863	, -1.3115731991186586	, ZE3 9JR
2561446	, 59.87666682126091	, -1.296917299638056	, ZE3 9JP
2561445	, 59.86752530692186	, -1.281860196161964	, ZE3 9JN
2561444	, 59.88641798314537	, -1.306985078291716	, ZE3 9JL
2561443	, 59.887103540517636	, -1.3075783081915386	, ZE3 9JJ
2561442	, 60.757767191962465	, -0.8600920191283241	, ZE2 9ZG

@prefix field:

<<http://field.register.gov.uk/field/>>.

@prefix postcode:

<<http://postcode.register.gov.uk/postcode/>>.

<<http://postcode.register.gov.uk/entry/2438251>>

field:**latitude** "51.51659512019005" ;

field:**longitude** "-0.12927864867614655" ;

field:**postcode** postcode:[WC1A%201AA](http://postcode.register.gov.uk/postcode/WC1A%201AA) .

Registers are:

1. Accessible

2. Authoritative

3. Trustworthy

Problem:
missing columns
typos & inconsistent spelling
data needs cleaning up

Problem:
same data, different sources

A register should be a single source of truth

A register should have a custodian

Robins Pie and Mash

Approval number: [EF 017](#)

Premises contact details

Address

Unit E10 Seedbed Centre
Langston Road
Loughton
IG10 3TQ
GB



Food sector sections approved

- [Section VI:PP](#)
 - Meat products - Processing plant

Food sector sections approved for this premises

- [Section VI:PP](#)
 - Meat products - Processing plant

This page uses data from open registers.

View the registers

[Premises](#)

[Products of animal origin premises](#)

[Products of animal origin section](#)

[Products of animal origin activity](#)

[Food establish category](#)

[Is there anything wrong with the data on this page?](#)

ALPHA This is a prototype

EF 017

An entry in the [Products of animal origin premises register](#)

hash: 122f398707c48eba46885adda47799a978c3ae13 [?](#)

<code>products-of-animal-origin-premises</code>	<code>EF 017</code>
<code>premises</code>	<code>10013933205</code>
<code>food-establishment-categories</code>	<code>[Section VI:PP]</code>
<code>text</code>	

This data is available as: [json](#), [ttl](#), [yaml](#), [html](#), [tsv](#), [csv](#) and [atom](#)

History

ALPHA

This is a prototype

10013933205

An entry in the [Premises register](#)

hash: ebb985f3afca8fb1f45a34c1f663c042e9ccb656 

premises	10013933205
name	Robins Pie and Mash
address	10013933205
start-date	
end-date	
company	

This data is available as: [json](#), [ttl](#), [yaml](#), [html](#), [tsv](#), [csv](#) and [atom](#)

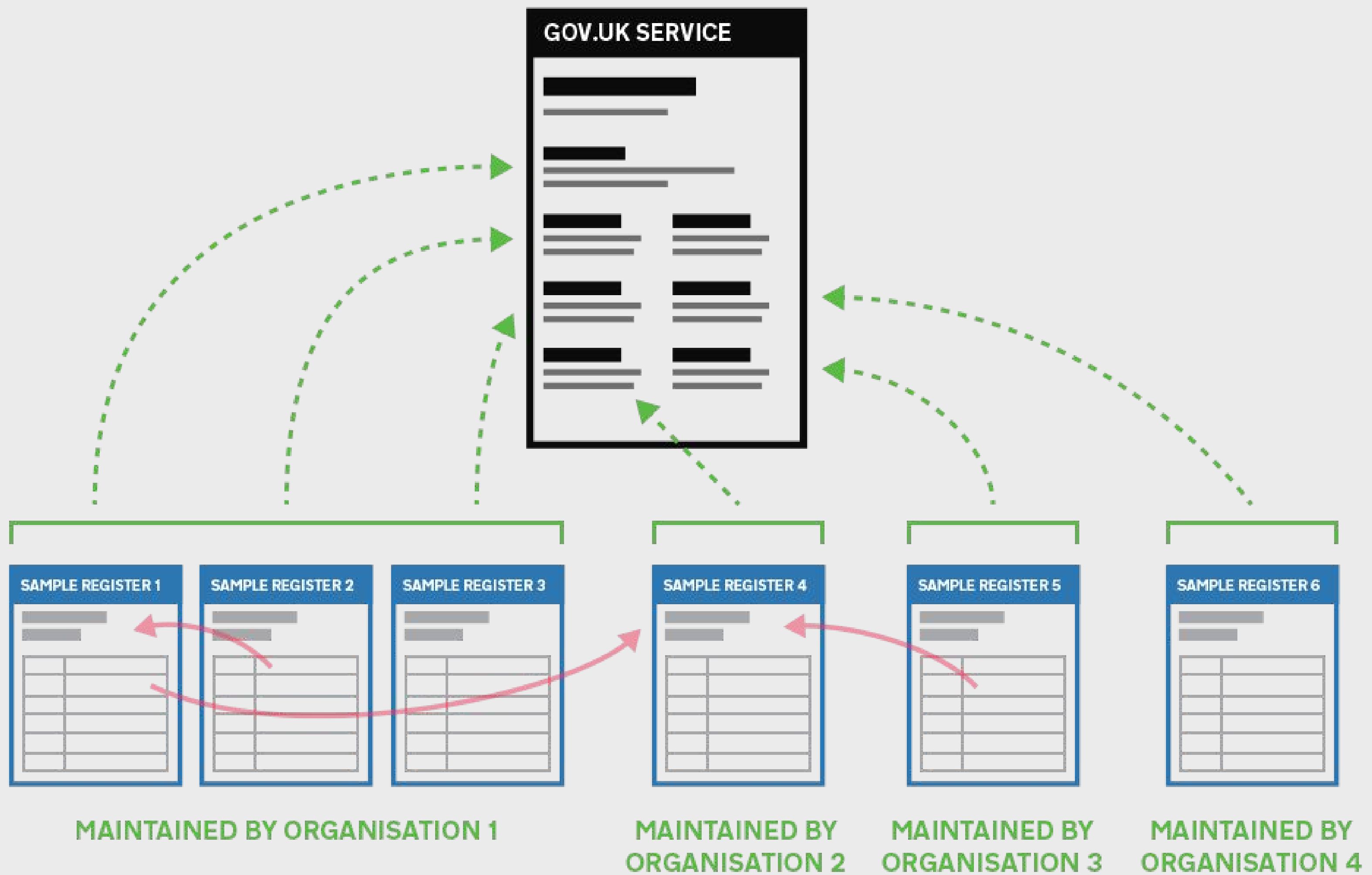
ALPHA This is a new service – your [feedback](#) will help us to improve it.

Record 10013933205

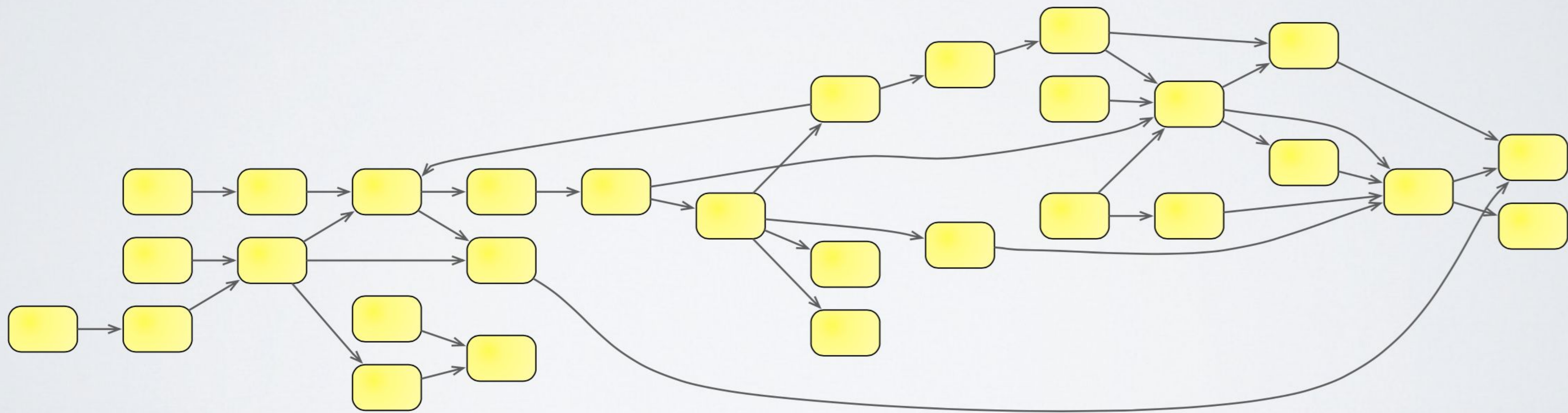
A record in the [Address register](#)

The latest entry for this record is:

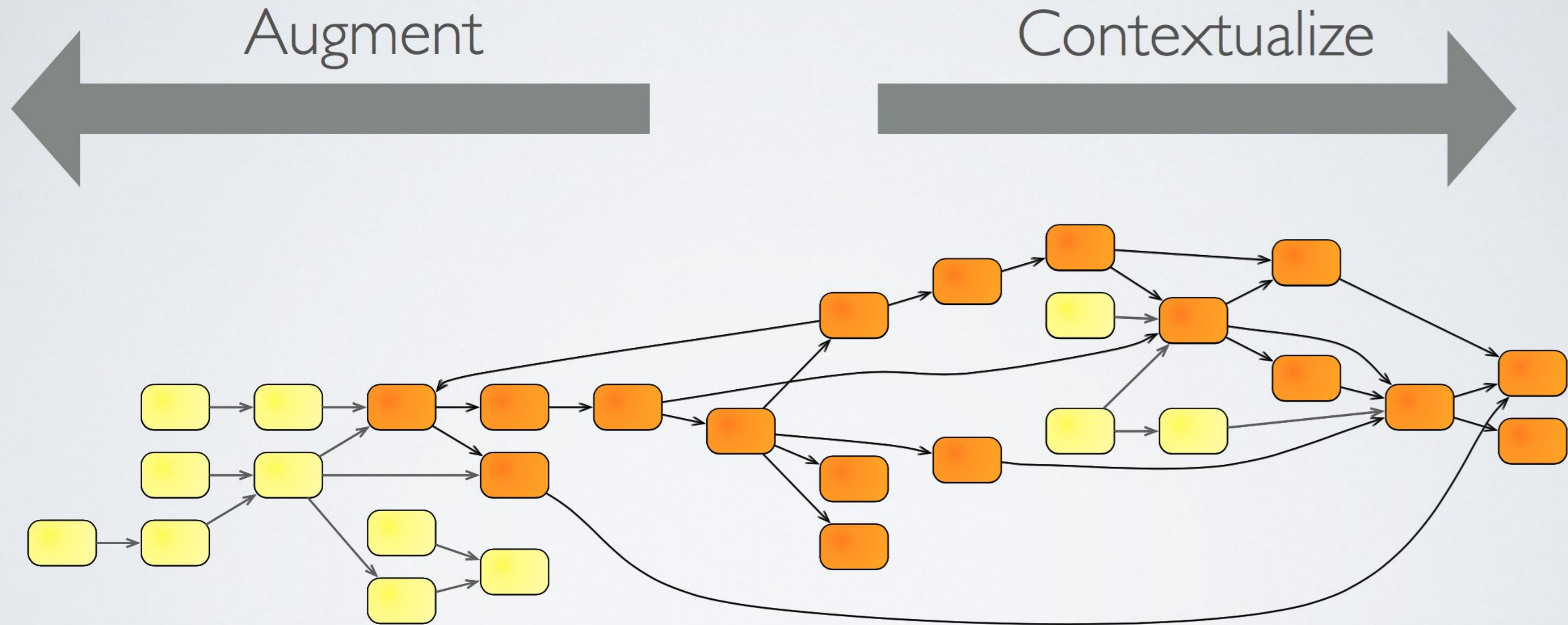
Field	Value
address	10013933205
area	Essex
country	GB
latitude	51.6449066223324
locality	
longitude	0.08892037083728083
postcode	IG10 3TQ
property	Unit E10 Seedbed Centre
street	Langston Road



Upstream & Downstream



Upstream & Downstream



Registers are:

1. Accessible

2. Authoritative

3. Trustworthy

Problem: where did I get this data from again?

A register should be trustworthy

Blog

Technology at GDS

Organisations: [Government Digital Service](#)

Guaranteeing the integrity of a register

Philip Potter, 13 October 2015 — [GaaP, Transformation](#)

Last month we blogged about [registers: authoritative lists you can trust](#). To recap, a register is a canonical source of data, with a clearly-defined custodian. You should be able to trust the integrity of the data that you get from a register.

If you get a record of a company from Companies House, you should be certain that nobody has tampered with the record. Further, you should be able to show it to someone else and demonstrate to them that this is an official

A register should
have guaranteed
integrity

Bridge St Café

★★★★★

20th Feb 2014

Prima Doner

★★

15th Apr 2014

The Bull

★★★

5th Jun 2014

The Tall Ship

★★★★★

30th Oct 2014

Roy's Rolls

★★★

10th Jan 2015

a
|

Bridge St Café
★★★★★
20th Feb 2014

b
|

Prima Doner
★★
15th Apr 2014

c
|

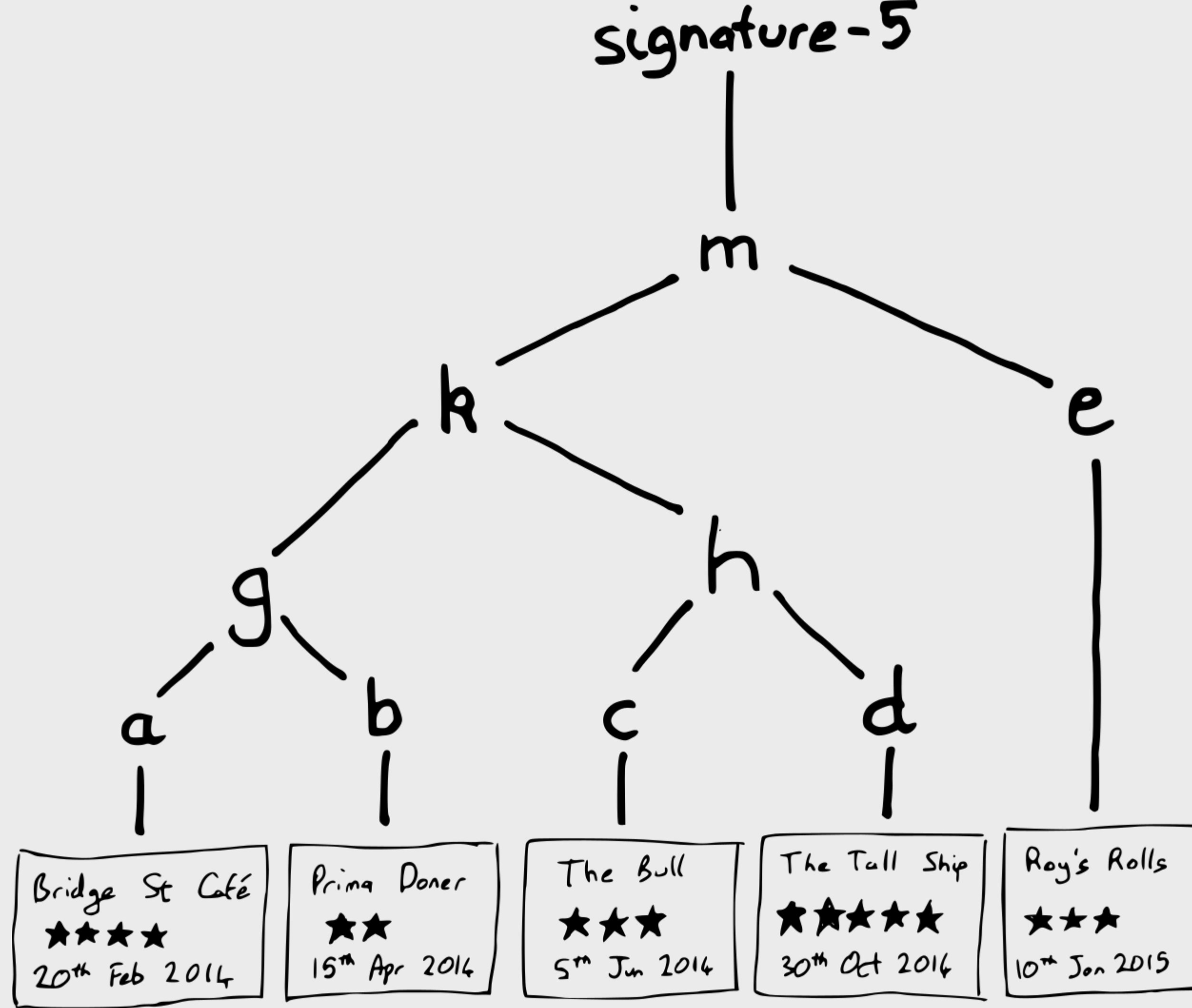
The Bull
★★★
5th Jun 2014

d
|

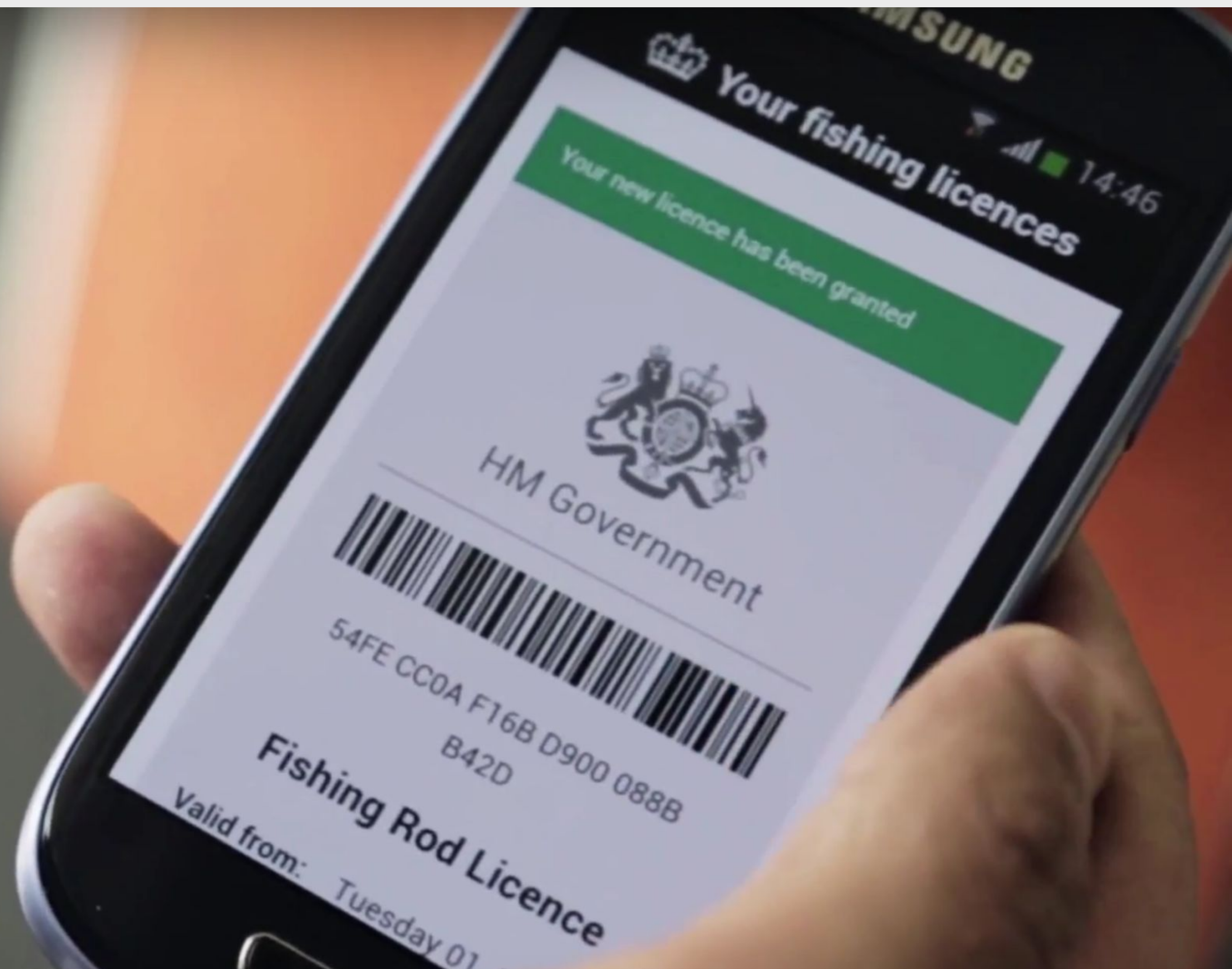
The Tall Ship
★★★★★
30th Oct 2014

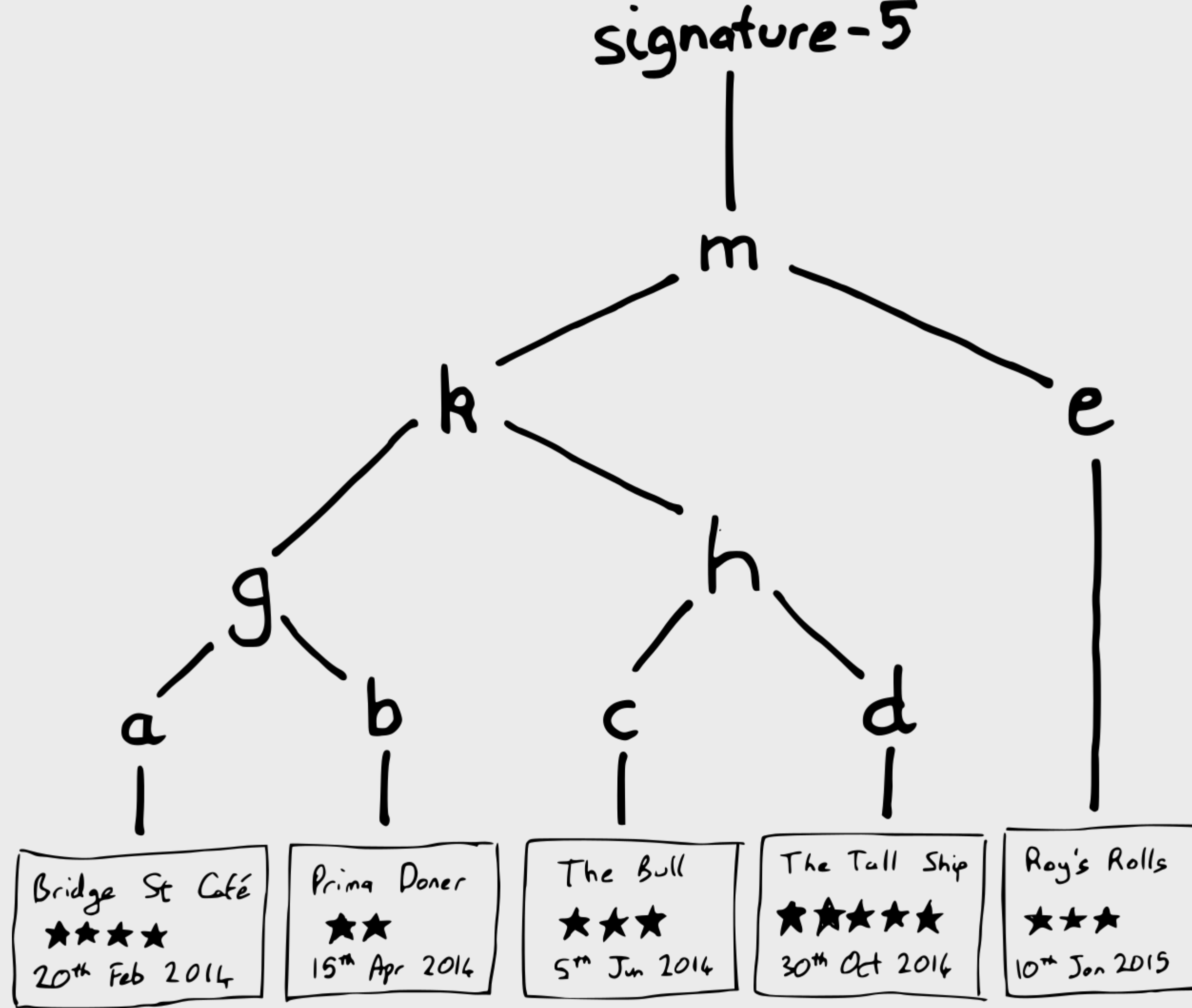
e
|

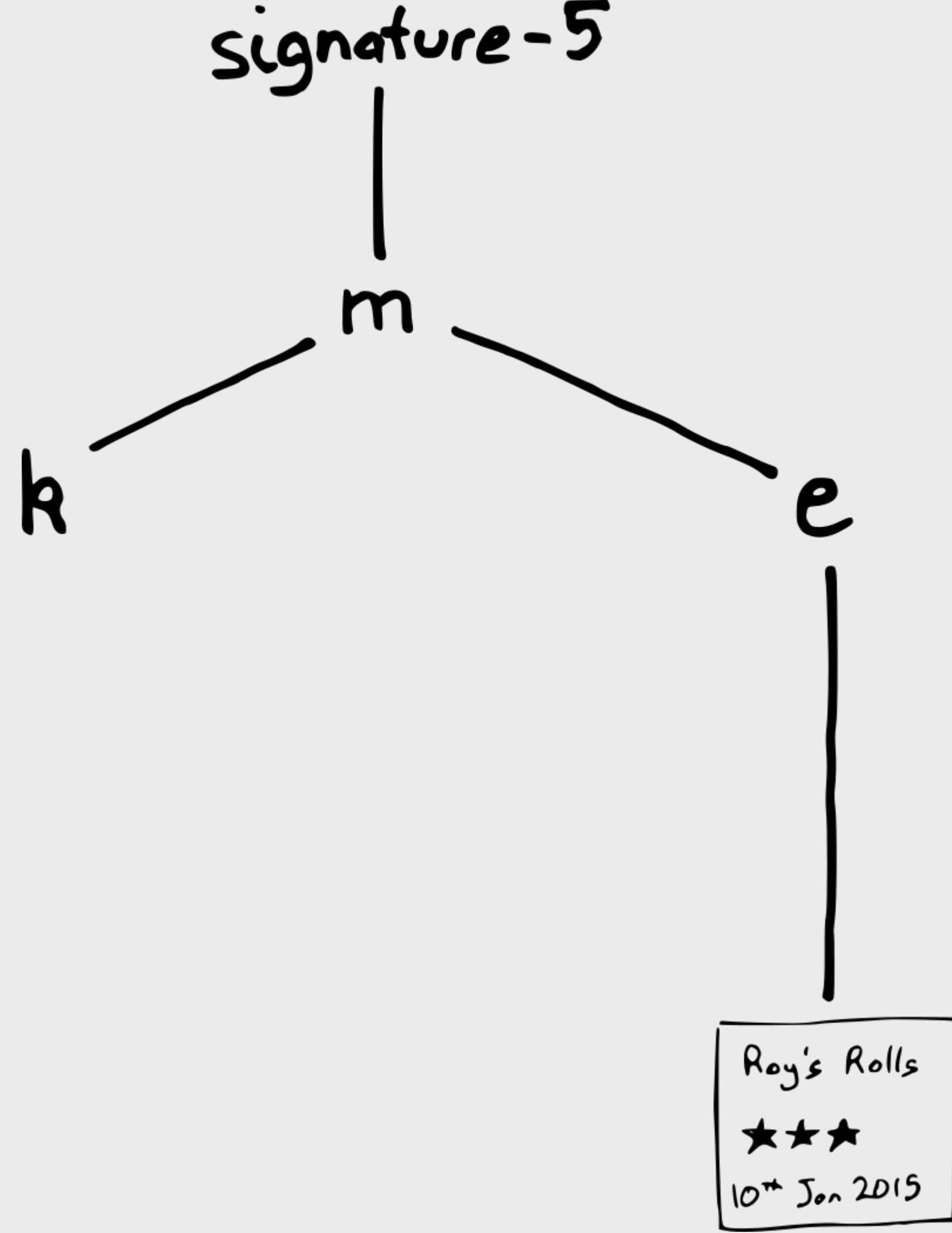
Roy's Rolls
★★★
10th Jan 2015



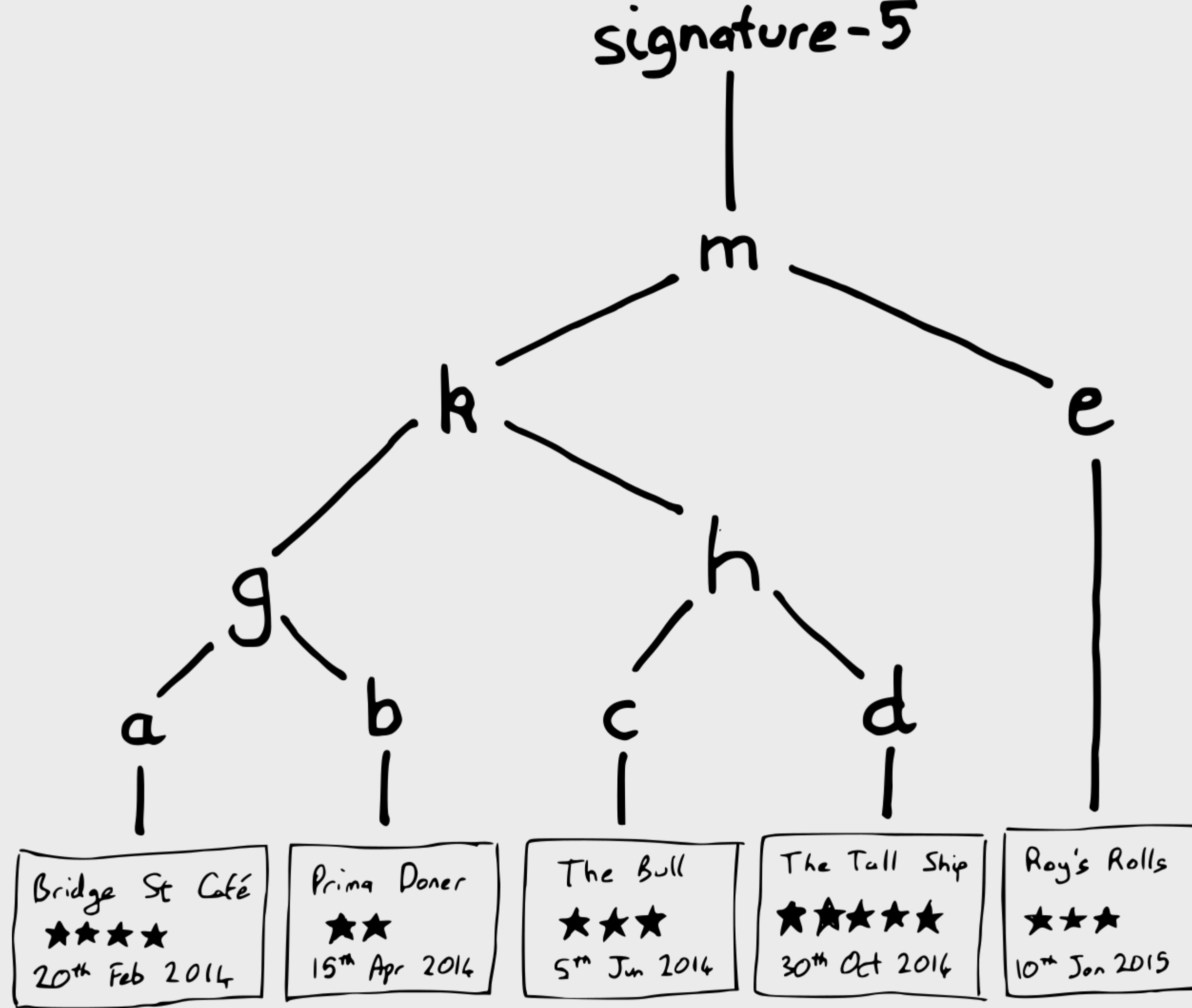
A record in a register should have a digital proof of authenticity



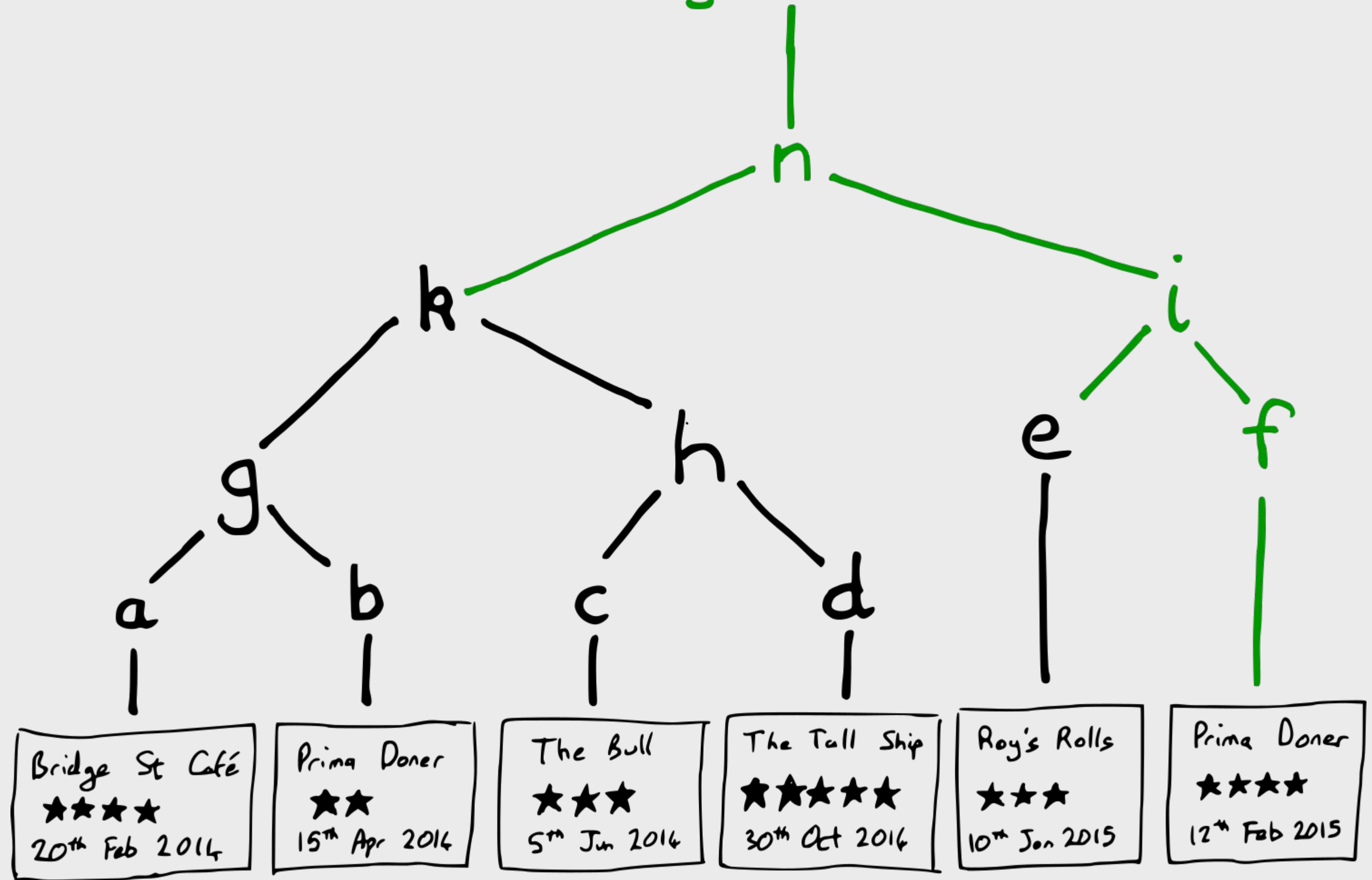




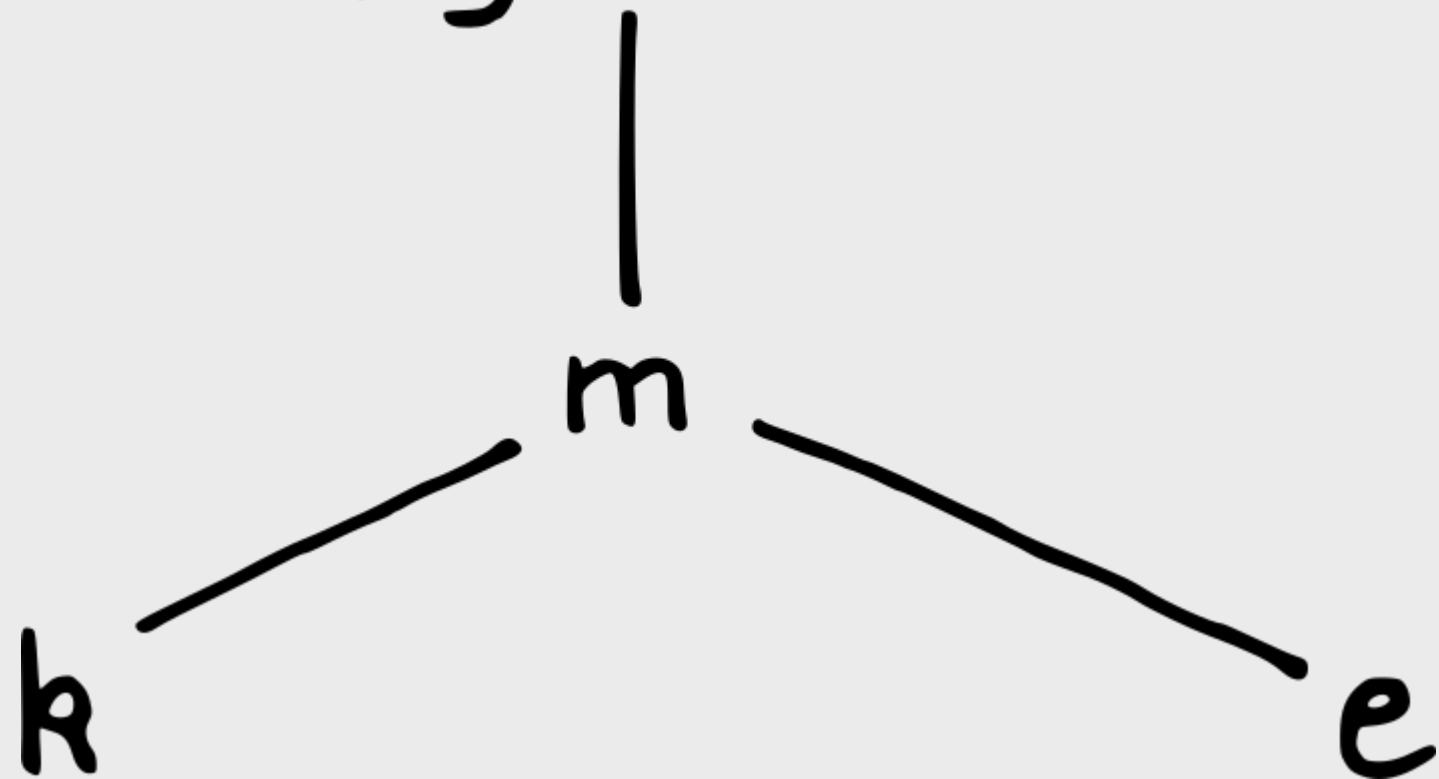
A register should keep its word



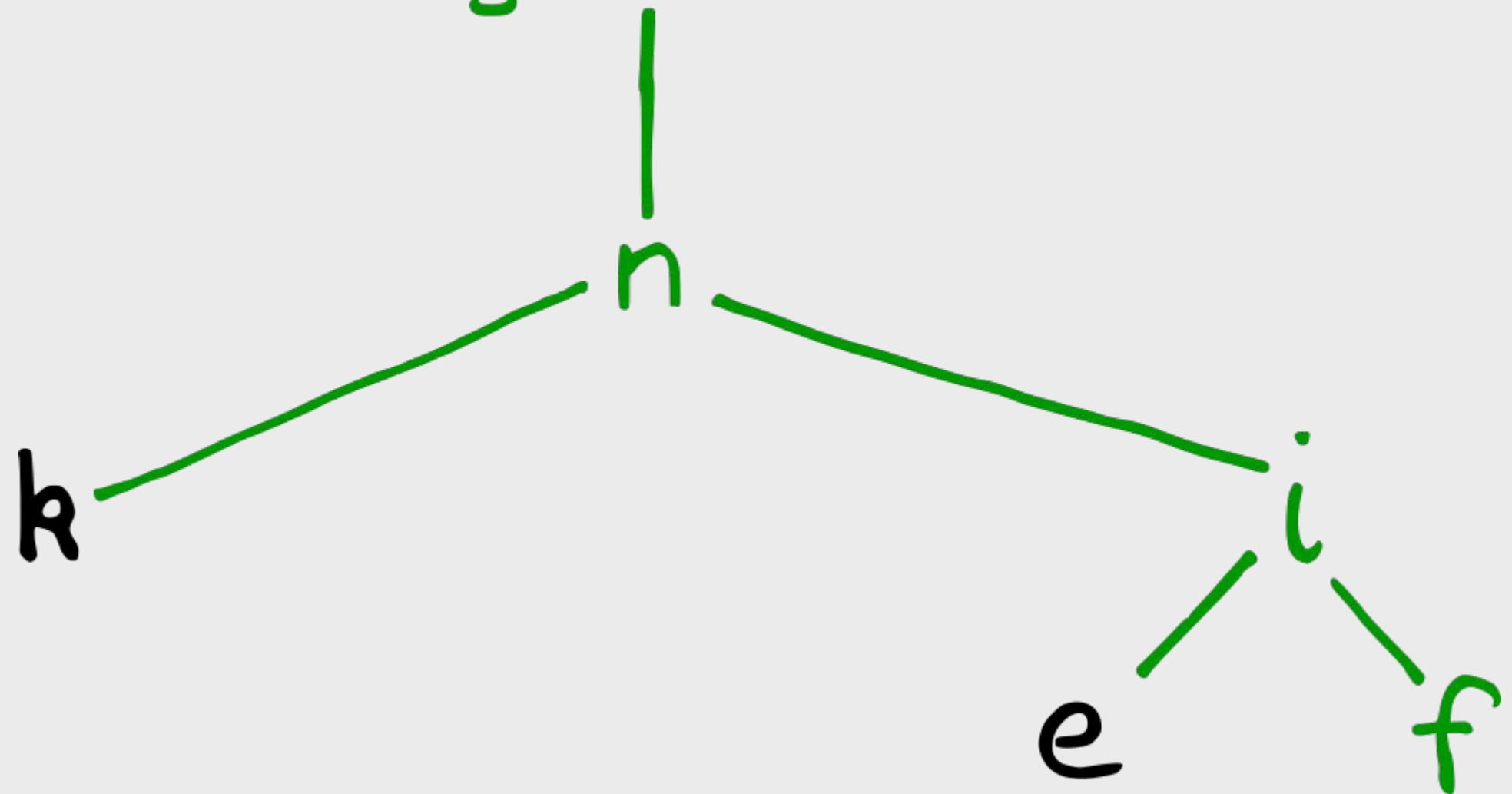
signature-6



signature-5



signature-6



Tracking changes

ALPHA

This is a prototype

EF 017

An entry in the [Products of animal origin premises register](#)

hash: 122f398707c48eba46885adda47799a978c3ae13 

products-of-animal-origin-premises	EF 017
premises	10013933205
food-establishment-categories	[Section VI:PP]
text	

This data is available as: [json](#), [ttl](#), [yaml](#), [html](#), [tsv](#), [csv](#) and [atom](#)

ALPHA

This is a prototype

EF 017

An entry in the [Products of animal origin premises register](#)

hash: bf1a25d12d25e5b3b4bde08ba49282b7062ee88c

?

products-of-animal-origin-premises	EF 017
premises	10013933205
food-establishment-categories	[Section VI:PP, Section X:PP]
text	

This data is available as: [json](#), [ttl](#), [yaml](#), [html](#), [tsv](#), [csv](#) and [atom](#)

History of EF 017

Entry	Hash
<u>5817</u>	<u>2466884568528f3d8aba8eafca68cdab19a0585a</u>
<u>3416</u>	<u>0dee9808e60ba7fa9100197af26b53ed008104ec</u>

WALL OF FAME:

MICHAEL UNA 53

JAVIER TORRES 56

MICHAEL DÜRRIG 53

PHILLIP POTTER 52

BLT 58

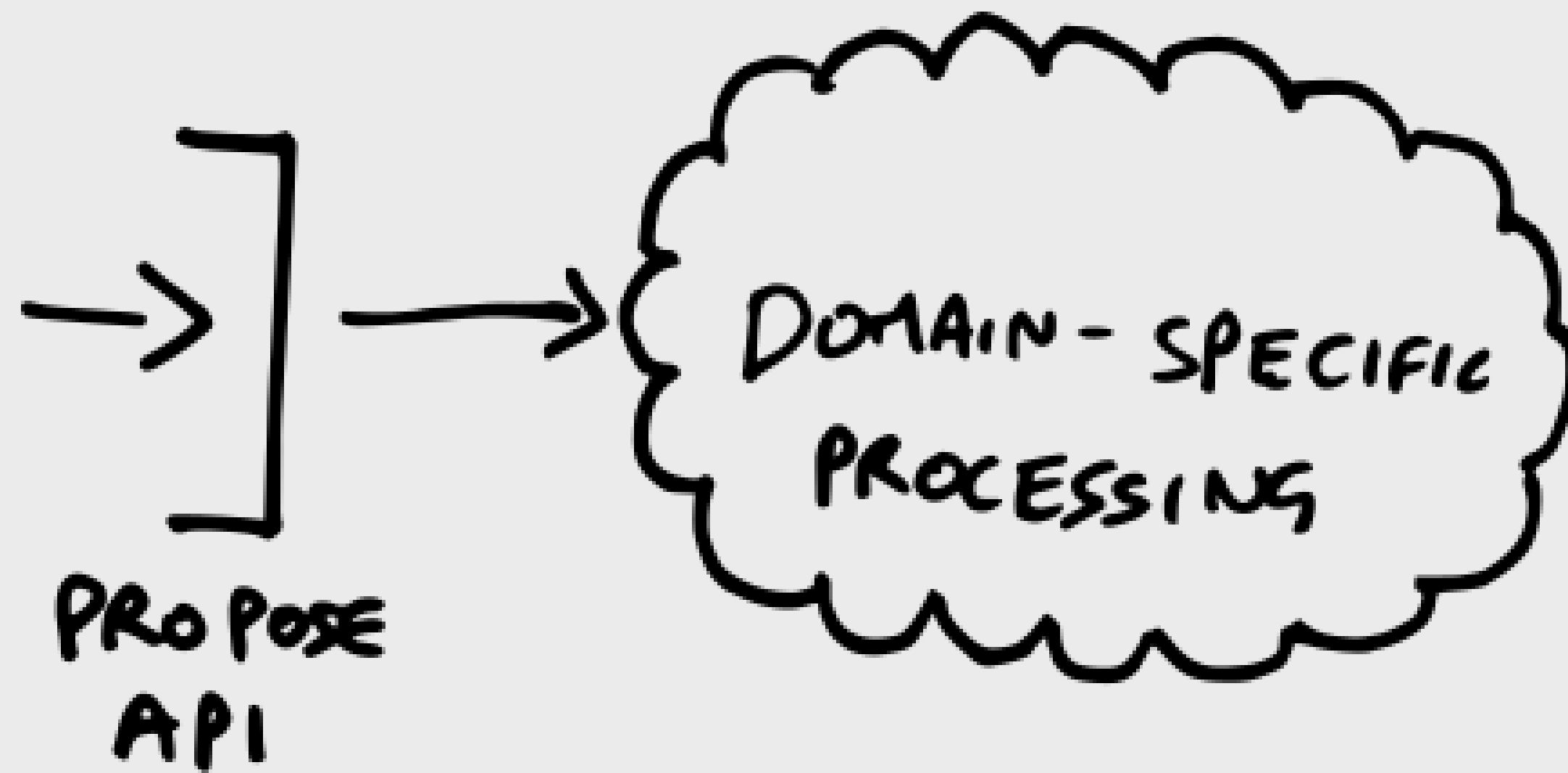
JAVIER TORRES 41

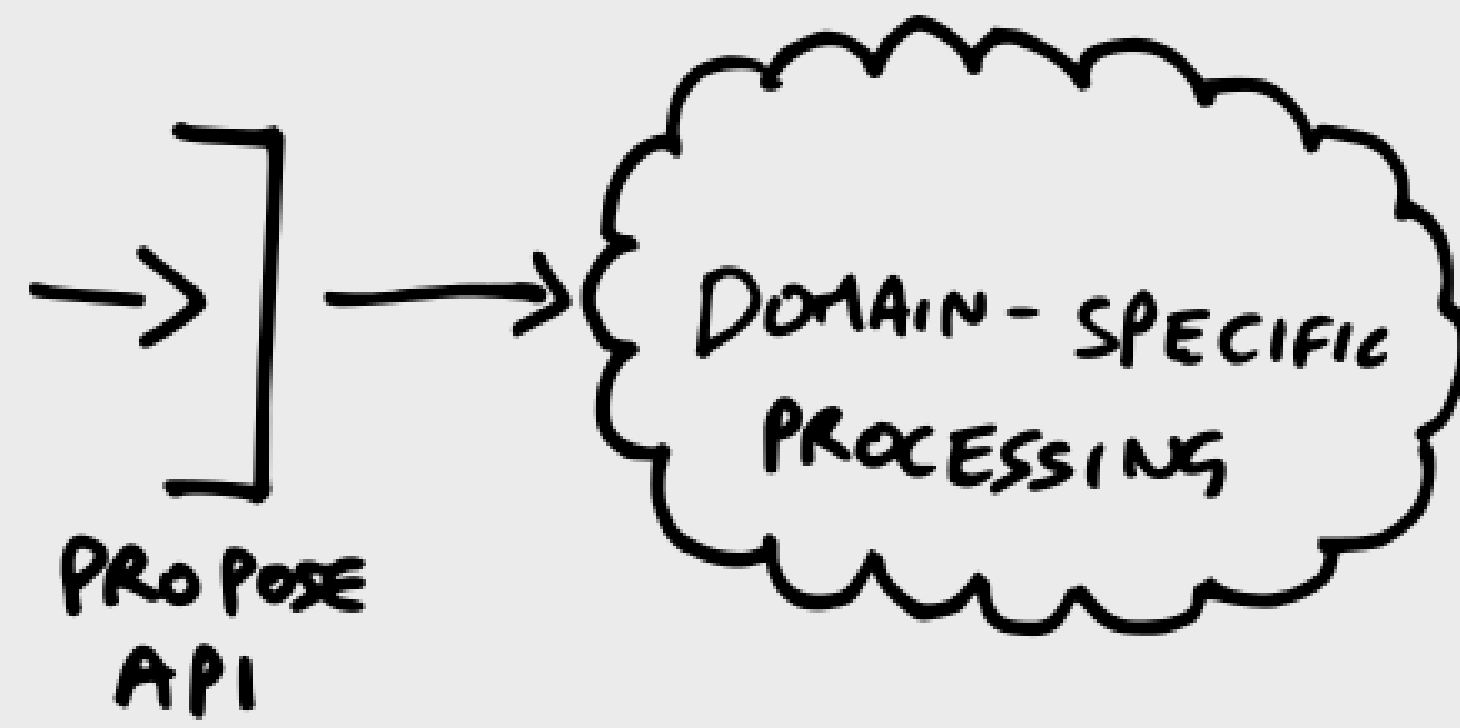
WALL OF FAME:

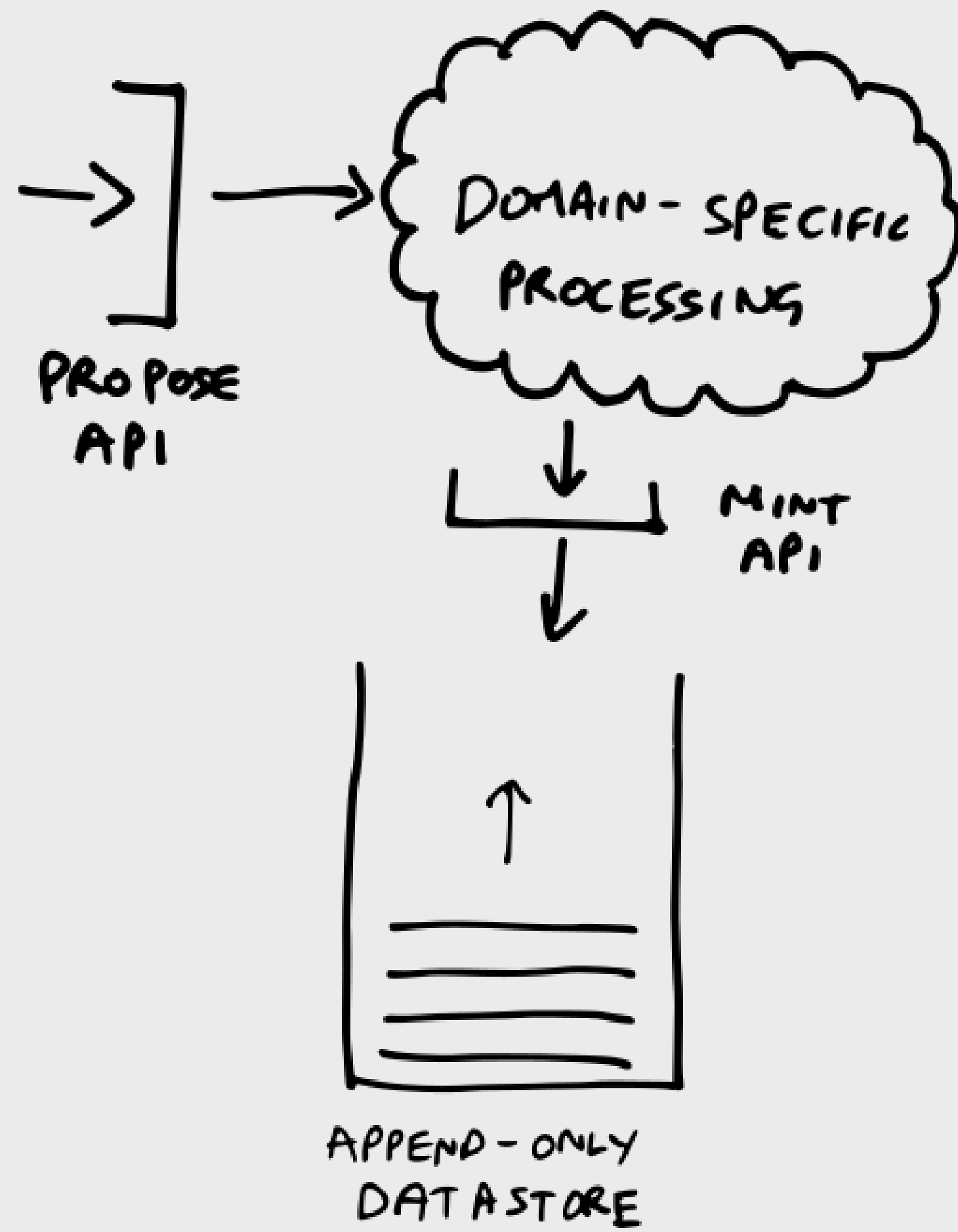
MICHAEL UNA	53 ²⁰ 31
JAVIER TORRES	56
MICHAEL DÜRRIG	53
PHILLIP POTTER	52
BLT 19	52 23
JAVIER TORRES	41
Garnett	56 23

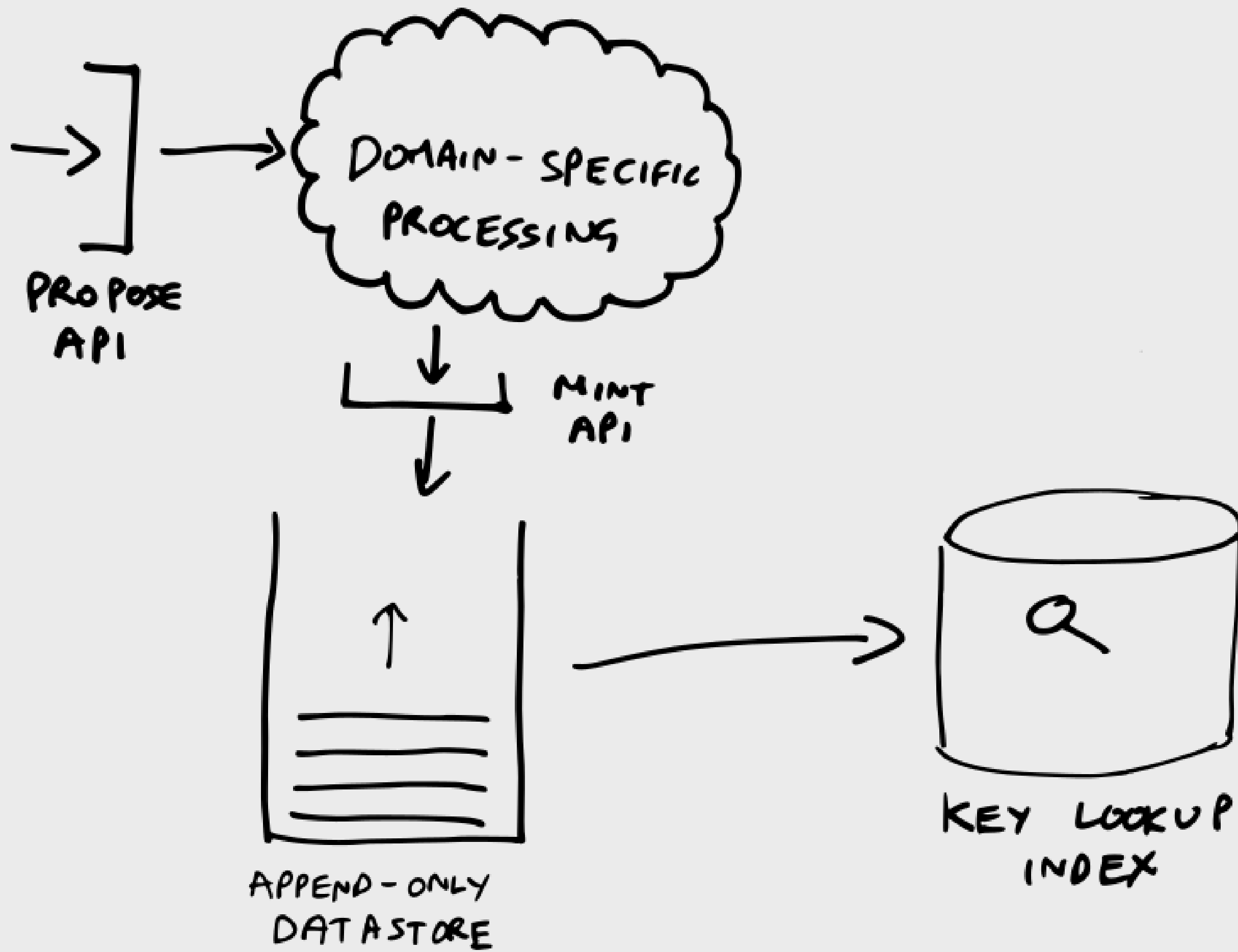
Putting it all together

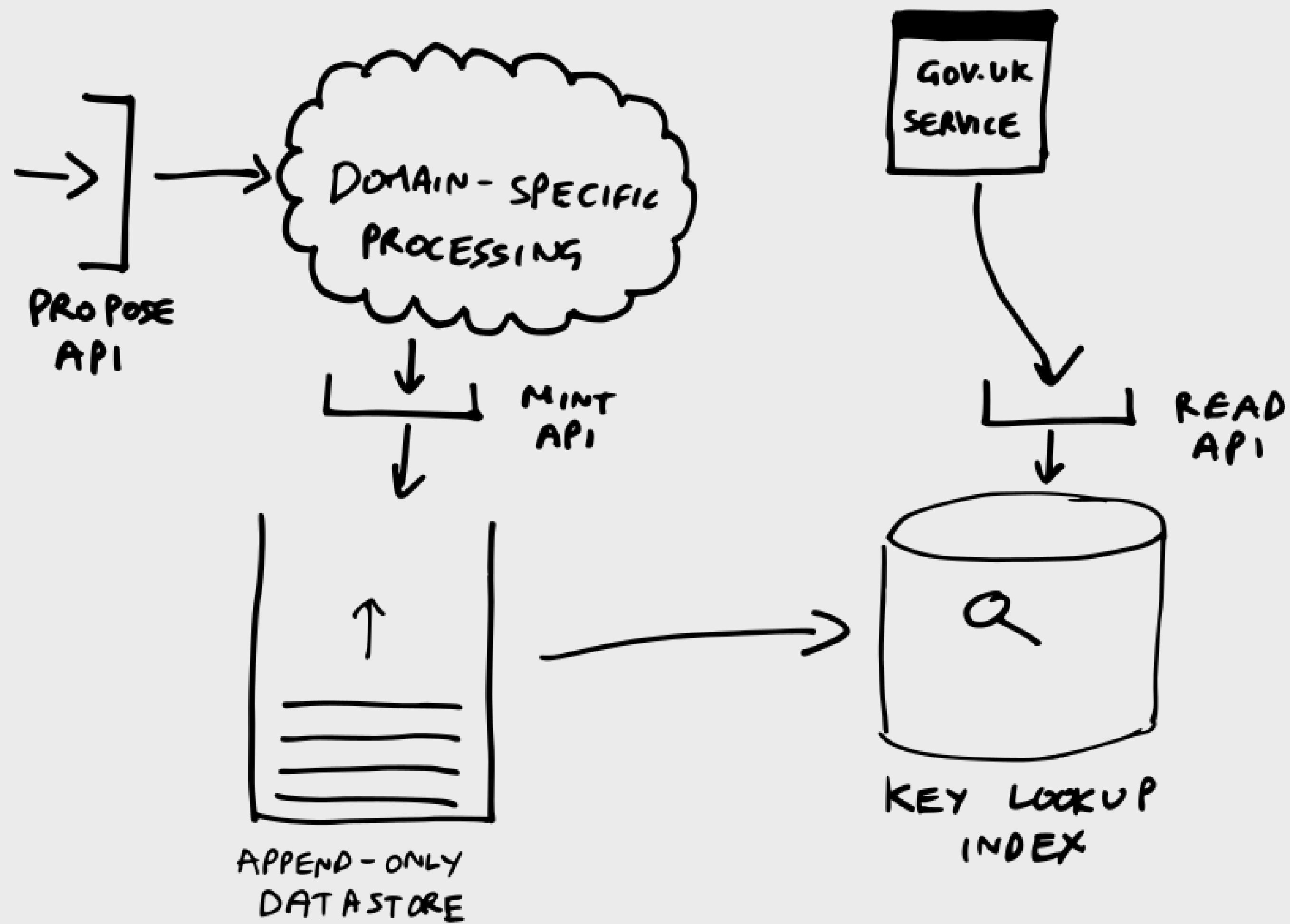
→]
PROPOSE
API

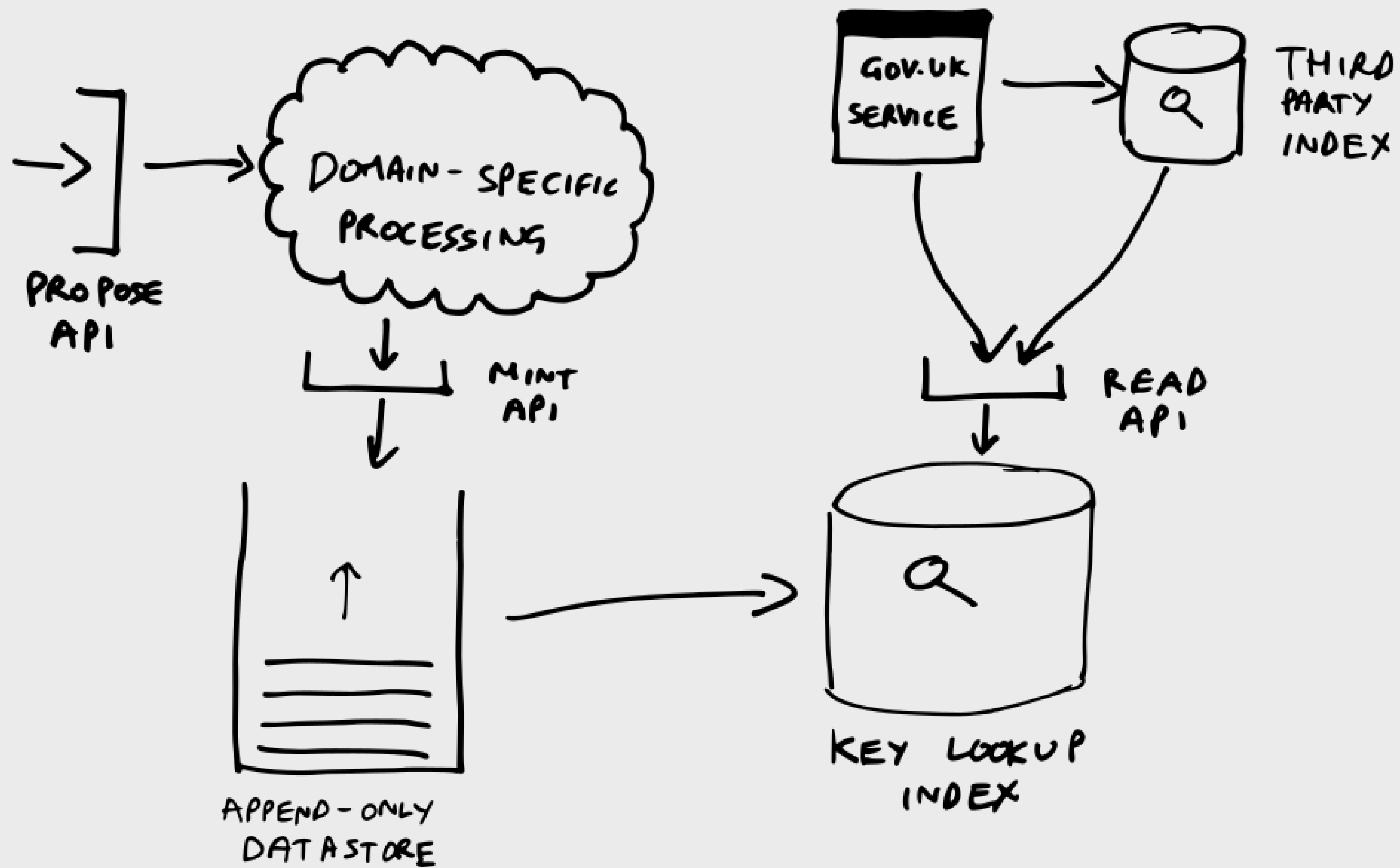












The future of registers

We don't have all the answers yet

We're only just beginning to ask the right questions

There are still unresolved issues

**Registers: authoritative
lists you can trust**

References

www.gov.uk/design-principles

gds.blog.gov.uk/2015/10/13/the-characteristics-of-a-register

gdstechnology.blog.gov.uk/2015/10/13/guaranteeing-the-integrity-of-a-register



Thanks!

Philip Potter
@philandstuff