

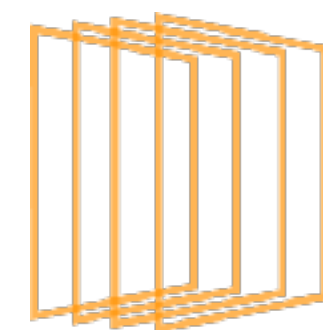
# HERITAGE CONNECTOR

TRANSFORMING TEXT INTO DATA TO EXTRACT  
MEANING AND MAKE CONNECTIONS

**SCIENCE  
MUSEUM  
GROUP**



**V&A**



**TOWARDS  
A NATIONAL  
COLLECTION**



**Arts and  
Humanities  
Research Council**

**Kalyan Dutia**, Research Developer

**Rhiannon Lewis**, Project Co-ordinator

**John Stack**, Digital Director

**Jamie Unwin**, Technical Architect Collections

**Jane Winters**, Professor of Digital Humanities & Pro-Dean for Libraries

**Angela Wolff**, Full Stack Developer, V&A

How can existing digital tools and methods be used to build relationships at scale between poorly and inconsistently catalogued digitised collection objects and other content sources?







# Zeiss Compound Microscope

MADE: [1907](#)



## DETAILS

CATEGORY:	<a href="#">Scientific Instruments &amp; Research</a>
OBJECT NUMBER:	Y1991.49.2/1
TYPE:	<a href="#">compound microscope</a>
TAXONOMY:	<div>furnishing and equipment<ul style="list-style-type: none"><li>└ tools &amp; equipment<ul style="list-style-type: none"><li>└ optical instrument<ul style="list-style-type: none"><li>└ microscope</li></ul></li></ul></li><li>└ furnishing and equipment<ul style="list-style-type: none"><li>└ tools &amp; equipment<ul style="list-style-type: none"><li>└ optical instrument<ul style="list-style-type: none"><li>└ microscope</li></ul></li></ul></li></ul></li></ul></div>
CREDIT:	Gift of Central Manchester Health Authority

### CITE THIS PAGE

Science Museum Group. Zeiss Compound

### RIGHTS

We encourage the use and reuse of our collection data.



Data in the title, made, maker and details fields are released under [Creative Commons Zero](#)



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[Using our data](#)

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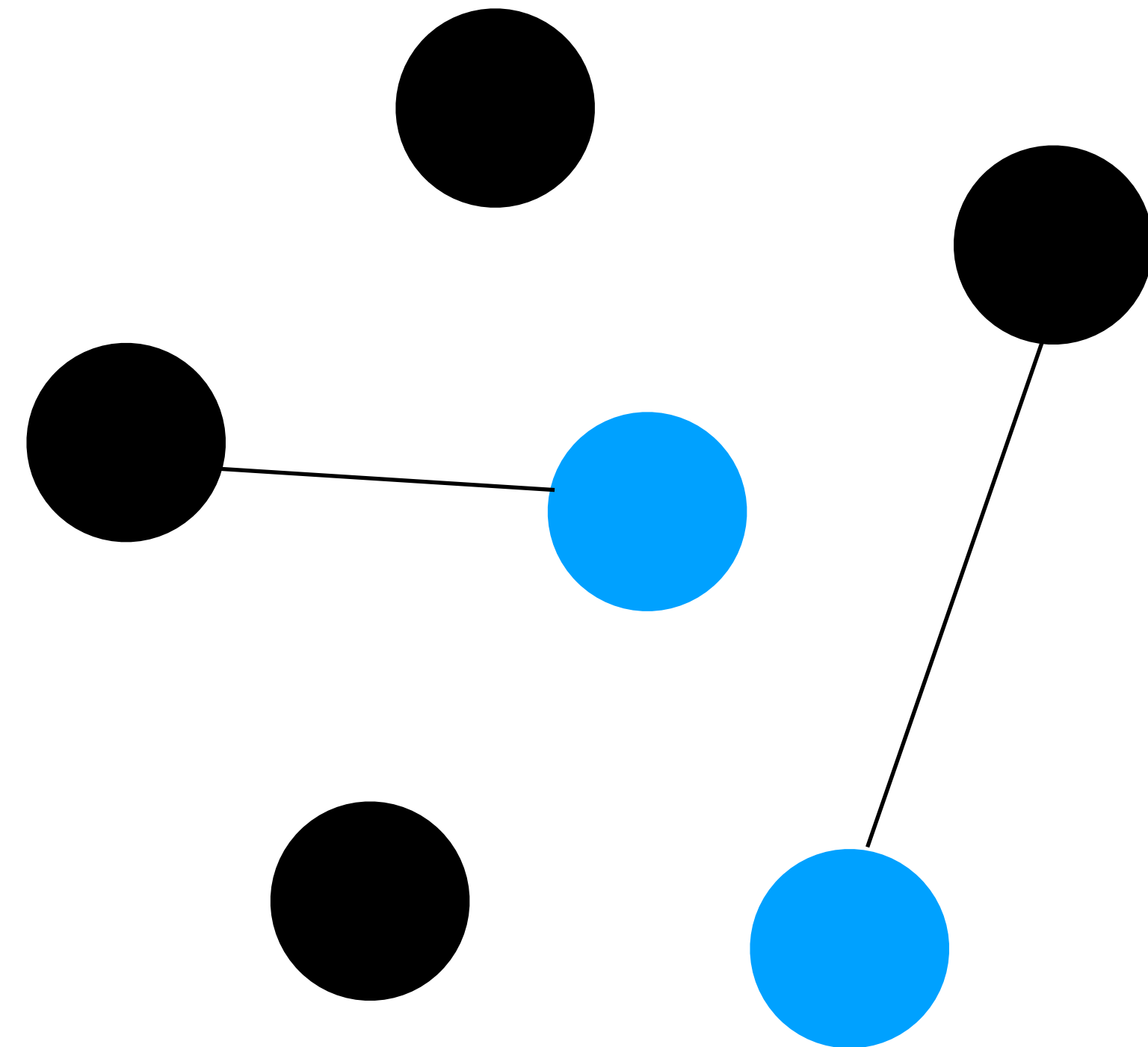
Add [IIIF](#) to [Animal Crossing Art Generator](#)

Download [IIIF](#) manifest [IIIF](#)

Our records are constantly being enhanced and improved, but please note that we cannot guarantee the accuracy of any information shown on this website.

**This is our collection  
now..**

**Small islands of thin data**

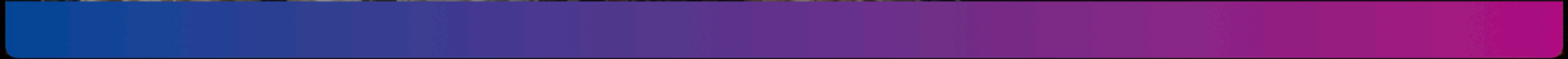




# SEARCH OUR COLLECTION

Search objects, people, categories, object numbers etc. 🔍

Explore over 350,000 objects and archives from the Science Museum, Science and Industry Museum, National Science and Media Museum, National Railway Museum and Locomotion.





BETA

# From the Collections

From ancient Chinese ceramics to Alexander McQueen evening dresses, take an incredible journey through 5000 years of human creativity with our online collections.



## EXPLORE OUR COLLECTIONS

Search more than 1.2 million objects

Search by object, artist, maker...

SEARCH ►

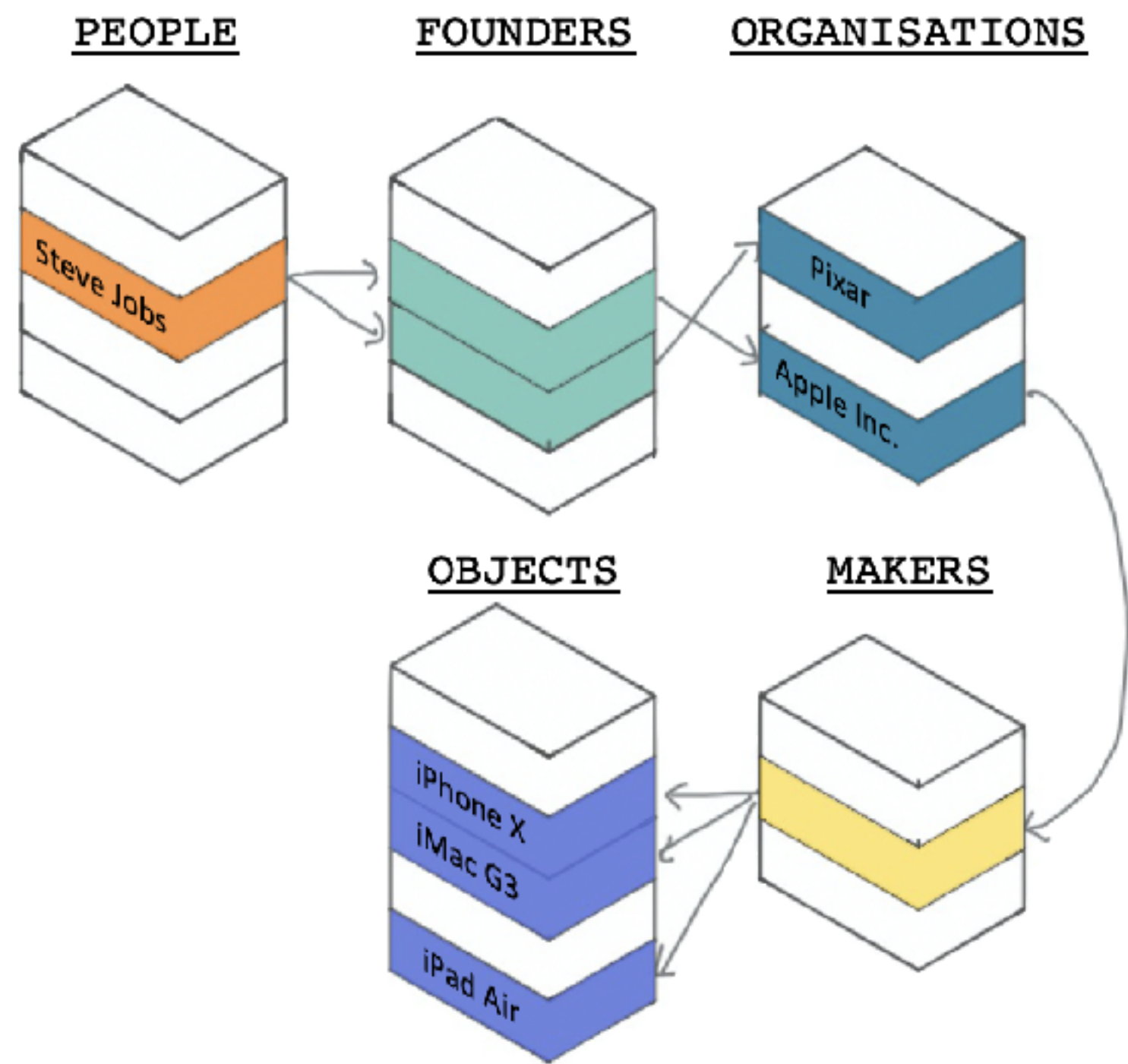
[Add dates](#) +

# HERITAGE CONNECTOR PROJECT

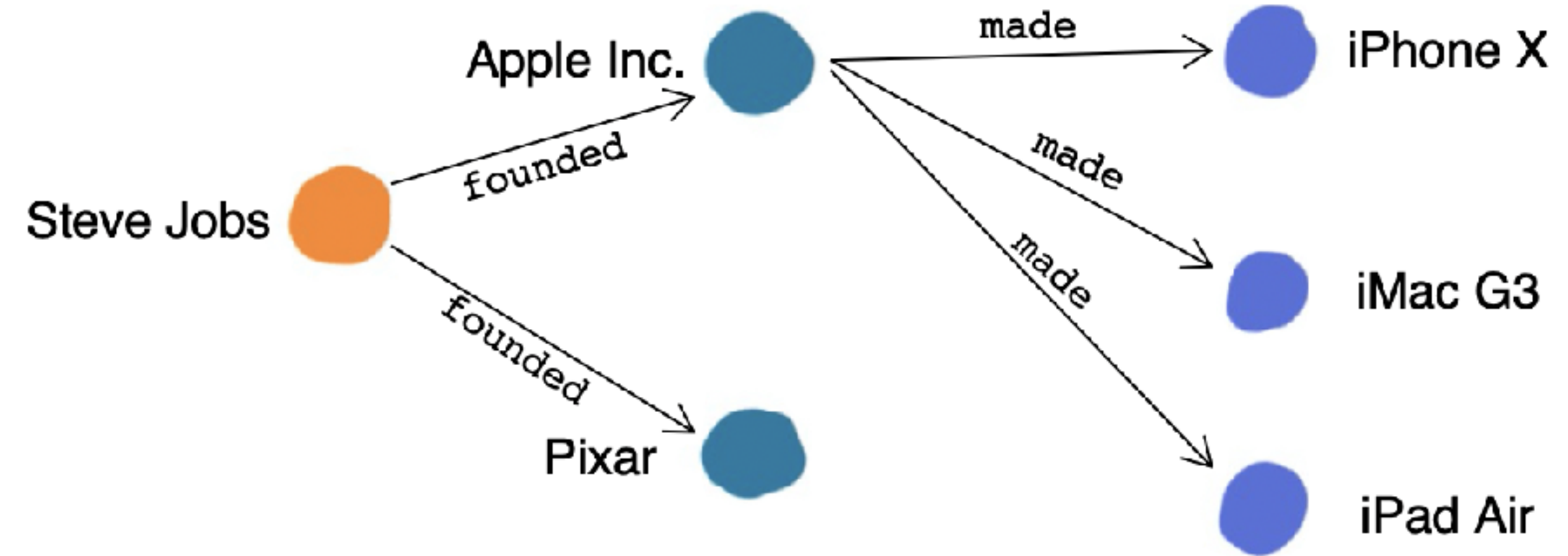
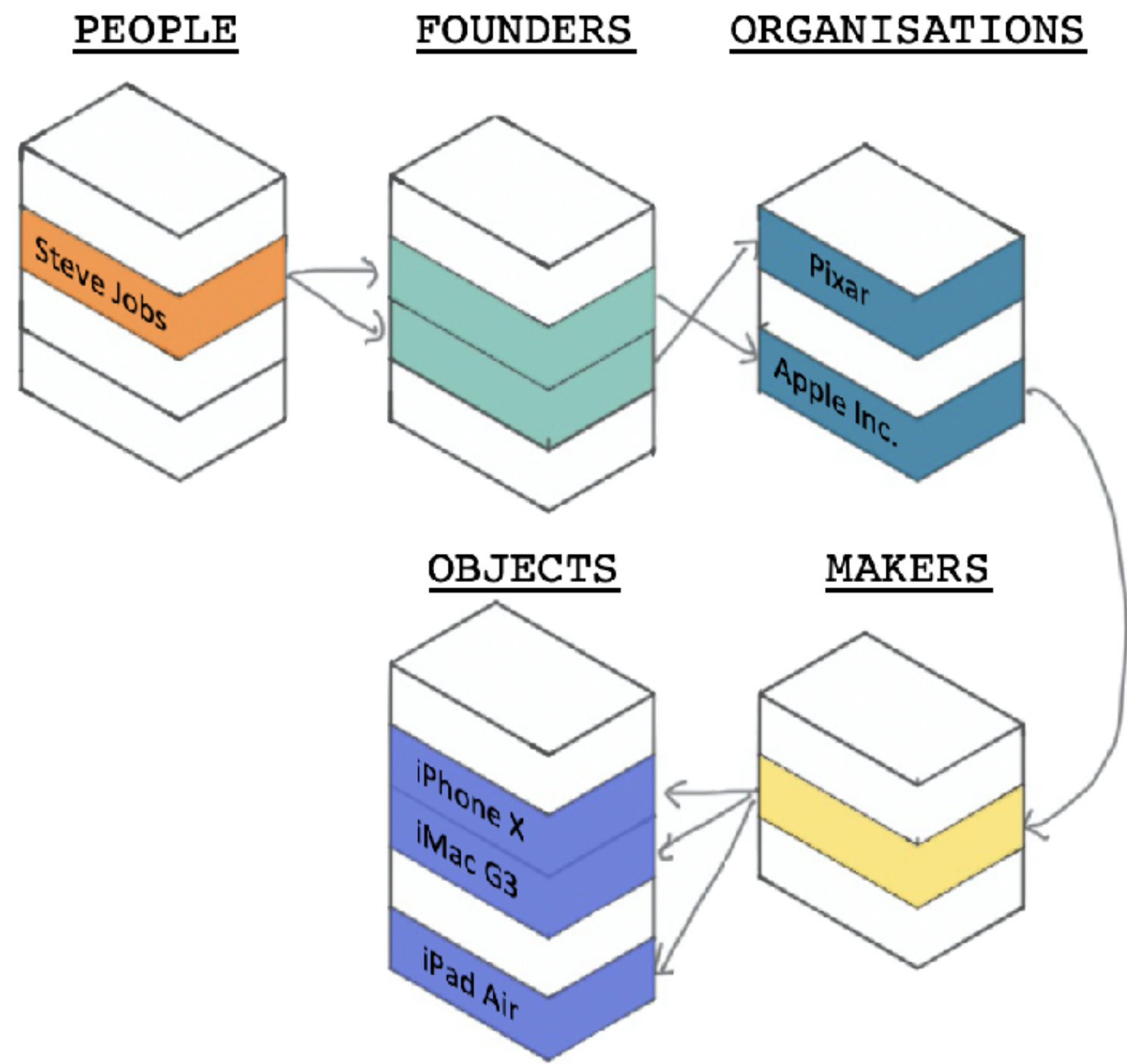
1. Knowledge graphs
2. Linked data
3. Artificial intelligence

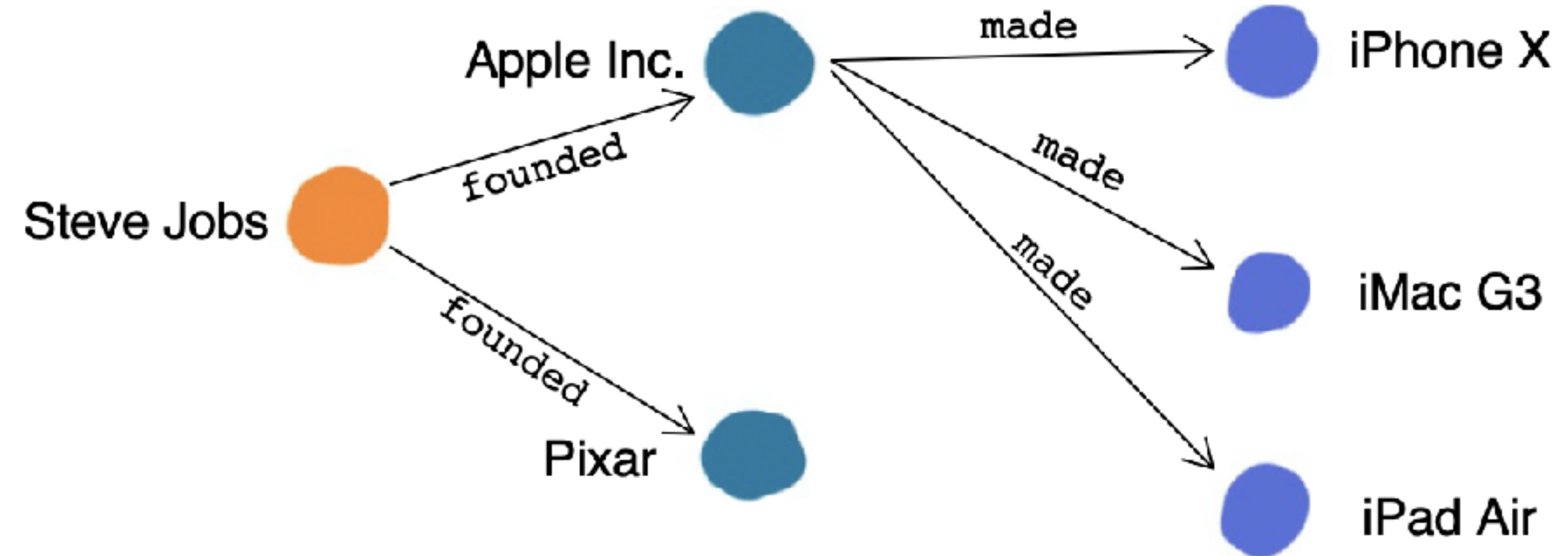
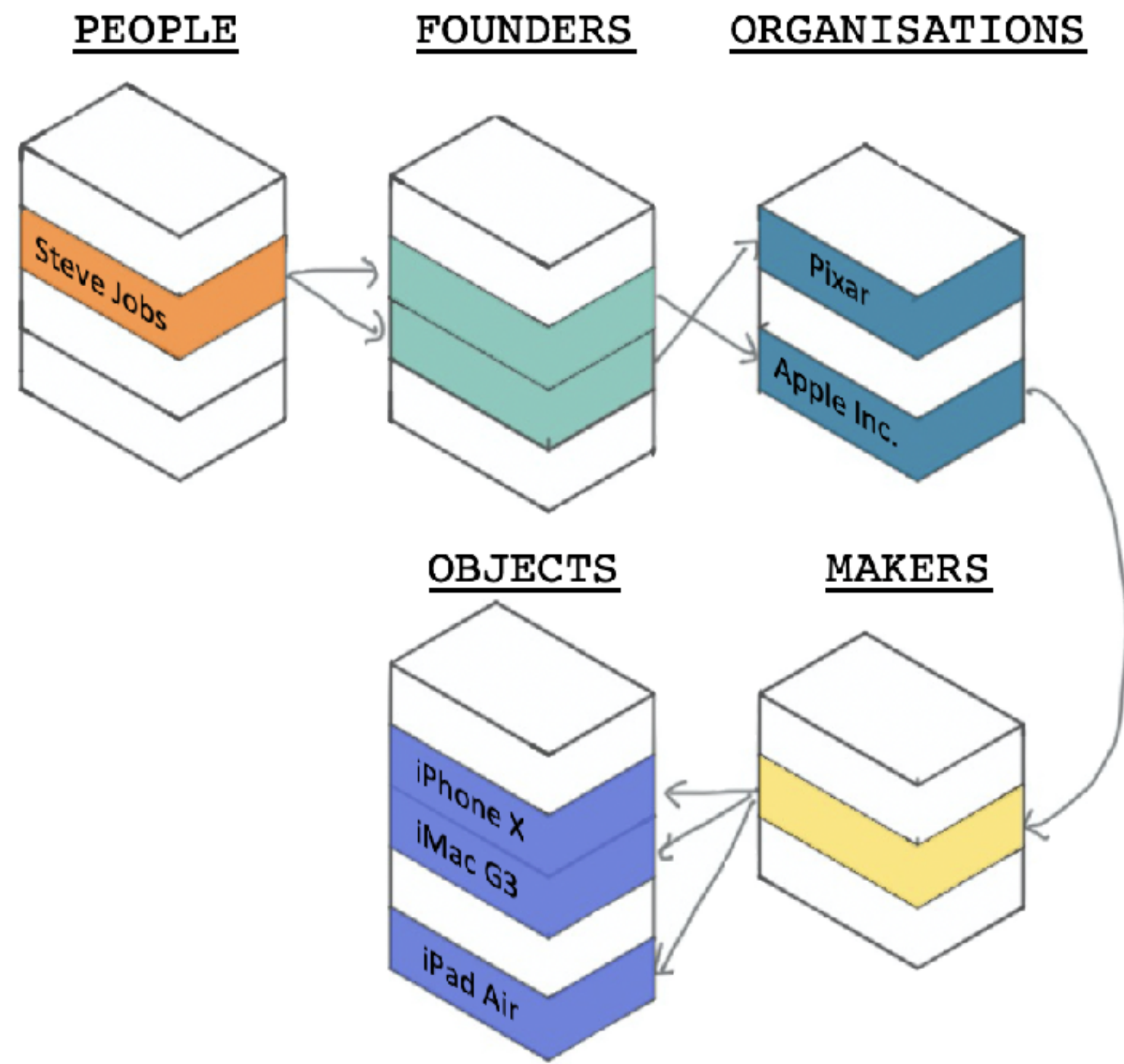


# KNOWLEDGE GRAPHS AND LINKED DATA









text      Anna Atkins was born in Tonbridge, Kent

triples      anna\_atkins, birth\_place, tonbridge\_kent

linked data      <https://collection.sciencemuseumgroup.org.uk/people/cp113991/>  
<https://www.wikidata.org/wiki/Property:P19>,  
<https://www.wikidata.org/wiki/Q936183>





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# General Electric

From Wikipedia, the free encyclopedia

*"GE" redirects here. For other uses, see [GE \(disambiguation\)](#).  
Not to be confused with the former British [General Electric Company \(GEC\)](#).*

**General Electric Company (GE)** is an American [multinational conglomerate](#) incorporated in [New York City](#) and headquartered in [Boston](#). As of 2018, the company operates through the following segments: [aviation](#), [healthcare](#), [power](#), [renewable energy](#), [digital industry](#), [additive manufacturing](#) and [venture capital and finance](#).<sup>[2][3]</sup>

In 2020, GE ranked among the [Fortune 500](#) as the 33rd largest firm in the [United States](#) by [gross revenue](#).<sup>[4]</sup> In 2011, GE ranked among the Fortune 20 as the 14th-most profitable company but has since very severely underperformed the market (by about 75%) as its profitability collapsed.<sup>[5][6][7]</sup> Two employees of GE—[Irving Langmuir](#) (1932) and [Ivar Giaever](#) (1973)—have been awarded the [Nobel Prize](#).<sup>[8]</sup>

Contents [hide]	
1	History
1.1	Formation
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1.4	Television
1.5	Power generation
1.6	Computing
1.7	Acquisitions and divestments
1.8	Fraud allegations and notice of possible SEC civil action
2	Financial performance
2.1	Dividends
3	Stock
4	Bribery
5	Corporate affairs
5.1	CEO

**General Electric Company**

Type	Public
Traded as	NYSE: <a href="#">GE</a> S&P 100 component S&P 500 component
ISIN	<a href="#">US3696041033</a>
Industry	Conglomerate
Predecessor	<a href="#">Edison General Electric</a> <a href="#">Thomson-Houston Electric</a>
Founded	April 15, 1892; 128 years ago in <a href="#">Schenectady, New York, US</a>
Founders	<a href="#">Charles A. Coffin</a> <a href="#">Elihu Thomson</a> <a href="#">Edwin J. Houston</a> <a href="#">Thomas Edison</a> <a href="#">J. P. Morgan</a>



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1.7 Acquisitions and divestments

1.8 Fraud allegations and notice of possible SEC civil action

2 Financial performance

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5 Corporate affairs

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5.2 Corporate recognition and rankings

6 Businesses

6.1 Former divisions

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8 Educational initiatives

9 Marketing initiatives

10 Political affiliation

11 Notable appearances in media

12 See also

13 References


14 Further reading

15 External links

History

Further information: General Electric timeline

Formation



During 1889, [Thomas Edison](#) had business interests in many electricity-related companies, including Edison Lamp Company, a lamp manufacturer in [East Newark, New Jersey](#); [Edison Machine Works](#), a manufacturer of [dynamos](#) and large [electric motors](#) in [Schenectady, New York](#); [Bergmann & Company](#), a manufacturer of electric [lighting fixtures](#), [sockets](#), and other electric lighting devices; and *Edison Electric Light Company*, the [patent](#)-holding company and the financial arm backed by [J. P. Morgan](#) and the

Industry

Conglomerate

Predecessor

Edison General Electric

Thomson-Houston Electric

Founded

April 15, 1892; 128 years ago in Schenectady, New York, US

Founders

Charles A. Coffin

Elihu Thomson

Edwin J. Houston

Thomas Edison

J. P. Morgan

Headquarters

Boston, Massachusetts, US

Area served

Worldwide

Key people

H. Lawrence Culp Jr.

(Chairman & CEO)

Products

Aircraft engines · Electrical distribution · Electric motors · Energy · Finance · Health care · Software · Wind turbines

Revenue

▼ US\$ 75.619 billion (2020)

Operating income

▲ US\$ 5.197 billion (2020)

Net income

▲ US\$ 5.230 billion (2020)

Total assets

▼ US\$ 253.452 billion (2020)

Total equity

▲ US\$ 35.552 billion (2020)

Number of employees

205,000 (2020)

Subsidiaries

GE Additive

GE Aviation

GE Capital

GE Digital

GE Global Research

GE Hitachi Nuclear Energy

GE Healthcare

GE Power

GE Renewable Energy

GE Ventures

Website

www.ge.com

Footnotes / references

[1]



General Electric			[hide]	
Subsidiaries and divisions	Current	GE Additive · GE Aviation (GE Aviation Systems) · GE Capital · GE Digital · GE Healthcare · GE Power · GE Renewable Energy (LM Wind Power) · GE Research		
	Former and defunct	Australian Guarantee Corporation <sup>1</sup> · Canadian General Electric <sup>1</sup> · Compagnia Generale di Elettricità <sup>2</sup> · Current, powered by GE <sup>2</sup> · Electric Bond and Share Company <sup>2</sup> · GE Aerospace <sup>2</sup> · GE Americom <sup>2</sup> · GE Appliances <sup>2</sup> · GE Automation & Controls <sup>2</sup> · GE Betz <sup>2</sup> · GE Capital IT Solutions <sup>2</sup> · GE Capital Rail Services <sup>2</sup> · GE Commercial Finance <sup>1</sup> · GE Energy <sup>1</sup> · GE Equipment Services <sup>2</sup> · GE Home & Business Solutions <sup>2</sup> · GE Industrial <sup>2</sup> · GE Infrastructure <sup>1</sup> · GE Jenbacher <sup>2</sup> · GE Lighting <sup>2</sup> · GE Measurement & Control Solutions <sup>1</sup> · GE Oil and Gas <sup>1</sup> · GE Security <sup>2</sup> · GE Transportation <sup>2</sup> · GE Waukesha <sup>2</sup> · GE Wind Energy <sup>1</sup> · GECIS <sup>2</sup> · GEIS <sup>2</sup> · Genesis Lease <sup>2</sup> · Genworth Financial <sup>2</sup> · Montgomery Ward <sup>2</sup> · Synchrony Financial <sup>2</sup> · Tungsram <sup>1</sup> · United Nuclear Corporation <sup>1</sup> · Utah Construction Company <sup>2</sup> · Whatman <sup>1</sup>		
Joint ventures / shareholdings	Current	Baker Hughes (37%) · CFM International (50%) · Engine Alliance (50%) · GE Hitachi Nuclear Energy (60%) · GE Honda Aero Engines (50%) · Prolec GE (49.99%) · TBS GB		
	Former	Alco-GE (1940–53) · NBC (1926–30, 1986–2004) · NBCUniversal, LLC (2004–13) · Penske Truck Leasing (15.5%) · Wabtec		
Products and brands	Aircraft engines · General Comprehensive Operating System · GEnie · Locomotives · Mazda · Reciprocating engines · Trivection oven · Tungsram			
People	Founders	Charles A. Coffin · Thomas Edison · Edwin J. Houston · J. P. Morgan · Elihu Thomson		
	Executives	Jeffrey R. Immelt · Jack Welch · Bob Wright		
	Outside Directors	James Cash Jr. · John L. Flannery · Ann Fudge · Susan Hockfield · Andrea Jung · Rochelle Lazarus · Sam Nunn · Roger Penske · Vera Silva · Douglas A. Warner III		
Places and facilities	GE Building (30 Rockefeller Plaza) · GE Building (570 Lexington Avenue) · Nela Park · Realty Plot · Research Laboratory · River Works · Specialty Control Plant · Switchgear Plant · Welch Technology Centre			
Sponsorship	Carousel of Progress (1964-65, 1967-73, 1975-85) · Horizons at Epcot (1983-93)			
Other	GE True · The General Electric Concert · General Electric EdgeLab · <i>General Electric Theater</i> · General Imaging · Thomson-Houston Electric Company · Timeline · <i>United States v. General Electric Co.</i> · <i>Diamond v. Chakrabarty</i> · Phoebus cartel · KGEI · <b>WGEO</b>			
<div><div><sup>1</sup> Now integrated into other GE divisions or business groupings · <sup>2</sup> Sold or spun off</div><div><div><div></div></div>Category</div></div>				
Principal owners of the Houston Astros franchise			[show]	
Thomas Edison				[show]
Authority control	BNF: <span>cb11880709c</span> <span></span> <span>(data)</span> <span></span> · ISNI: <span>0000 0001 0943 0267</span> <span></span> · LCCN: <span>n79078780</span> <span></span> · MA: <span>1332737386</span> <span></span> · NKC: <span>olak2003164566</span> <span></span> · SUDOC: <span>027769364</span> <span></span> · VIAF: <span>136799030</span> <span></span> · WorldCat Identities: <span>lccn-n79078780</span> <span></span>			
Categories: <span>General Electric</span>   <span>1892 establishments in New York (state)</span>   <span>Aircraft engine manufacturers of the United States</span>   <span>American companies established in 1892</span>				





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Concept URI

Item Discussion

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Search Wikidata

## General Electric (Q54173)

American multinational conglomerate corporation  
General Electric Company | GE | General Electric Co.

edit

In more languages  
Configure

Language	Label	Description	Also known as
English	General Electric	American multinational conglomerate corporation	General Electric Company GE General Electric Co.
British English	General Electric	No description defined	
French	General Electric	conglomérat américain	
German	General Electric	US-amerikanischer Mischkonzern	

All entered languages

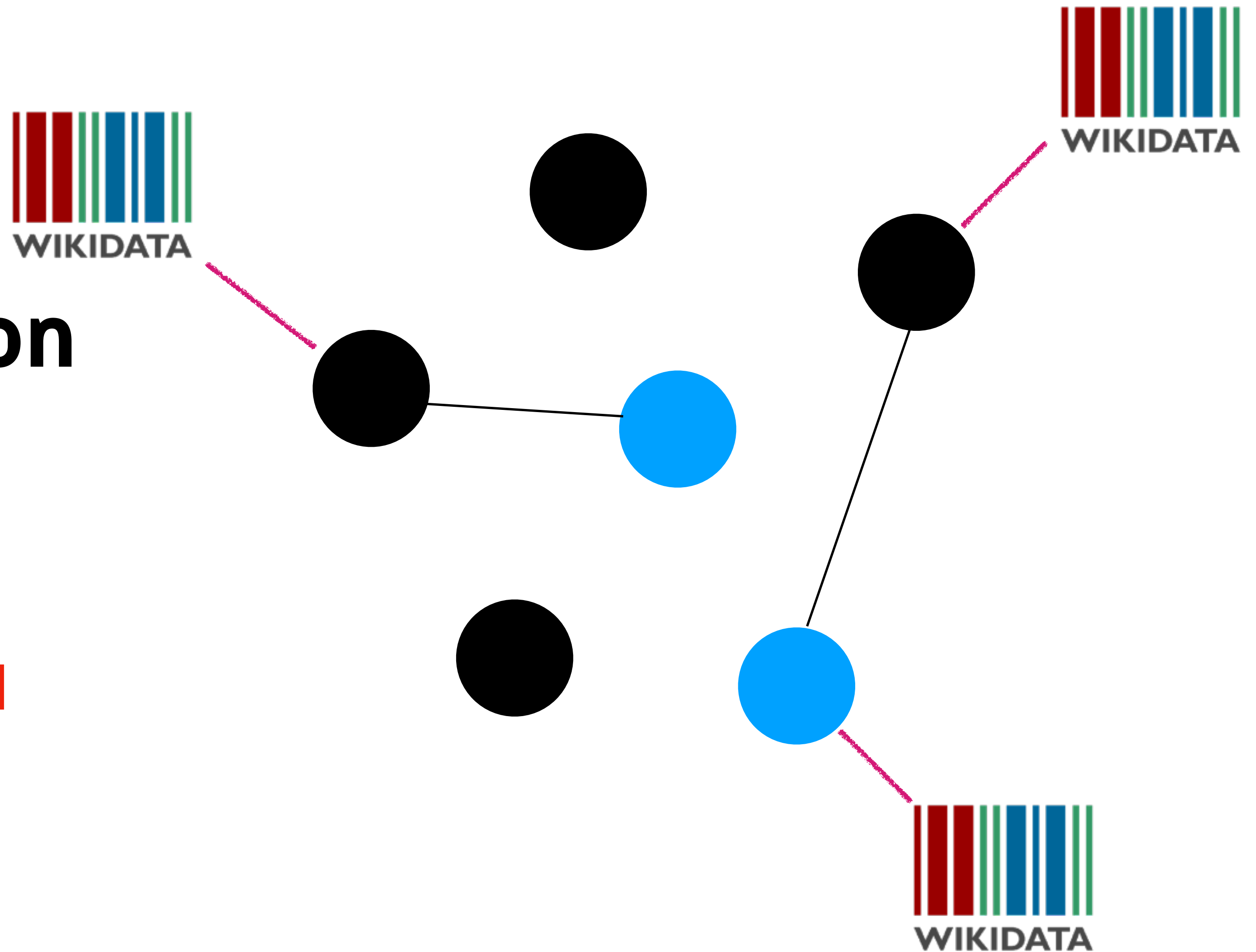
## Statements

instance of	business	edit
	0 references	add reference
	enterprise	edit
	0 references	



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connected to  
Wikidata..**

**Small islands of **connected**  
data**



# ARTIFICIAL INTELLIGENCE

1. Processing IDs and URLs (links)
2. Adding new links to Wikidata with machine learning
3. Adding new links from texts with named entity recognition

# Sokol space suit

MADE: 1991 in [Russia](#)





SOKOL space suit worn by Helen Sharman  
Science Museum Group Collection  
© The Board of Trustees of the Science Museum

Use this image

British astronaut, Helen Sharman's Sokol spacesuit made by Zvezda. Sharman wore this rescue suit during the space flight on board the SOYUZ-TM-12 and MIR spacecraft in May 1991. Space suit model number KV-2 No. 167.

Sokol-KV-2 rescue suit worn by Helen Sharman during the Juno mission to the Mir space station, 1991

### СПАСАТЕЛЬНЫЙ СКАФАНДР

Helen Sharman was the first British person in space. Sharman wore this suit for two hours on the ground to check its fit. Lying back, she tried to read but her arms ached from holding the book for so long. Despite the suit's cooling systems she sweated 2 litres during the mission launch. Once she could remove the suit, she dried it thoroughly to ensure it would not go mouldy.

The Sokol suit was developed after three unsuited cosmonauts asphyxiated on the Soyuz 11 mission in 1971 when their descent module depressurised during the return to Earth. Every cosmonaut now wears one during launch and return from space. It will keep the wearer alive for a number of hours in the event of a cabin depressurisation. Each suit is tailor made to the individual cosmonaut and comprises an inner, airtight 'bladder' of rubberised plastic and an outer layer of nylon canvas. There are connecting rings on the lower abdomen for air (cooling) and oxygen supplies and a centrally positioned pressure adjustment valve control on the chest; the pressure gauge is on the left wrist. The helmet and boots are integral with the rest of the suit; the gloves are attached with anodized aluminium bayonet fixings. Today's Sokol design is little changed from the original.

### ON DISPLAY

[Science Museum: Exploring Space Gallery](#)

If you are visiting to see this object, [please contact us](#) in advance to make sure that it will be on display.

### RELATED PEOPLE

[Helen Sharman](#)

### RELATED ARTICLES

#### National Science and Media Museum

[Bring the National Science and Media Museum collection home in Animal Crossing](#)  
**Science Museum**

[Highlights on display](#)

[Science Museum announces National Lottery ticket sales trial as Helen Sharman spacesuit goes back on display](#)

[UK tour of Tim Peake's spacecraft attracts 1.3 million visitors as Science Museum marks Apollo anniversaries with Summer of Space](#)

British **NORP** astronaut, Helen Sharman's **PERSON** Sokol **OBJECT** spacesuit made by Zvezda **ORG** . Sharman **PERSON** wore this rescue suit during the space flight on board the SOYUZ-TM-12 and MIR spacecraft in May 1991 **DATE** . Space suit model number KV-2 No. 167 **CARDINAL** .

Sokol-KV-2 **OBJECT** rescue suit worn by Helen Sharman **PERSON** during the Juno **OBJECT** mission to the Mir **OBJECT** space station, 1991 **DATE**

СПАСАТЕЛЬНЫЙ СКАФАНДР

Helen Sharman **PERSON** was the first British **NORP** person in space. Sharman **PERSON** wore this suit for two hours on the ground to check its fit. Lying back, she tried to read but her arms ached from holding the book for so long. Despite the suit’s cooling systems she sweated 2 litres during the mission launch. Once she could remove the suit, she dried it thoroughly to ensure it would not go mouldy.

The Sokol **OBJECT** suit was developed after three unsuited cosmonauts asphyxiated on the Soyuz 11 **OBJECT** mission in 1971 **DATE** when their descent module depressurised during the return to Earth **LOC** . Every cosmonaut now wears one during launch and return from space. It will keep the wearer alive for a number of hours in the event of a cabin depressurisation. Each suit is tailor made to the individual cosmonaut and comprises an inner, airtight 'bladder' of rubberised plastic and an outer layer of nylon canvas. There are connecting rings on the lower abdomen for air (cooling) and oxygen supplies and a centrally positioned pressure adjustment valve control on the chest; the pressure gauge is on the left wrist. The helmet and boots are integral with the rest of the suit; the gloves are attached with anodized aluminium bayonet fixings. Today **DATE** 's Sokol **ORG** design is little changed from the original.



## Helen Sharman 1963

OCCUPATION: [Astronaut](#), [Broadcaster](#), [Chemist](#), [Engineer](#), [Lecturer](#)

NATIONALITY: [British](#)

BORN IN: [Sheffield, South Yorkshire, England, United Kingdom](#)

## NPP Zvezda (Q541905)

company in [Moscow, Russia](#)

 [edit](#)

[K-36DM](#) | [Zvezda \(Russia\)](#) | [Research-and-production enterprise "Zvezda"](#) to them.

[GI Severin](#) | [Zvezda Research and Production Enterprise](#)

[British](#) [NORP](#) astronaut, [Helen Sharman's](#) [PERSON](#) [Sokol](#) [OBJECT](#) spacesuit made by [Zvezda](#) [ORG](#) . [Sharman](#) [PERSON](#) wore this rescue suit during the space flight on board the SOYUZ-TM-12 and MIR spacecraft in [May 1991](#) [DATE](#) . Space suit model number KV-2 No. [167](#) [CARDINAL](#) .

[Sokol-KV-2](#) [OBJECT](#) rescue suit worn by [Helen Sharman](#) [PERSON](#) during the [Juno](#) [OBJECT](#) mission to the [Mir](#) [OBJECT](#) space station, [1991](#) [DATE](#)

СПАСАТЕЛЬНЫЙ СКАФАНДР

[Helen Sharman](#) [PERSON](#) was the first [British](#) [NORP](#) person in space. [Sharman](#) [PERSON](#) wore this suit for two hours on the ground to check its fit. Lying back, she tried to read but her arms ached from holding the book for so long. Despite the suit's cooling systems she sweated 2 litres during the mission launch. Once she could remove the suit, she dried it thoroughly to ensure it would not go mouldy.

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Every cosmonaut now wears one during launch and return from space. It will keep the wearer alive for a number of hours in the event of a cabin depressurisation. Each suit is tailor made to the individual cosmonaut and comprises an inner, airtight 'bladder' of rubberised plastic and an outer layer of nylon canvas. There are connecting rings on the lower abdomen for air (cooling) and oxygen supplies and a centrally positioned pressure adjustment valve control on the chest; the pressure gauge is on the left wrist. The helmet and boots are integral with the rest of the suit; the gloves are attached with anodized aluminium bayonet fixings. [Today](#) [DATE](#)

's [Sokol](#) [ORG](#) design is little changed from the original.

## Sokol space suit (Q1197668)

Russian spacesuit used on Soyuz

[Sokol IVA](#) | [Sokol](#)

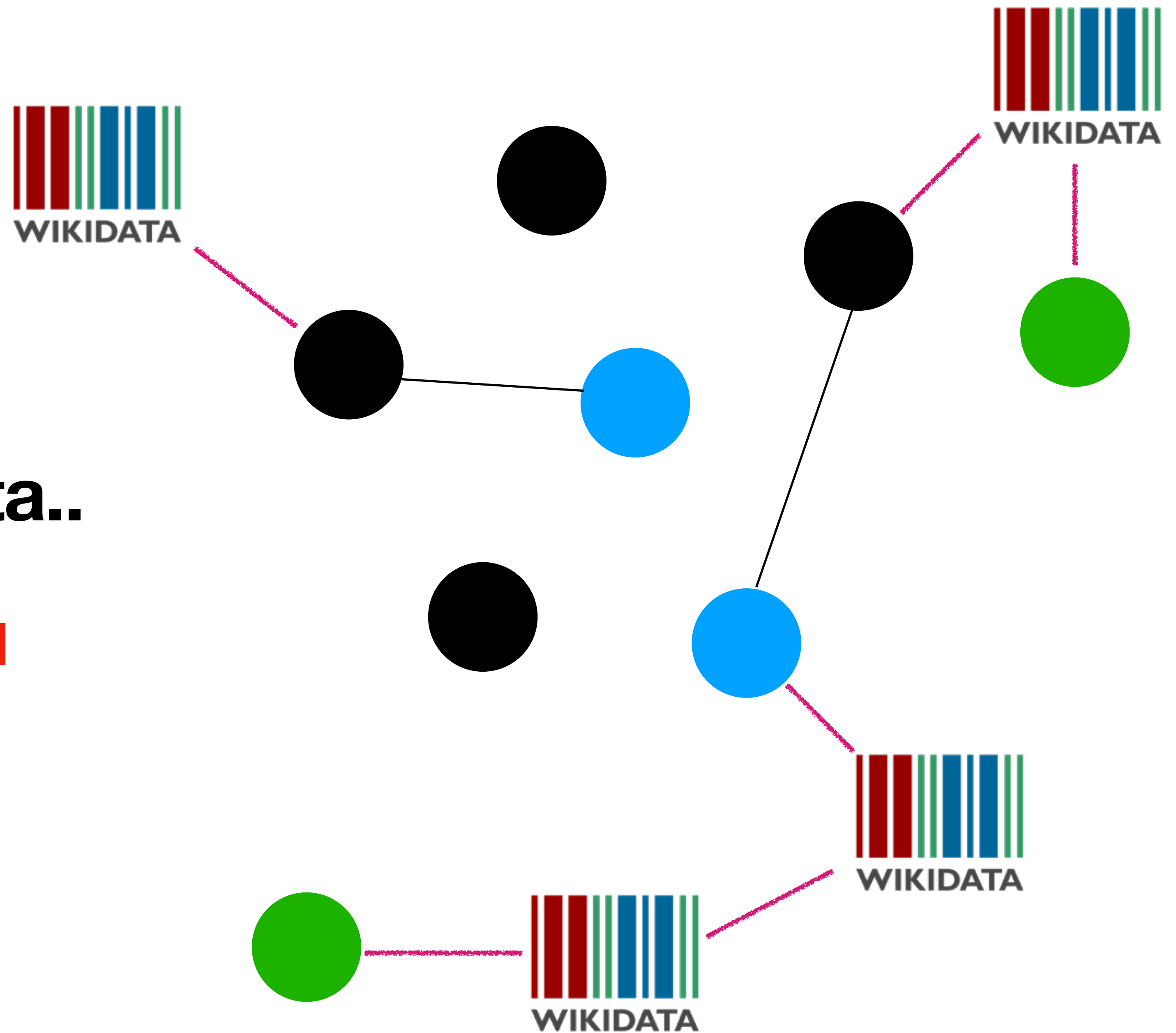
## Soyuz 11 (Q648581)

Manned Soviet space mission to the Salyut 1 Space Station



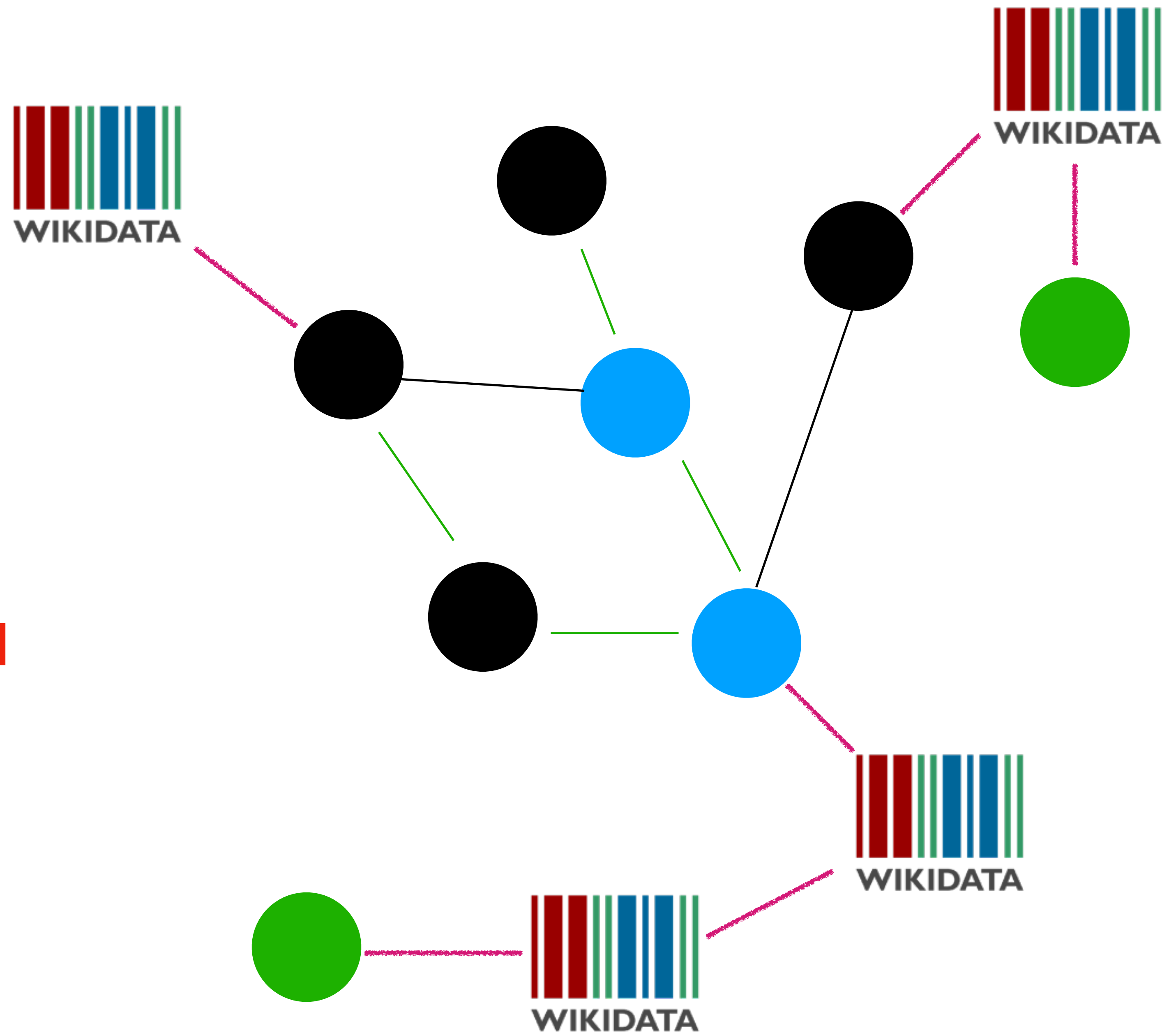
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**Small islands of **connected**  
data**



**This is our collection  
interlinked via  
information extraction  
techniques..**

**Small islands of **connected**  
and **interlinked** data**





# HERITAGE CONNECTOR PROJECT

1. Knowledge graphs

2. Linked data

3. Artificial intelligence

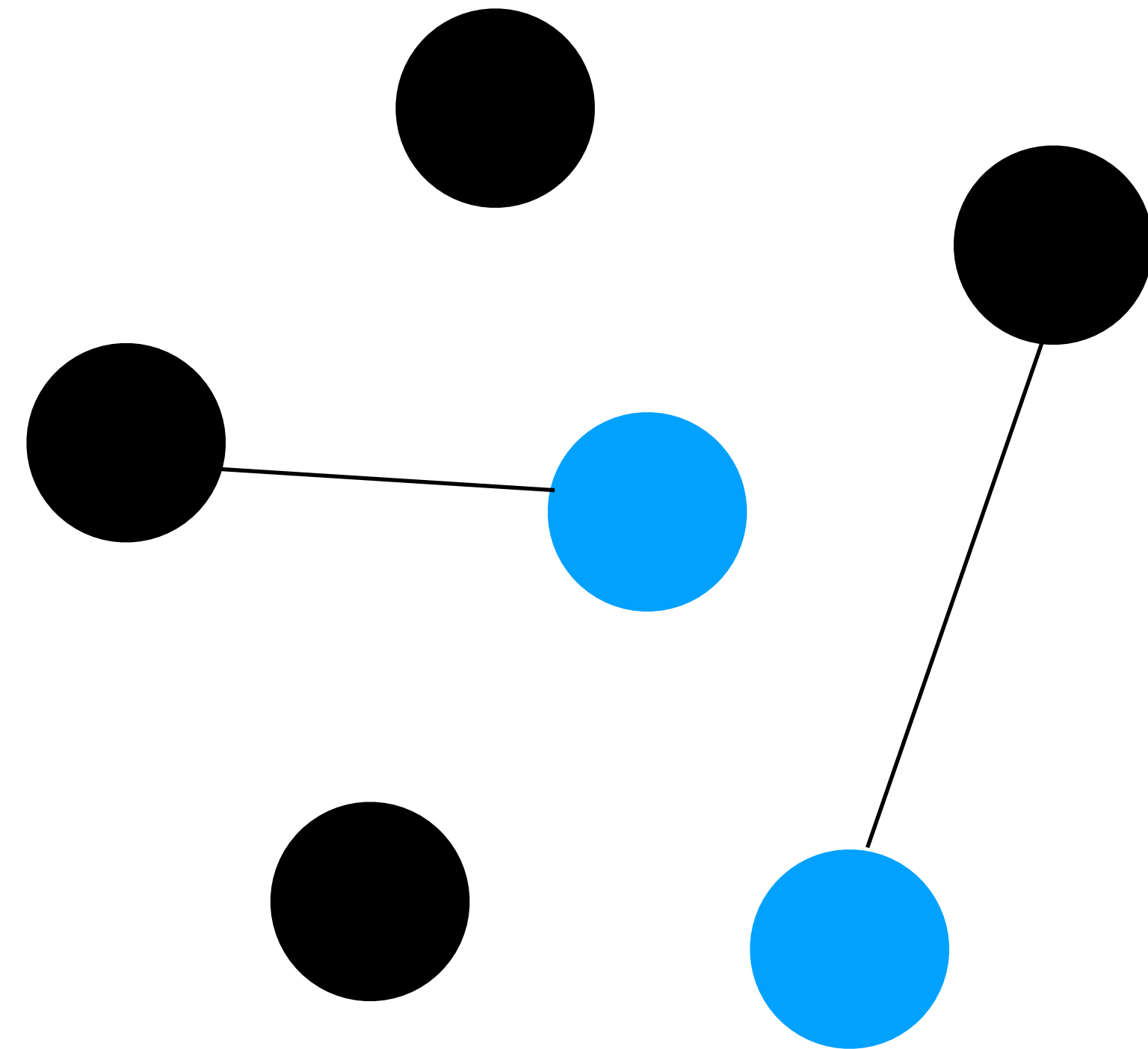
1. Improve collection interfaces

2. Improve discovery

3. Improve links to other data sources

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now..**

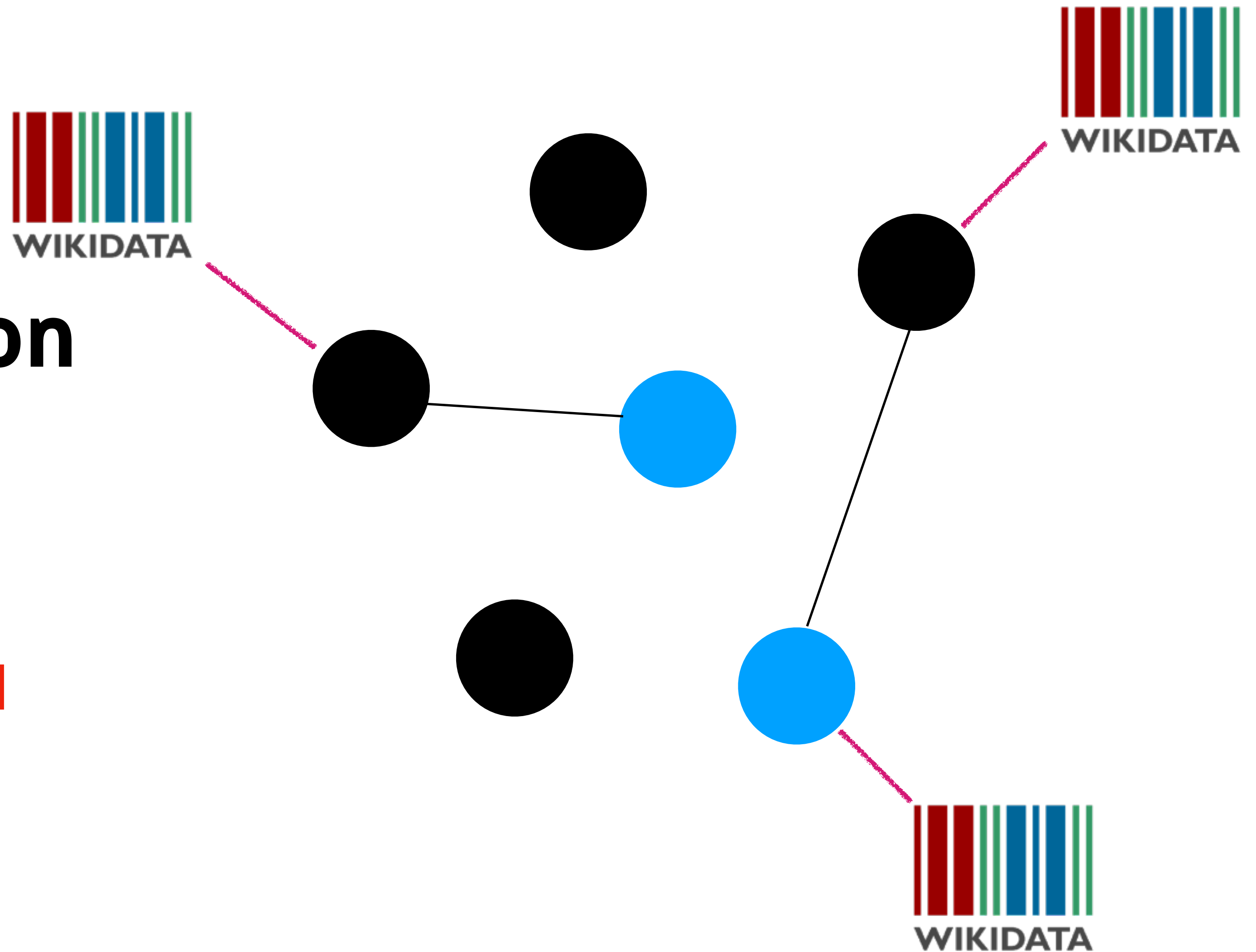
**Small islands of thin data**





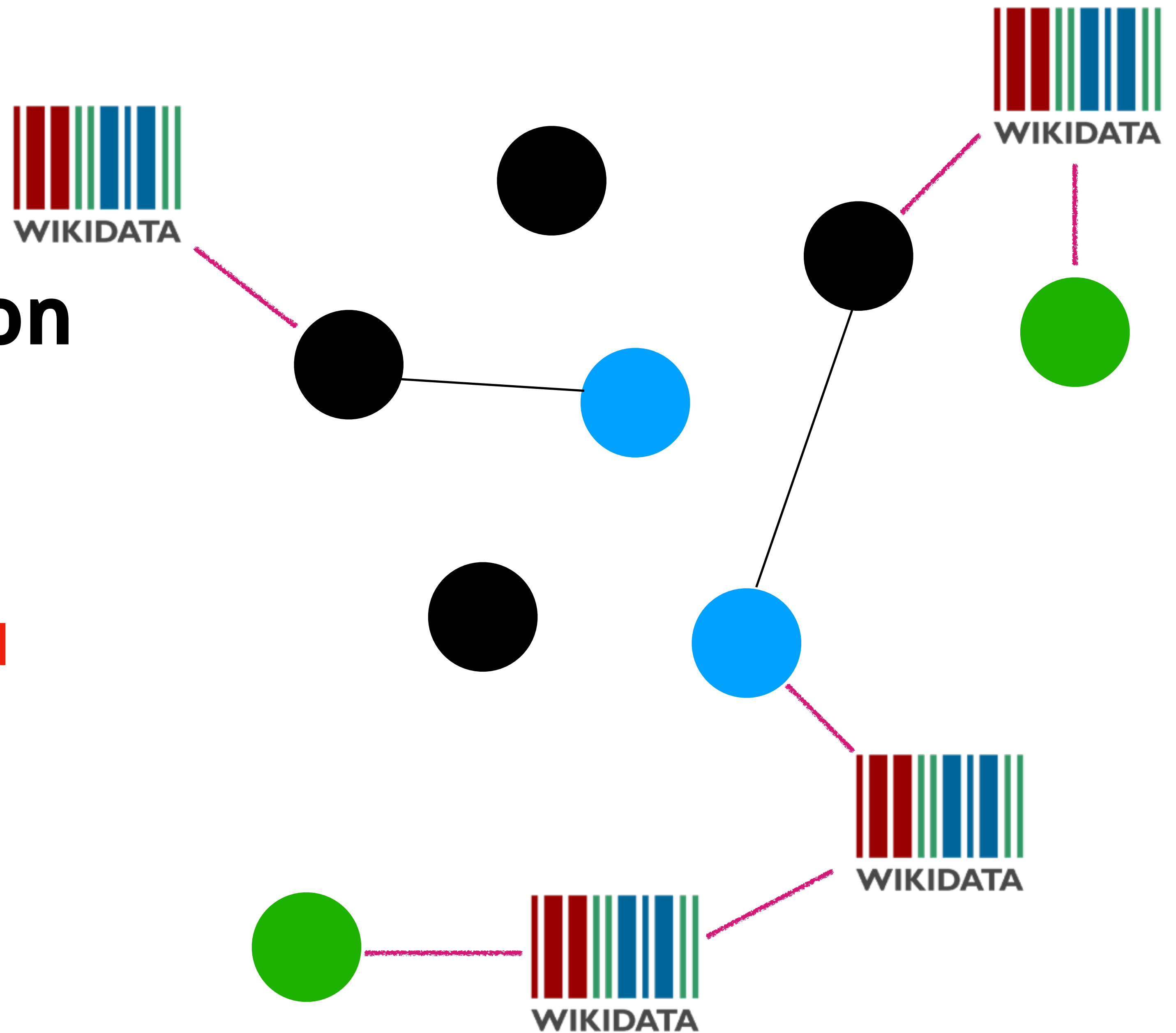
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connected to  
Wikidata..**

**Small islands of **connected**  
data**



**This is our collection  
connected to  
Wikidata..**

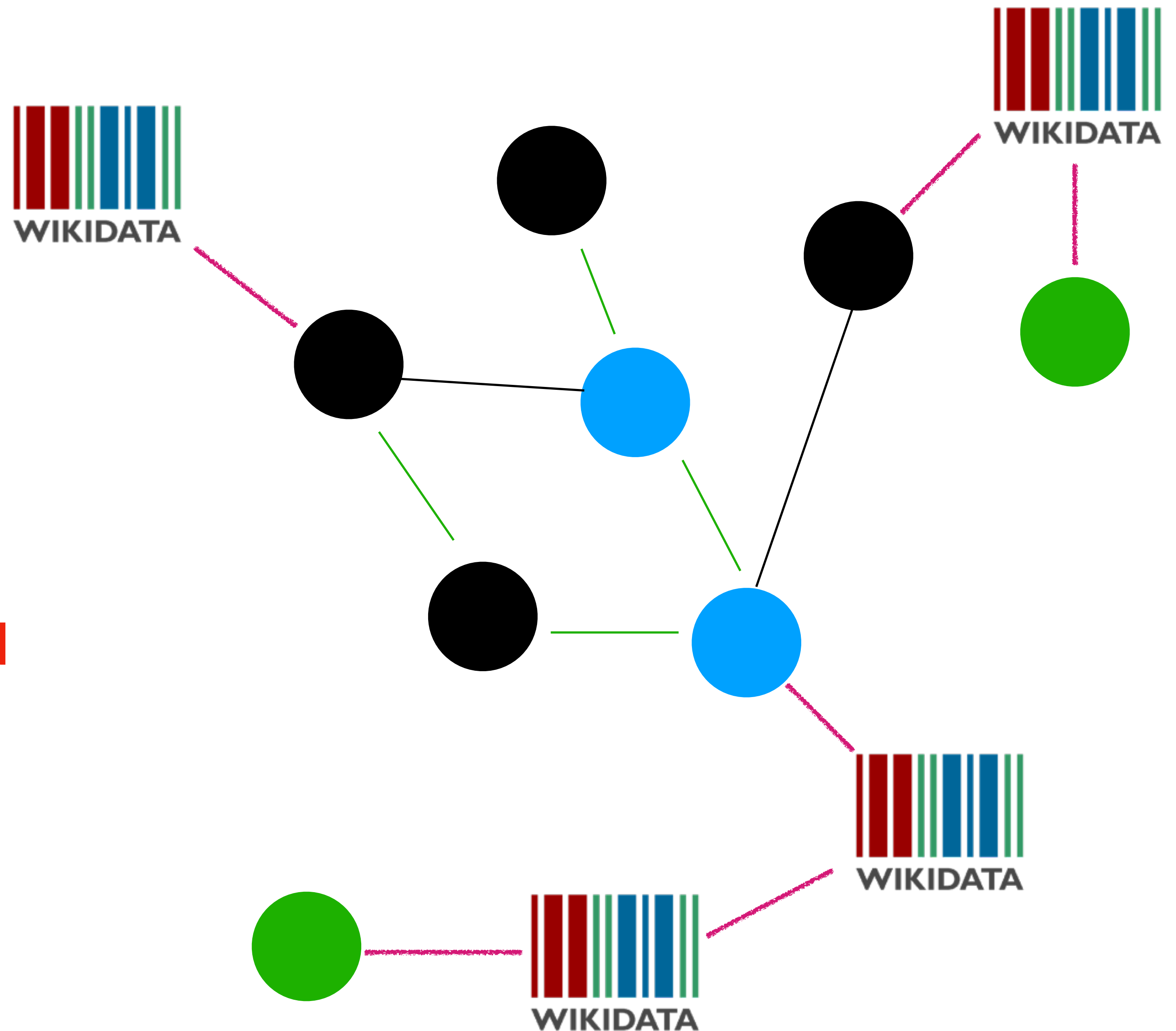
**Small islands of **connected**  
data**





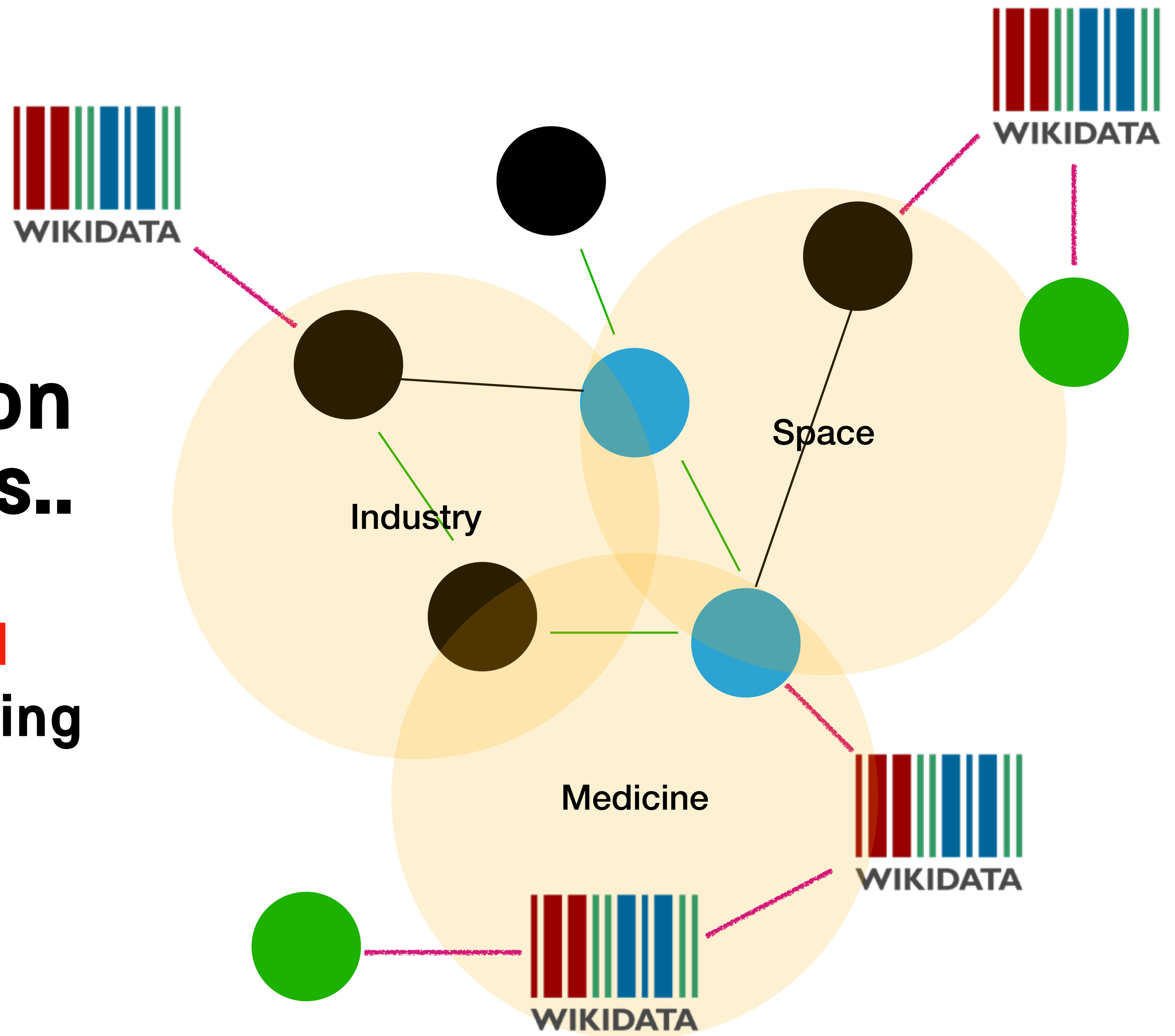
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interlinked via  
information extraction  
techniques..**

**Small islands of **connected**  
and **interlinked** data**



# This is our collection with new groupings..

Small islands of **connected**  
and **interlinked** data exposing  
new **groupings**



# BENEFITS

- Human resources are limited, especially expert ones
- Introduce new topics and themes not inherent in our current data
- Enrich specific types of records/objects with additional data
- Stop our record pages becoming 'dead ends' to users.
- Use linked open datasets to create new forms of research and discovery..



# THINGS WE'RE EXPLORING NEXT

- What forms and levels of data which although not perfect are good enough to prove useful?
- What techniques are best used to build these new relationships and groupings at scale?
- How might confidence in these relationships impact on their usefulness?
- Where is the best use of human input in supporting such an approach?
- What gaps and biases emerge when these relationships are created, and which hitherto unexpected connections are made?