Ricgraph
Research in context graph

Presentation at SURF, February 14, 2024

Rik D.T. Janssen
Utrecht University
r.d.t.janssen@uu.nl
0000-0001-9510-0802

What if...
we look at research information as a network (graph)?

- We have relations between items
- Related items are neighbors
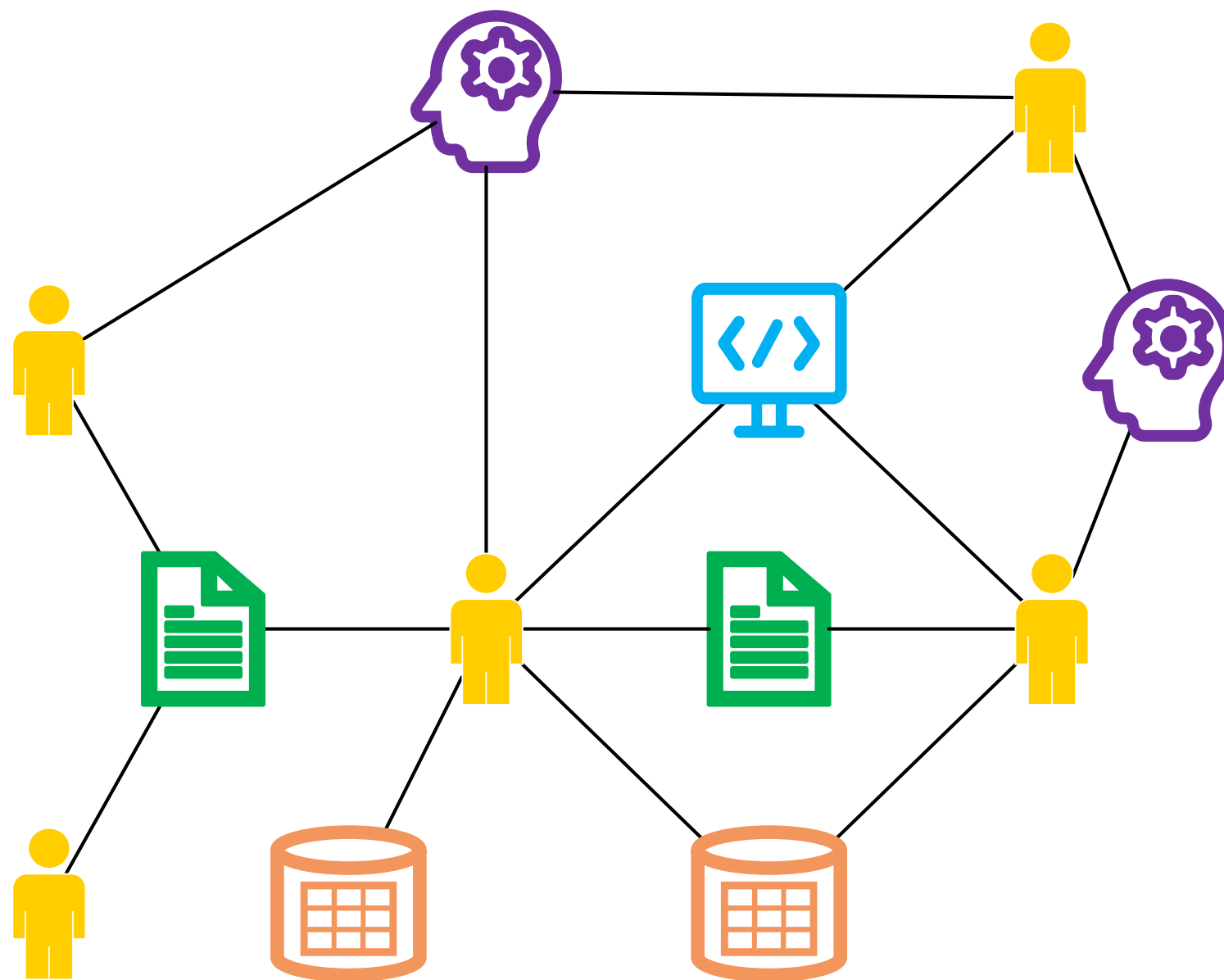- We can "walk" from one item to another
- No duplicates

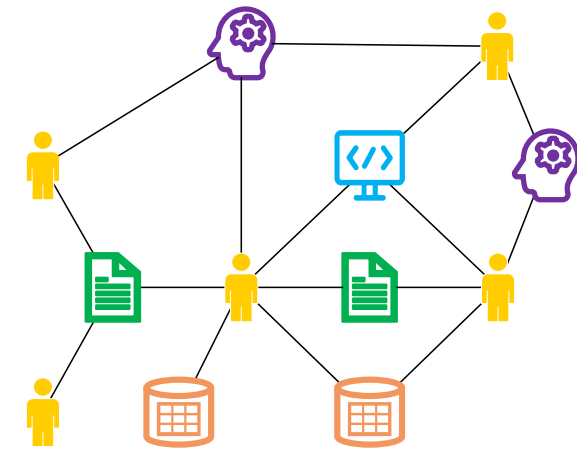Item = person, organization, article, book, dataset, software, ...

Utrecht University Ricgraph

What if...
we look at research information as a network (graph)?

- We have relations between items
- Related items are neighbors
- We can "walk" from one item to another
- No duplicates

person

article

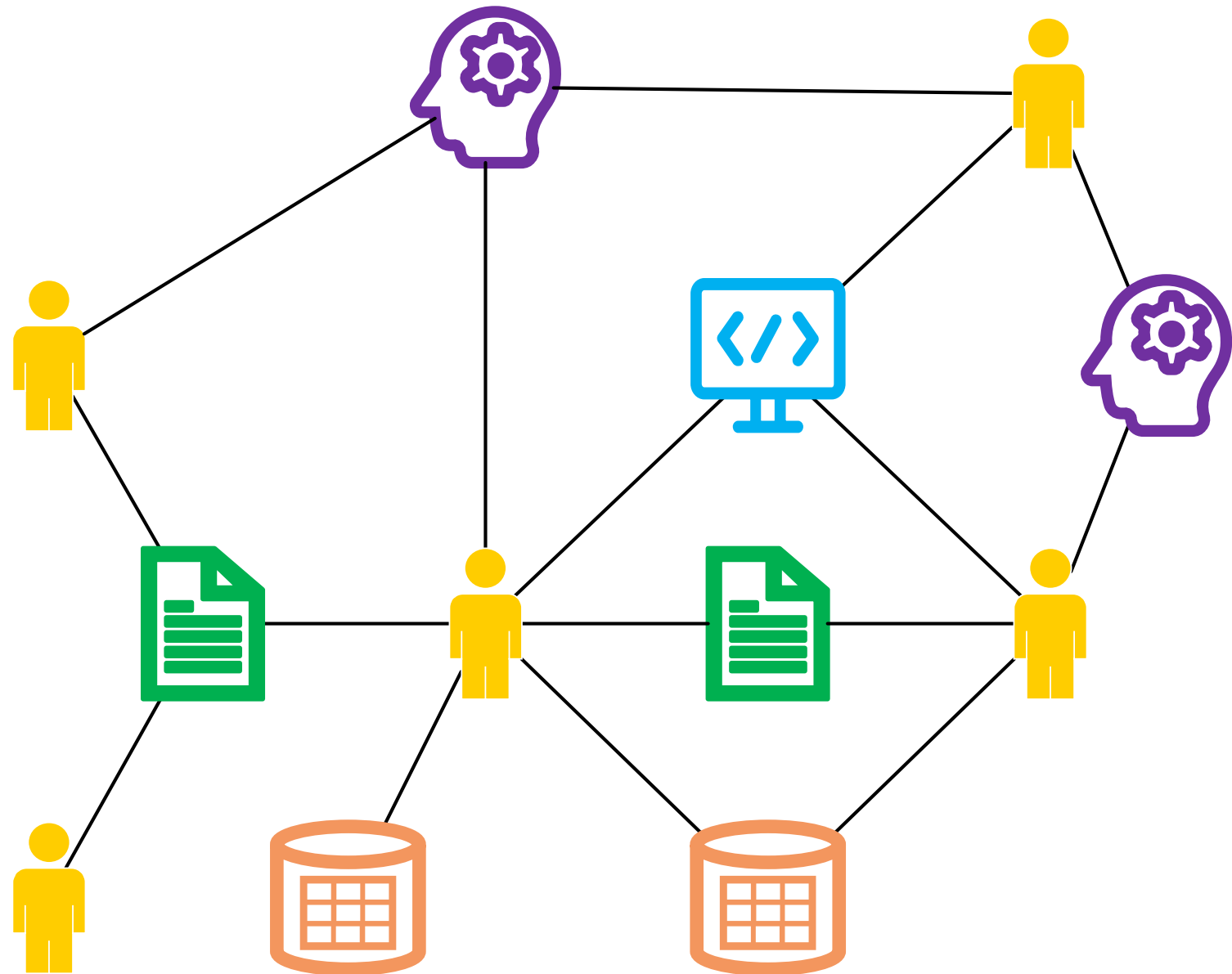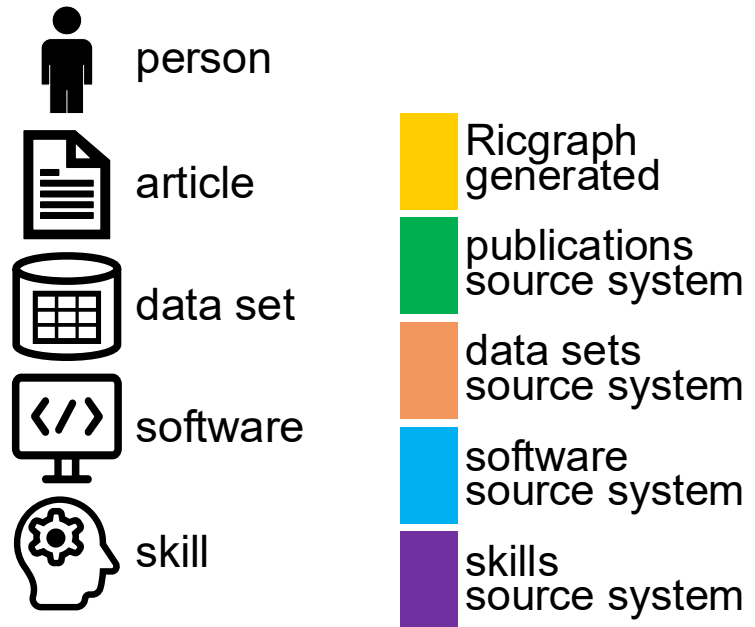data set

software

skill

Utrecht University   Ricgraph

What is Ricgraph - Research in context graph?

- Ricgraph can store **many types of items** in a single graph
- It harvests **multiple source systems** into a single graph
- Ricgraph **facilitates reasoning** because it infers new relations between items
- Ricgraph Explorer is the **exploration tool**
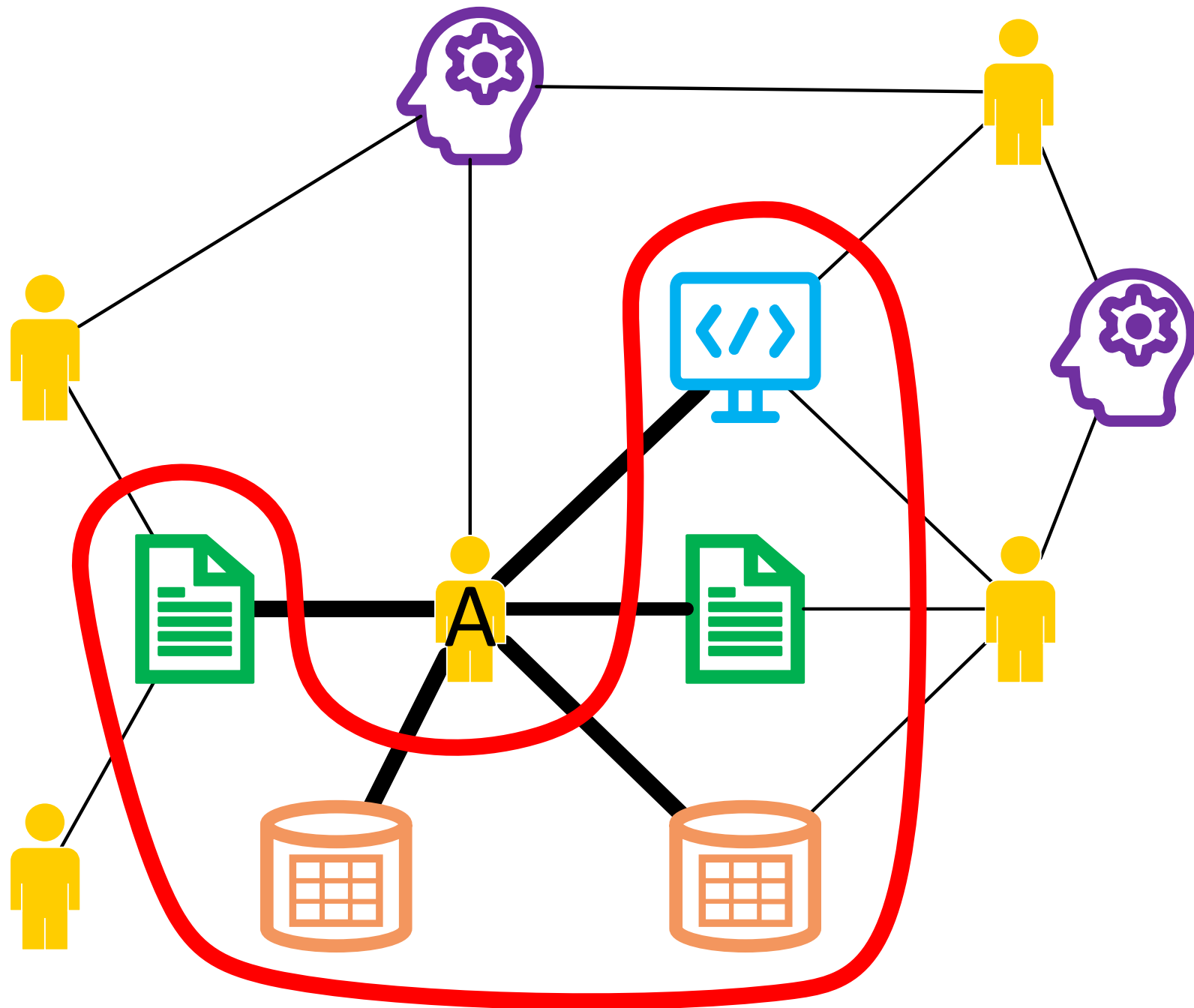- Ricgraph **can be tailored** for an application area

What is Ricgraph?

- many types of items in a single graph
- multiple source systems
- facilitates reasoning: infers new relations between items

person

article

data set

software

skill

Ricgraph generated

publications source system

data sets source system

software source system

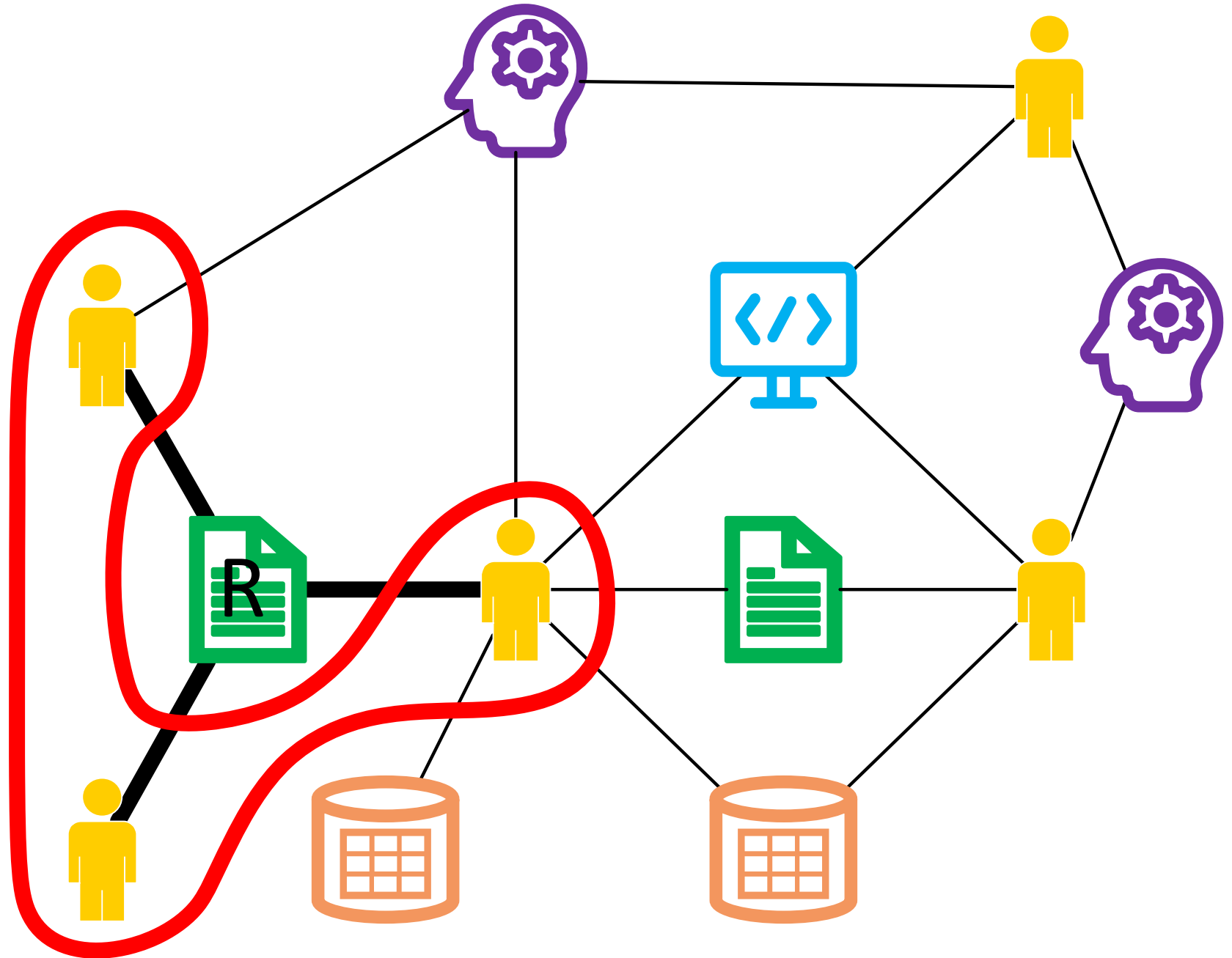skills source system

Utrecht University

Ricgraph

What can Ricgraph do?

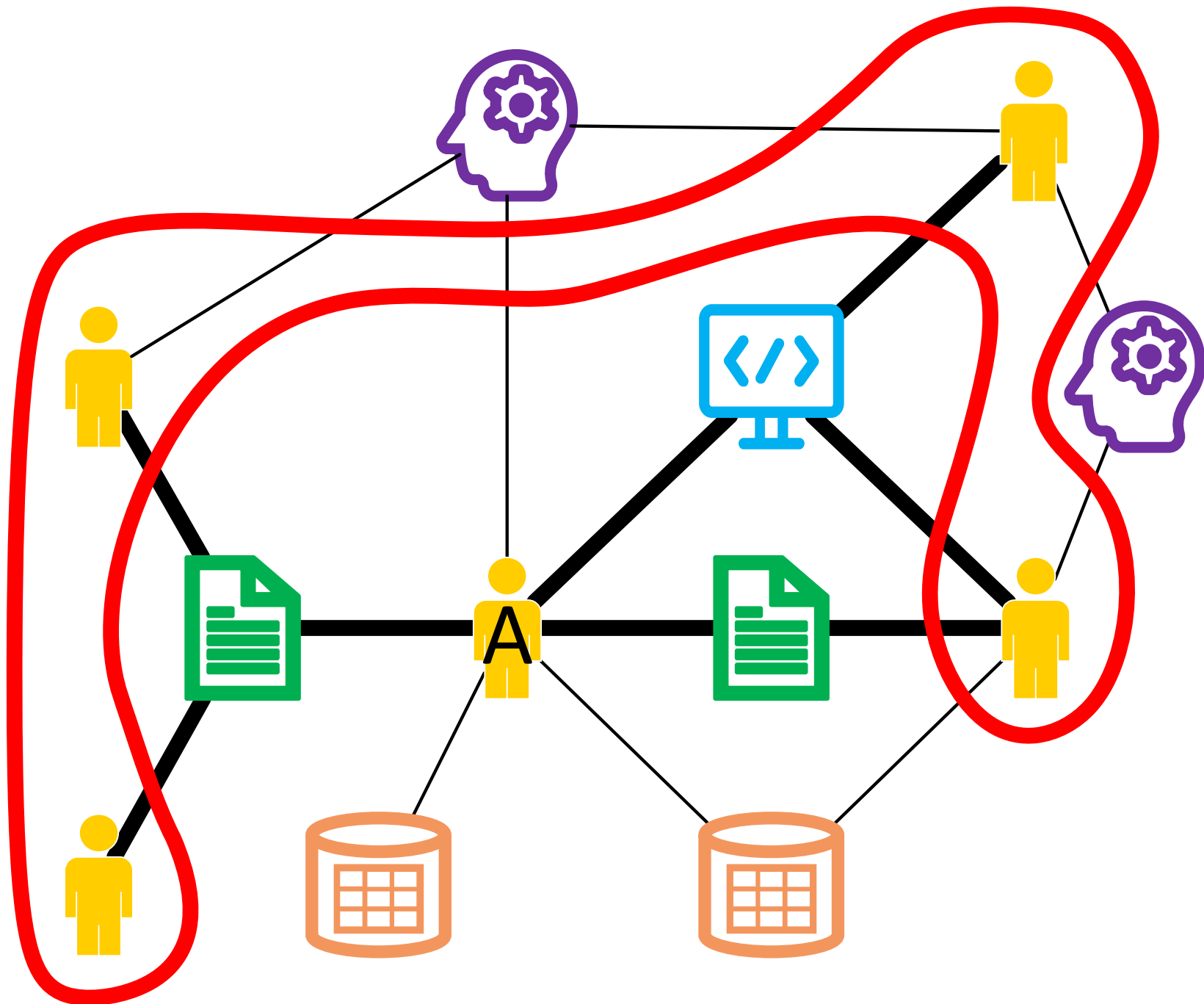What are the research outputs of person A?

What can Ricgraph do?

Who has contributed to research output R?
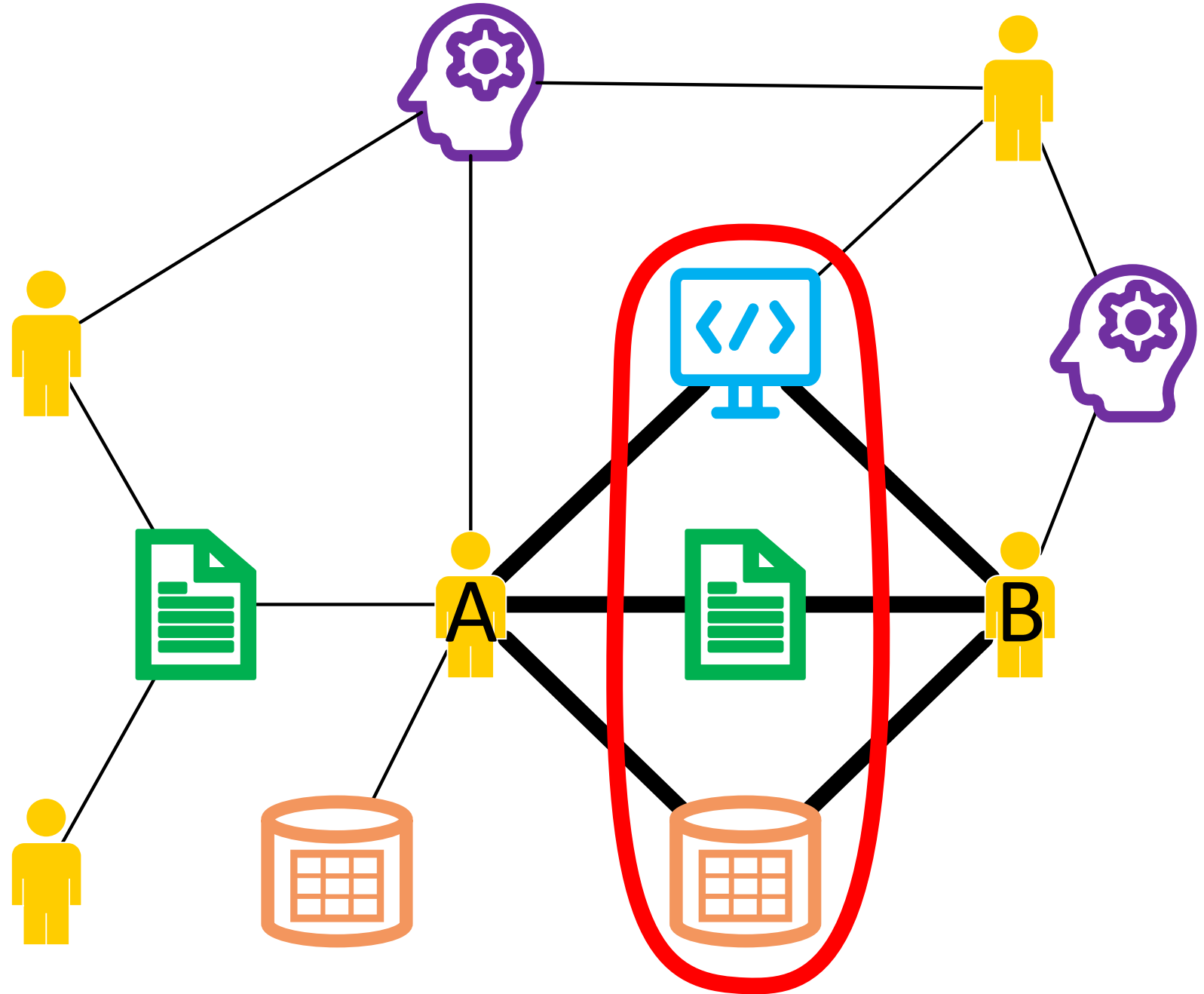
What can Ricgraph do?

With whom has person A worked?
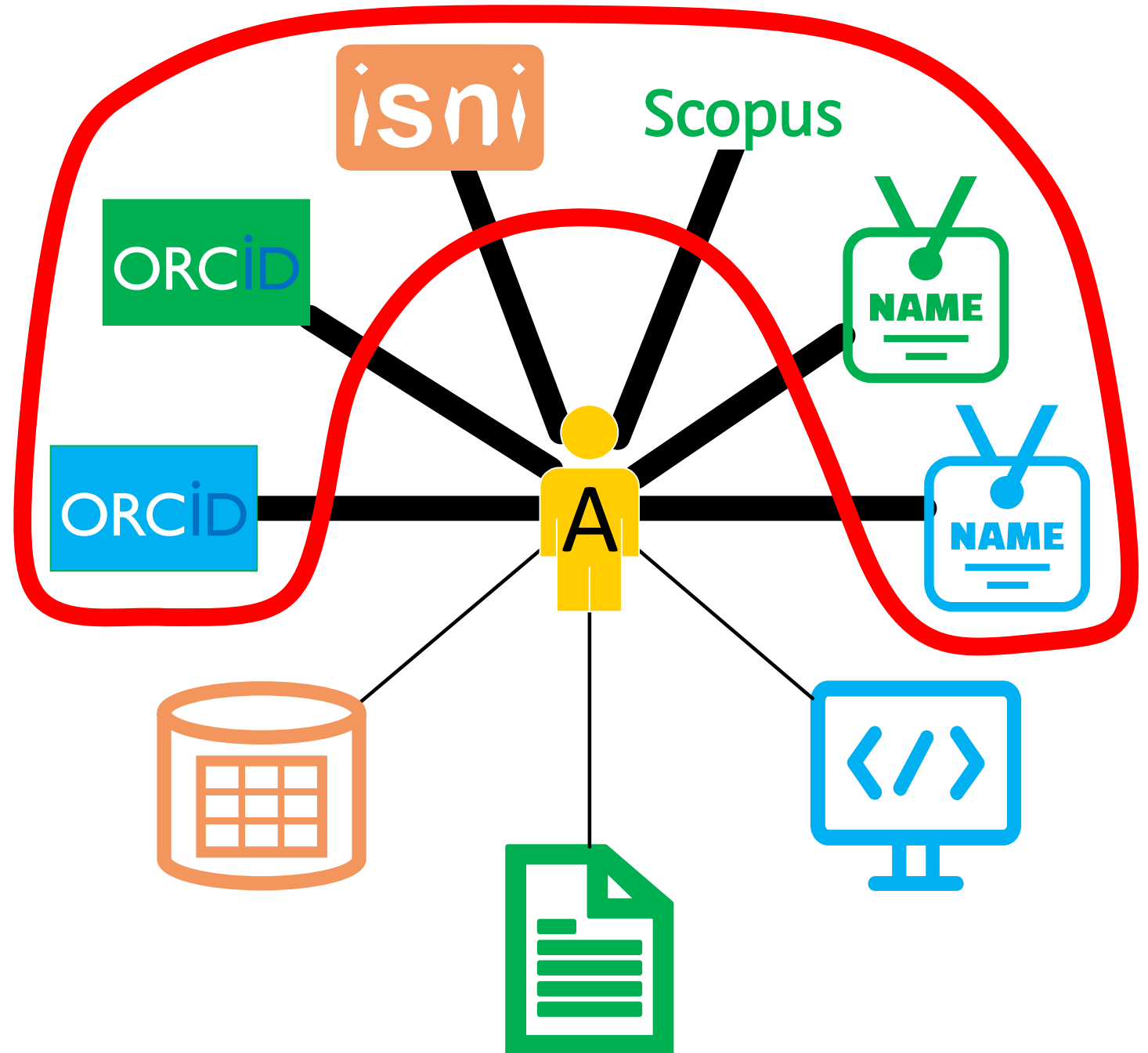
What can Ricgraph do?

What research outputs have person A and person B in common?
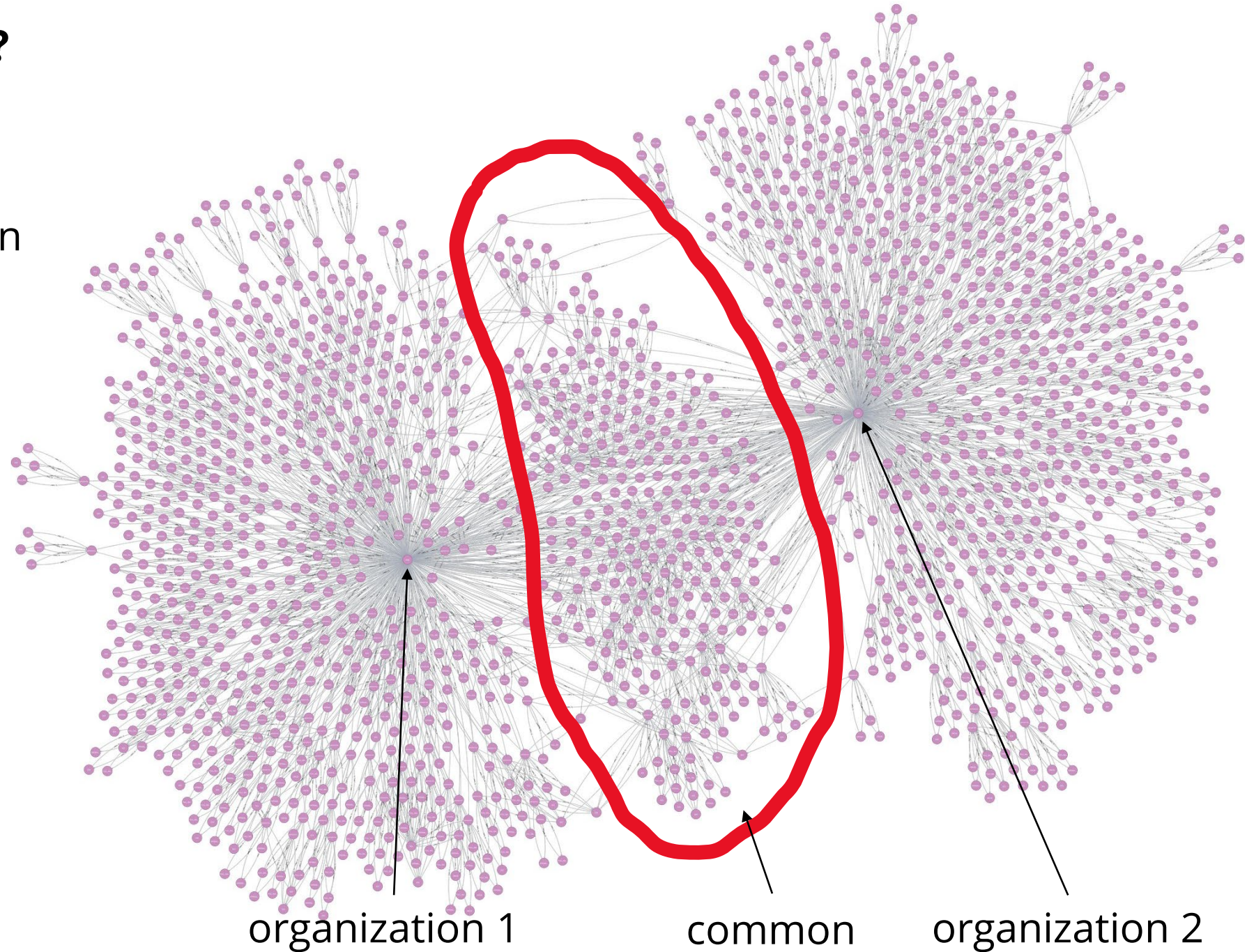
What can Ricgraph do?

What identifiers does
person A have?

Identifier = ORCID, ISNI,
SCOPUS_ID, email, name,
GitHub, Twitter, ...

Utrecht University · Ricgraph

What can Ricgraph do?

What is common between
organization 1 and
organization 2?
(e.g. persons, data sets)
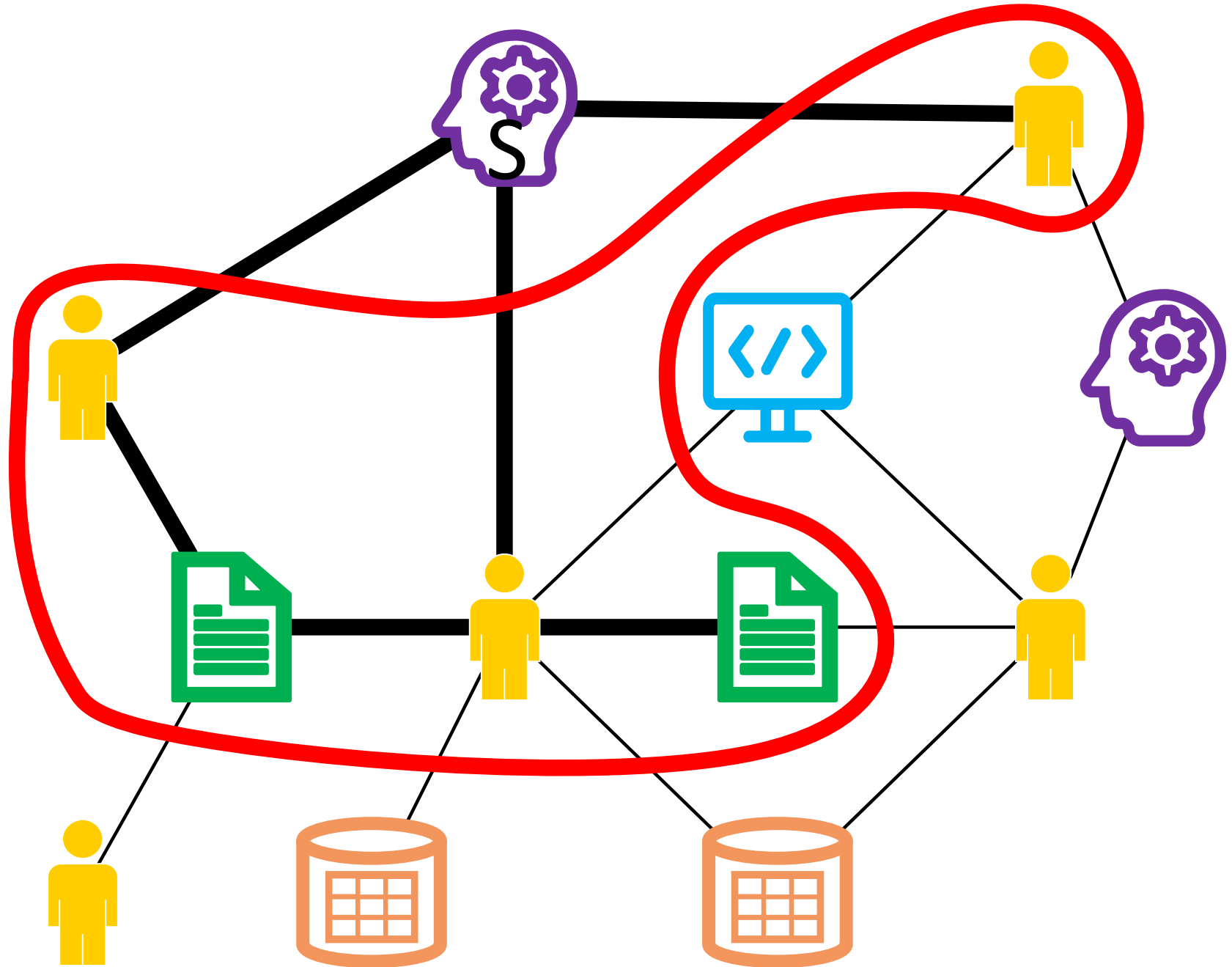

organization 1   common   organization 2

What can Ricgraph do? Use case

As a journalist, I want to find researchers with skill S and their publications, so that I can interview them for a newspaper article
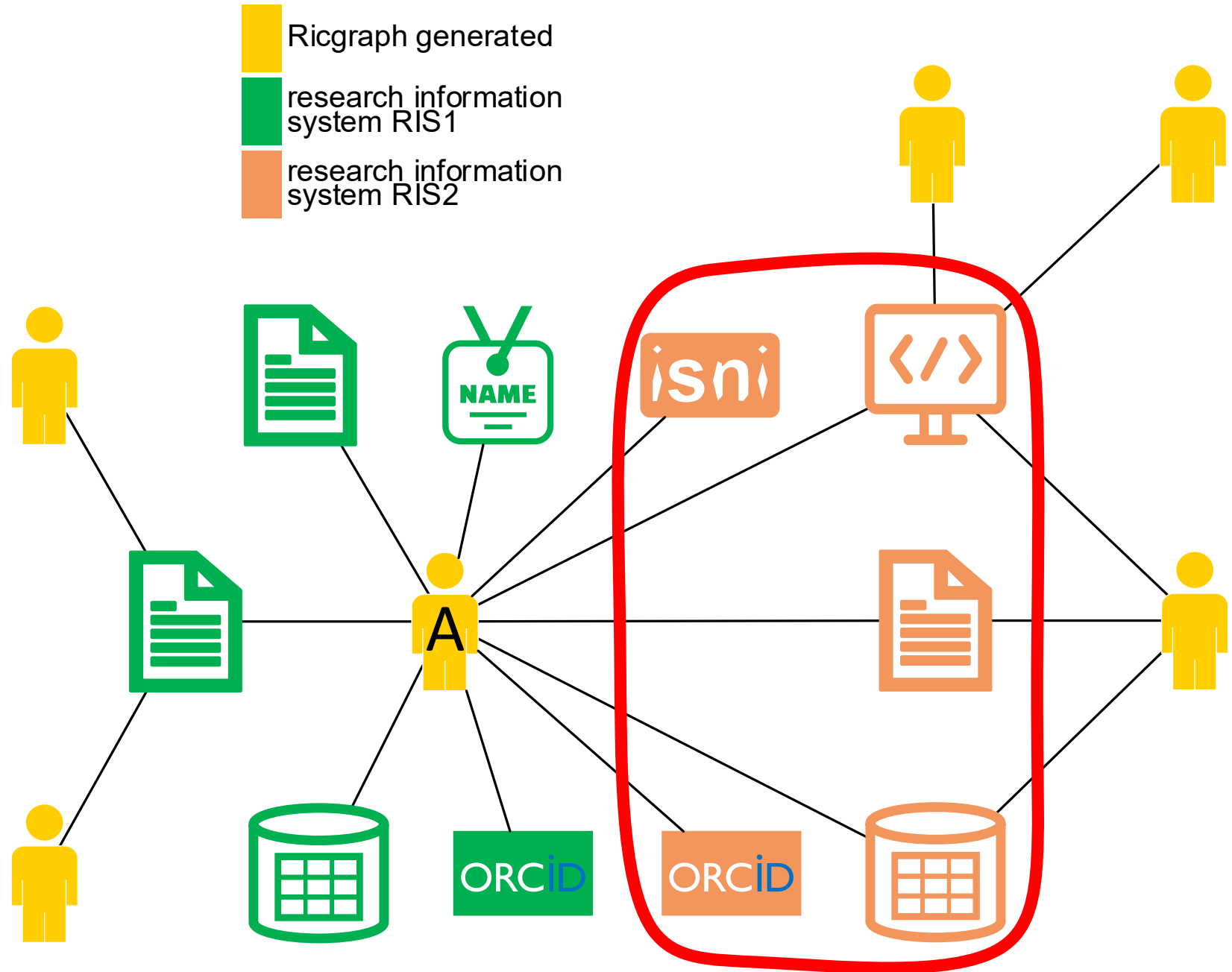
Example skill: climate change, stem cells

Ricgraph

What can Ricgraph do? Use case

As a librarian, for researcher A, I want to enrich my local research information system RIS1 with identities and research results that are in other systems but not in ours, so that we have a more complete view of research at our university
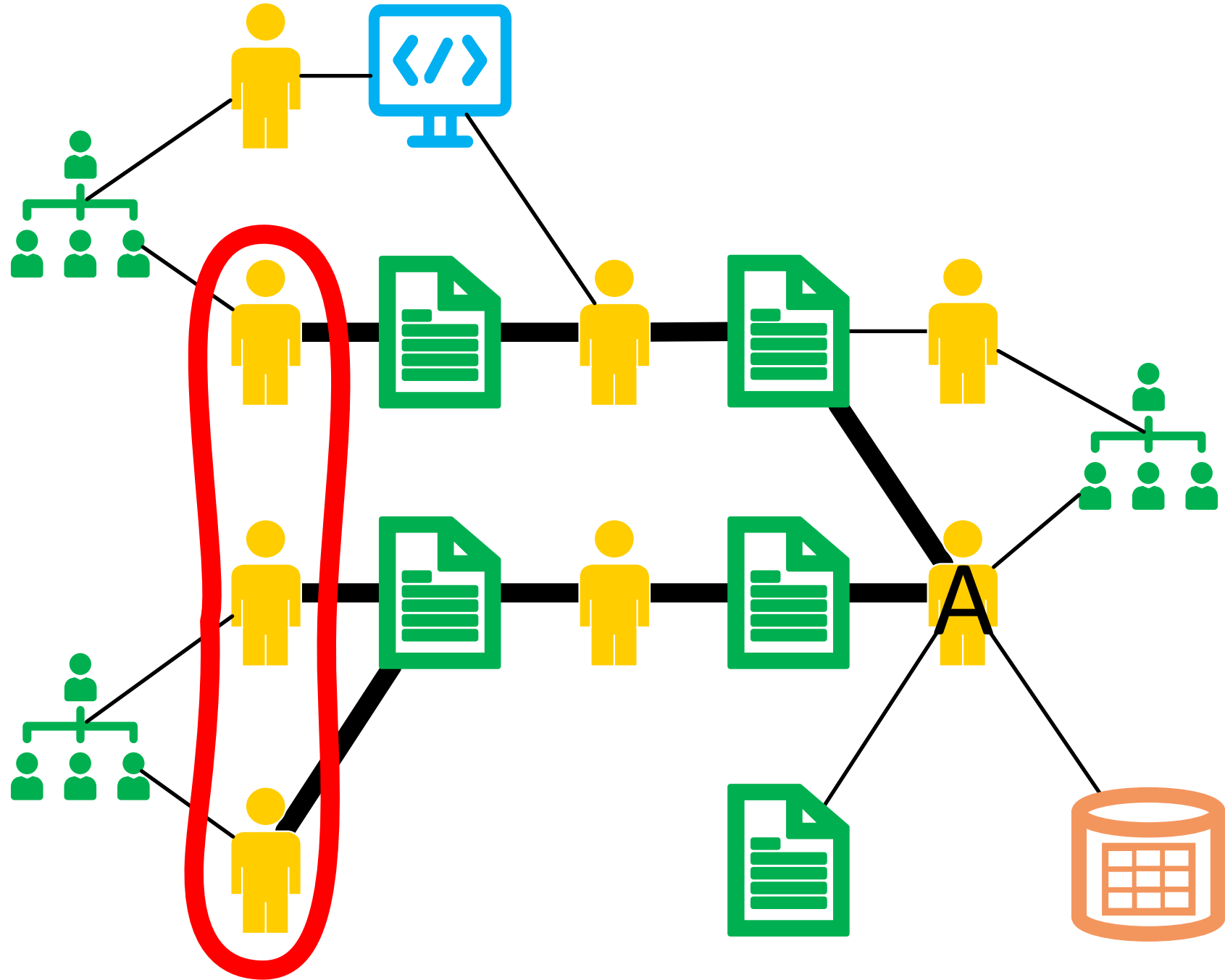
Ricgraph generated

research information system RIS1
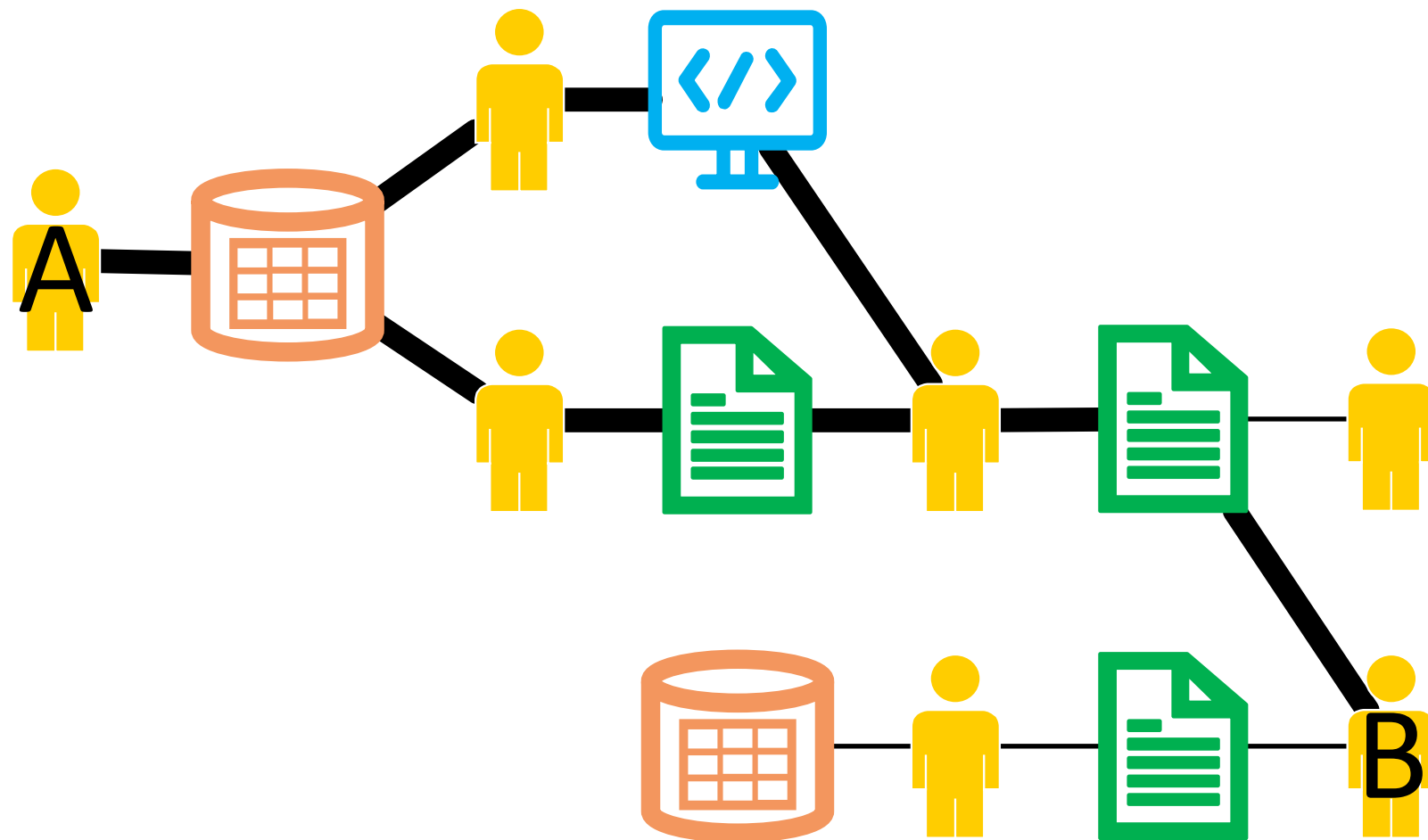
research information system RIS2

What can Ricgraph do? Use case

As researcher A, I want to find researchers from other universities that have co-authored publications written by the co-authors of my own publications, so that I can read their publications to find out if we share common research interests
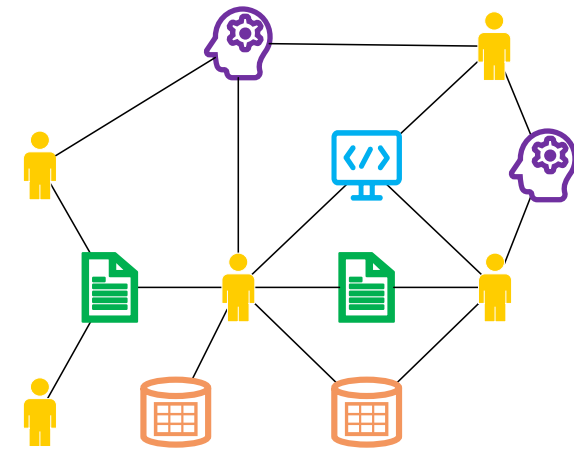
What can Ricgraph do?

How are persons A and B related?
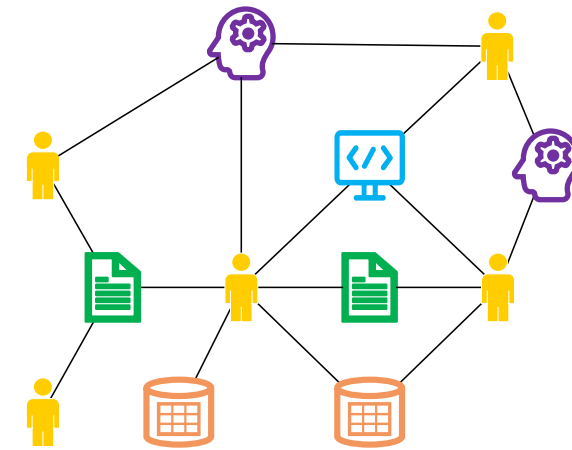
Some lessons learned

- Without identifiers we are nowhere
- We need to be able to resolve any identifier to any other
- I think only one preferred identifier will not work
- A graph is the way to go! ☺

You can install and use Ricgraph yourself!

Utrecht University   Ricgraph

Links

- GitHub (software, documentation and videos): https://github.com/UtrechtUniversity/ricgraph
- Research Software Directory: https://research-software-directory.org/software/ricgraph
- Zenodo: https://doi.org/10.5281/zenodo.7524314
- Article submitted to SoftwareX: Rik D.T. Janssen, *Ricgraph: A flexible and extensible graph to explore research in context from various systems*, https://doi.org/10.2139/ssrn.4712466

More information, presentations, demos, install workshops: Rik D.T. Janssen, r.d.t.janssen@uu.nl

Utrecht University   Ricgraph

Utrecht University

Sharing science,
shaping tomorrow