

Signet-ring

A Framework for Authenticating Sources and Lineages of Digital Objects

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Motivation

The proliferation of images and text without clear origins.

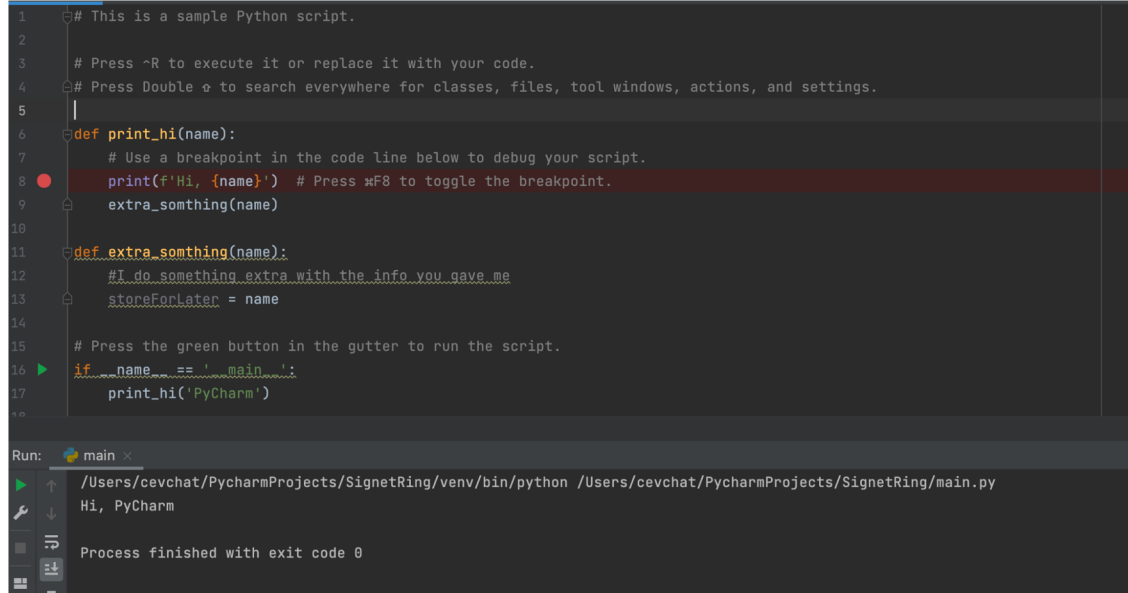


But what about this motivation?

Hey Jim,

Here is the fix you were looking for:
Prints the message we discussed.

- Cindy

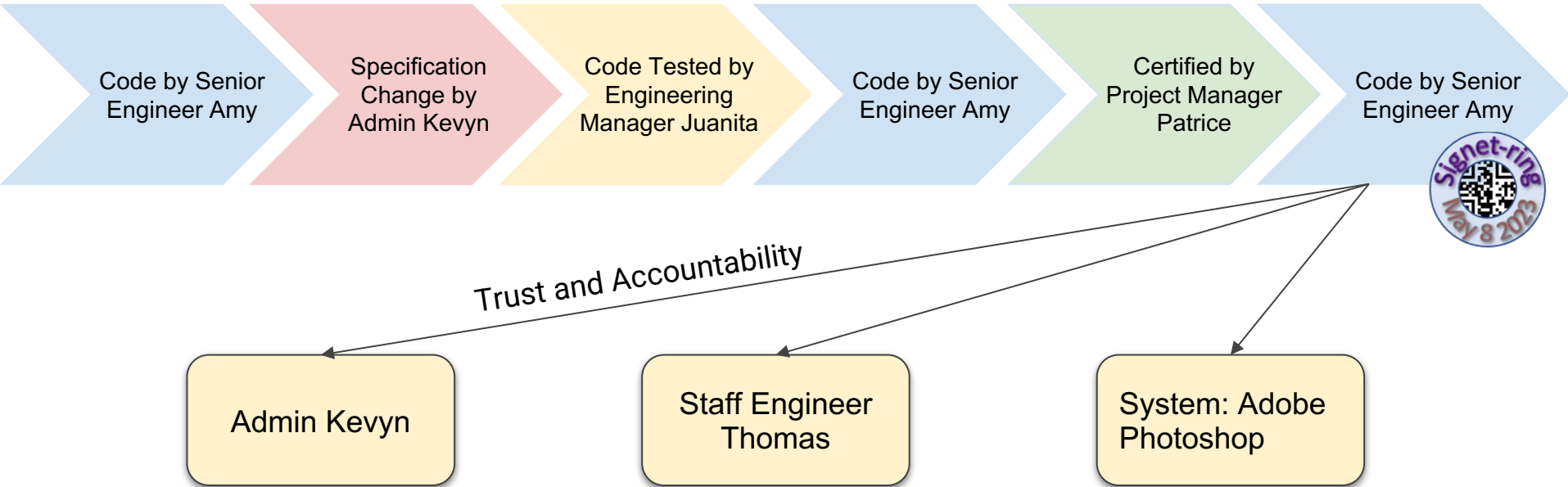


```
1 # This is a sample Python script.
2
3 # Press ^R to execute it or replace it with your code.
4 # Press Double ⌘ to search everywhere for classes, files, tool windows, actions, and settings.
5
6 def print_hi(name):
7     # Use a breakpoint in the code line below to debug your script.
8     print(f'Hi, {name}!') # Press ⌘F8 to toggle the breakpoint.
9     extra_something(name)
10
11 def extra_something(name):
12     #I do something extra with the info you gave me
13     stoneForLater = name
14
15 # Press the green button in the gutter to run the script.
16 if __name__ == '__main__':
17     print_hi('PyCharm')
```

Run: main ×

```
/Users/cevchat/PycharmProjects/SignetRing/venv/bin/python /Users/cevchat/PycharmProjects/SignetRing/main.py
Hi, PyCharm
Process finished with exit code 0
```

Data Flow Diagram Example



Components of Signet-ring

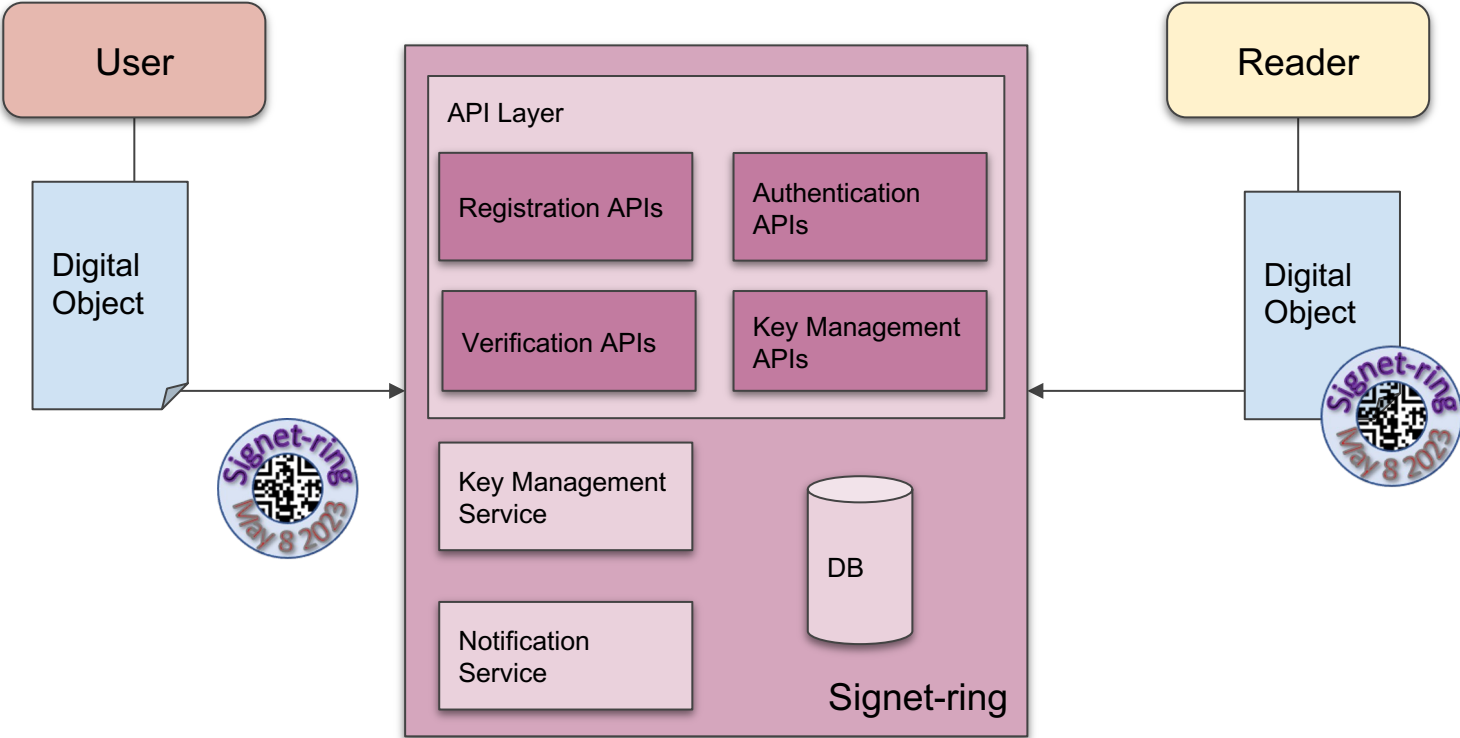
Signet-ring manages two types of entities:



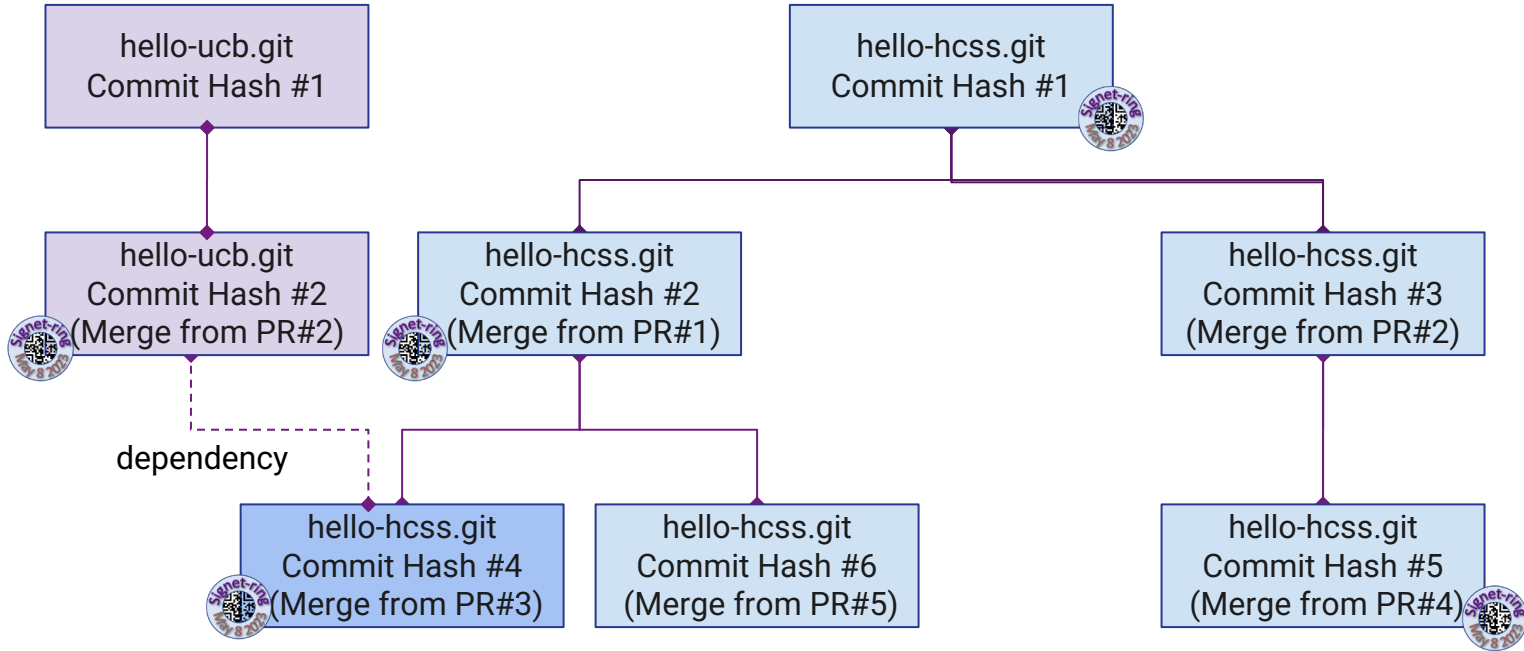
Signet-ring manages the relationship between these entities:



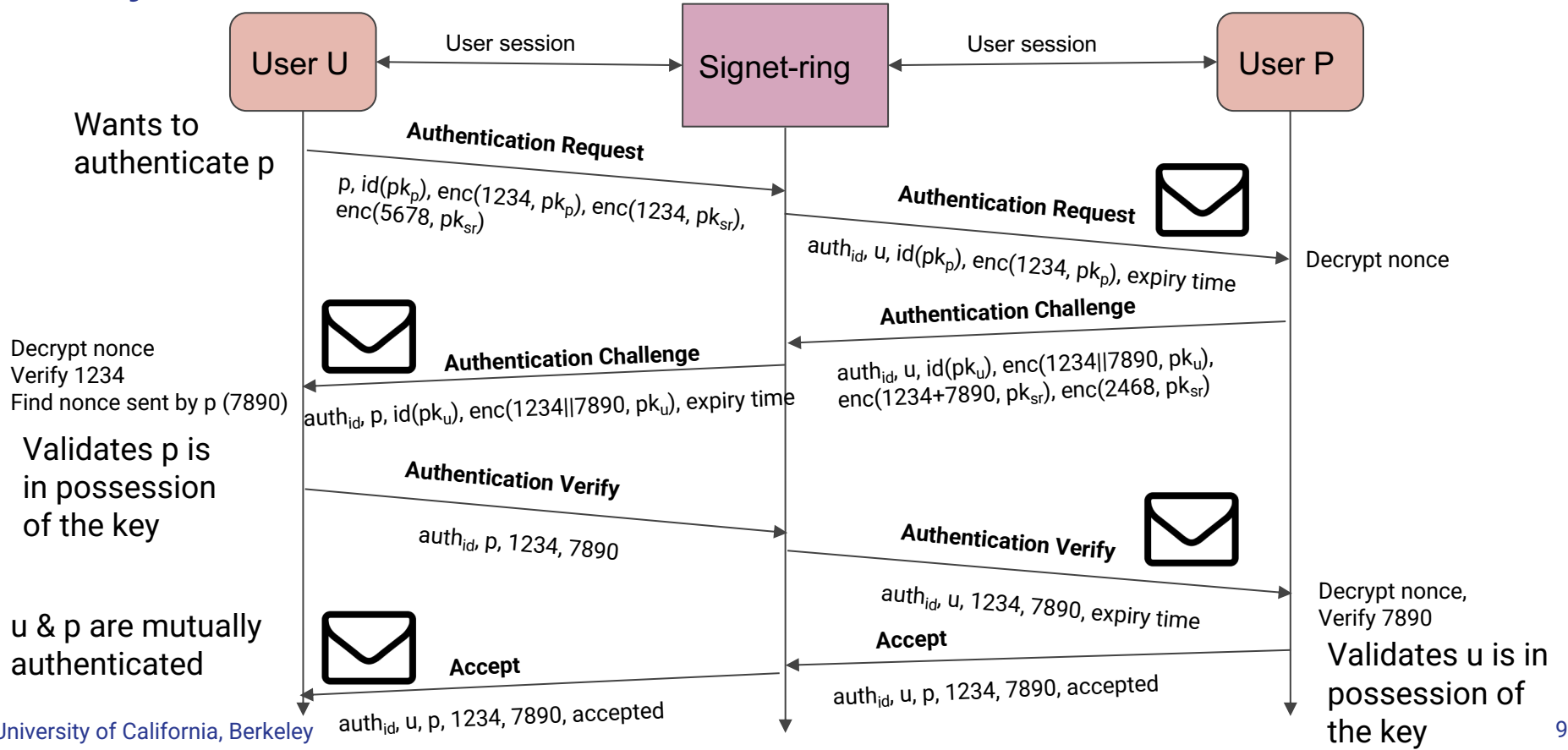
System Architecture



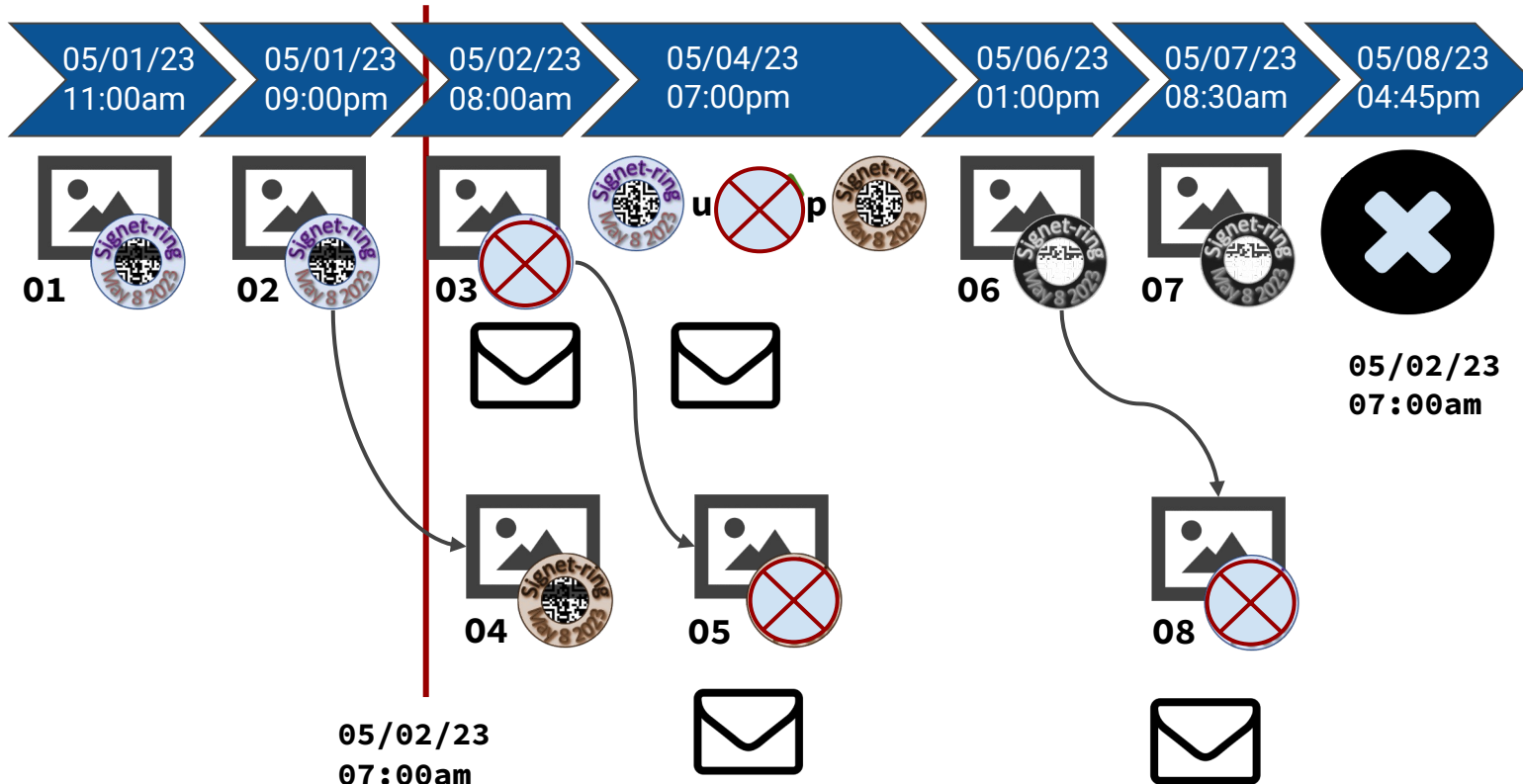
Lineage of Objects



Asynchronous Handshake of Entities



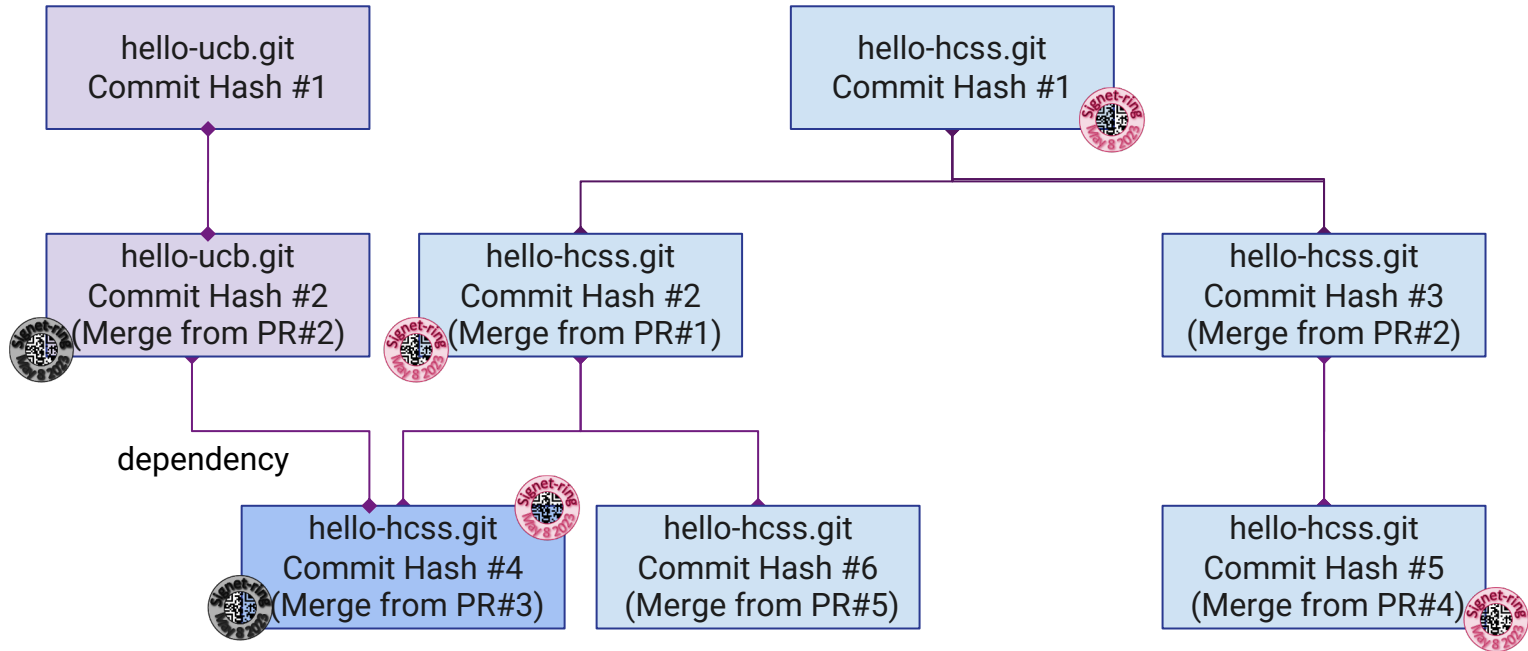
Key Revocation and Invalidating Signatures



Signet Ring as a Confidence Support System

- Administrates signatures for digital object
- Administrates lineages of digital objects
- Provides authentication of vendors (sources) and of clients (publishers)
- Checks every submittal to Signet-Ring
- Supports Signatures Across Users

Signet Ring Supporting Complex Provenance: Motivating Possibility



Summary and Future Directions

- Signet-ring is a framework that acts as a central authority, providing robust certification services in the sharing of digital objects

Possible integrations, add-ons, steps:

- Similarity threshold for certified/signed content
- User friendly Mutual Authentication for Organizations
 - Signet-Ring™

Thank you!