WebID

TPAC 2020

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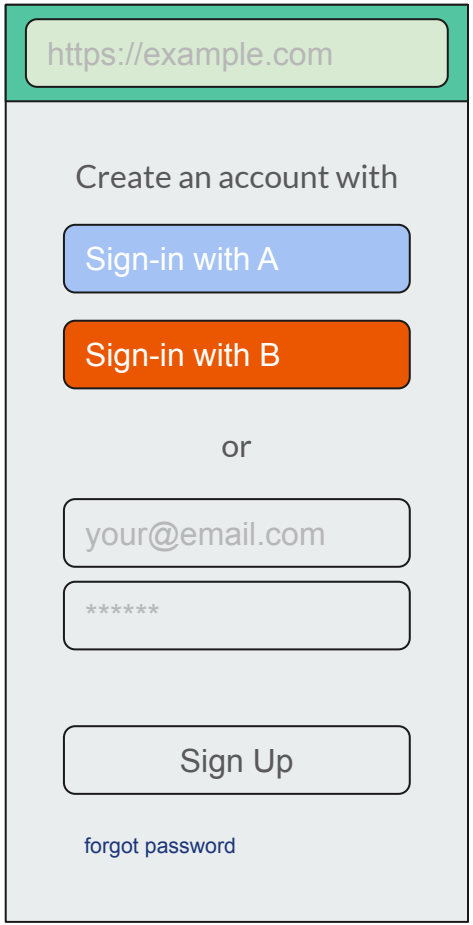
https://wicg.github.io/WebID

Agenda

- The Problem
  - Premise: federation is good, we want to preserve it.
  - How federation works
  - User activity tracking on the web
  - Scope of this project
- Solution Framework
  - Directed identifiers
  - High-level approaches for an identity API
- Moving Forward
  - Challenges
  - Community engagement

The Problem

Federation is Safer Than Usernames/Passwords

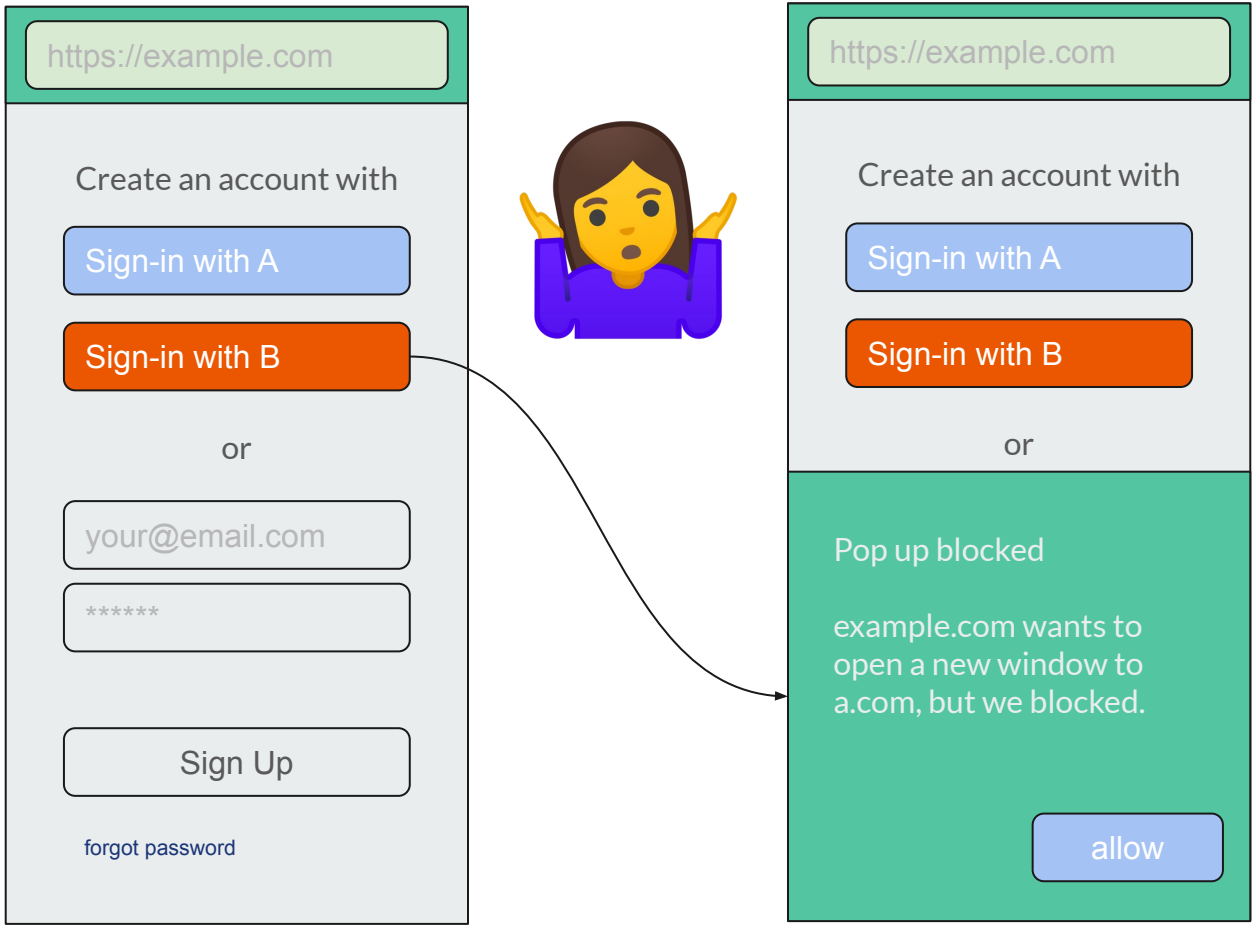


Two factor authentication,
password-less single sign-on

phishing, credential stuffing,
password reuse

Browser
RP
IDP

Reliance on General-purpose Web Primitives

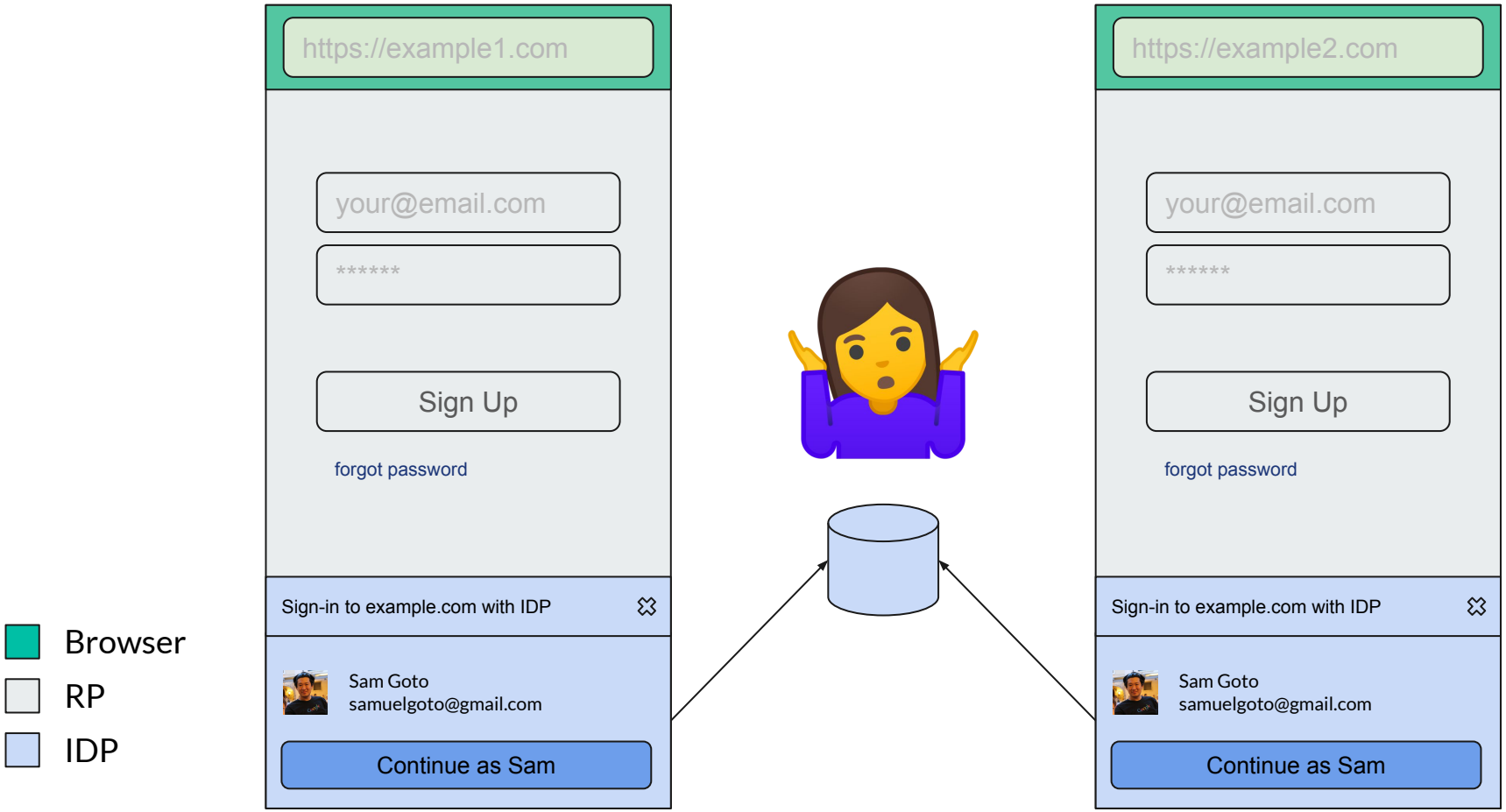


- Browser
- RP
- IDP

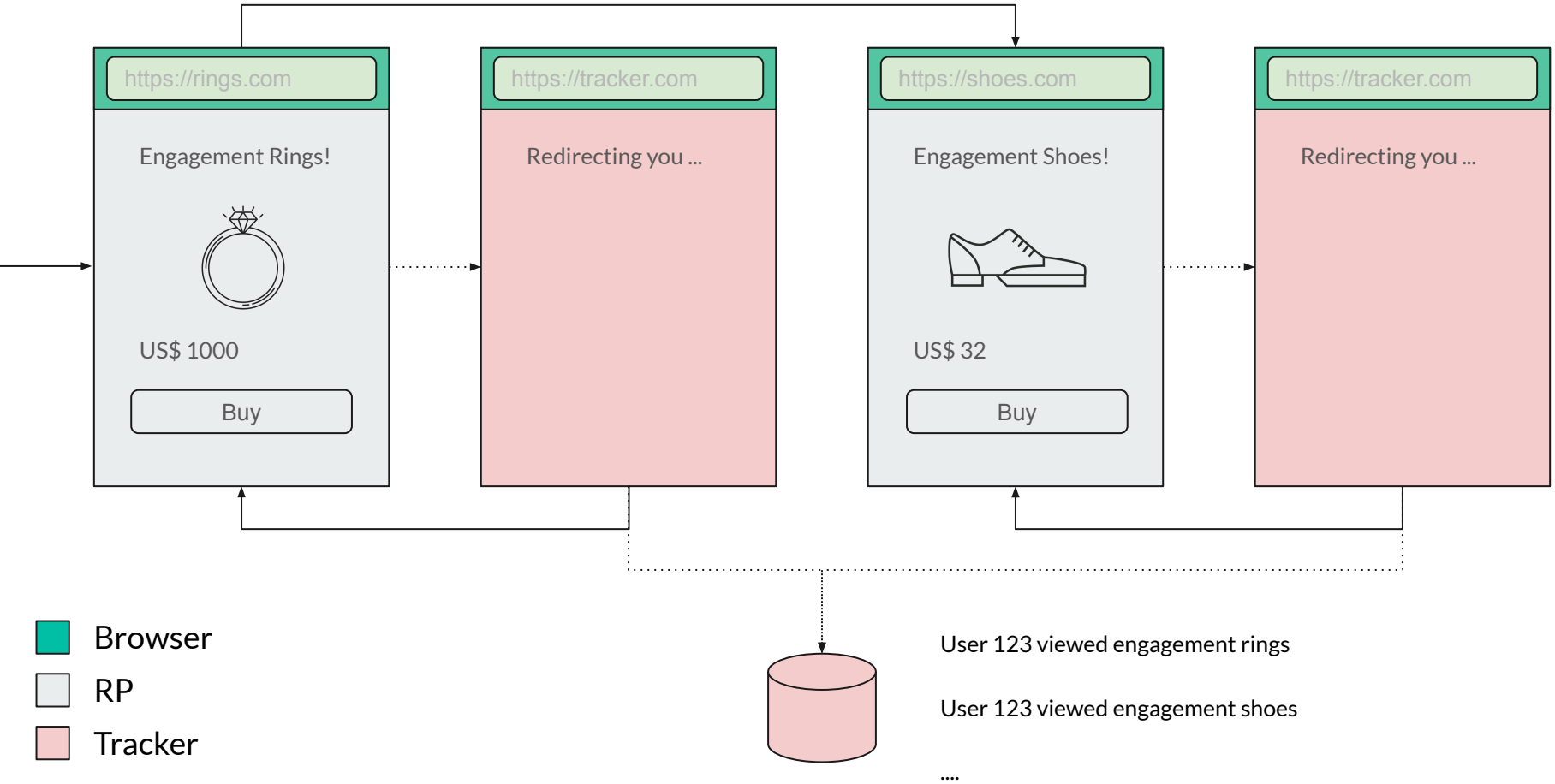
Other low level primitives:

- Iframes
- Cookies
- Redirects
- Pop-ups
- URL Parameters

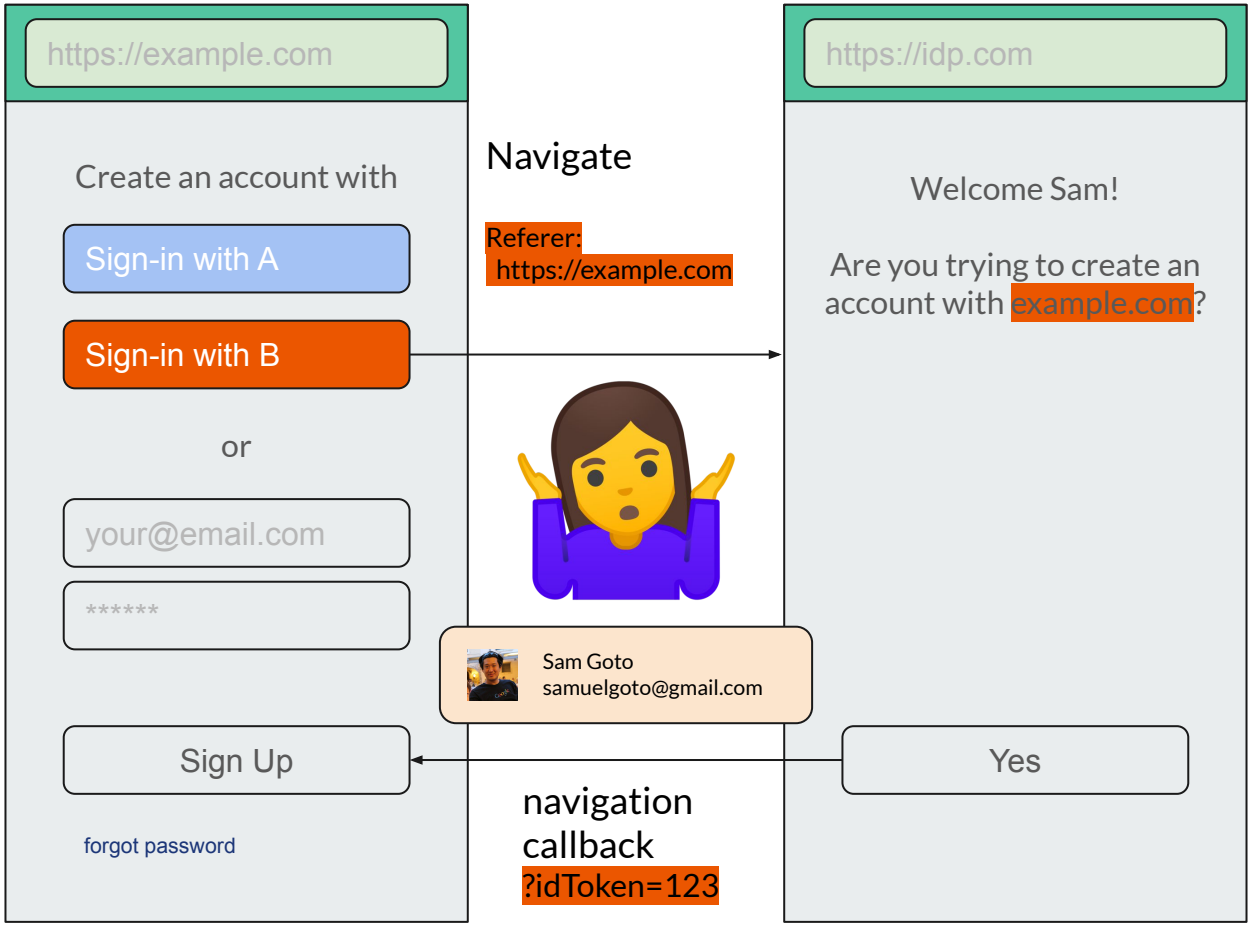
Third-Party Cookie Access



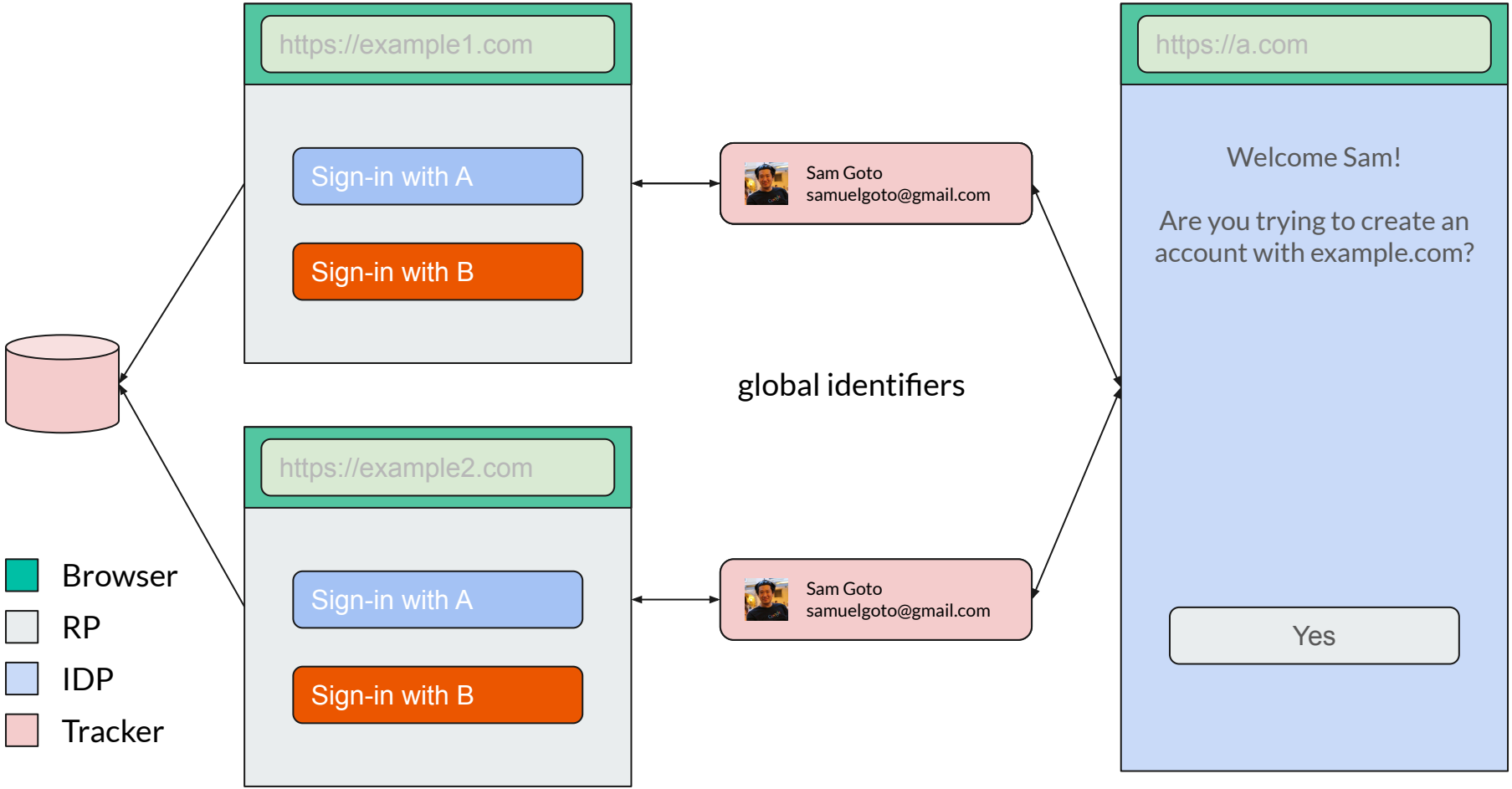
Navigational/Bounce Tracking and Link Decoration



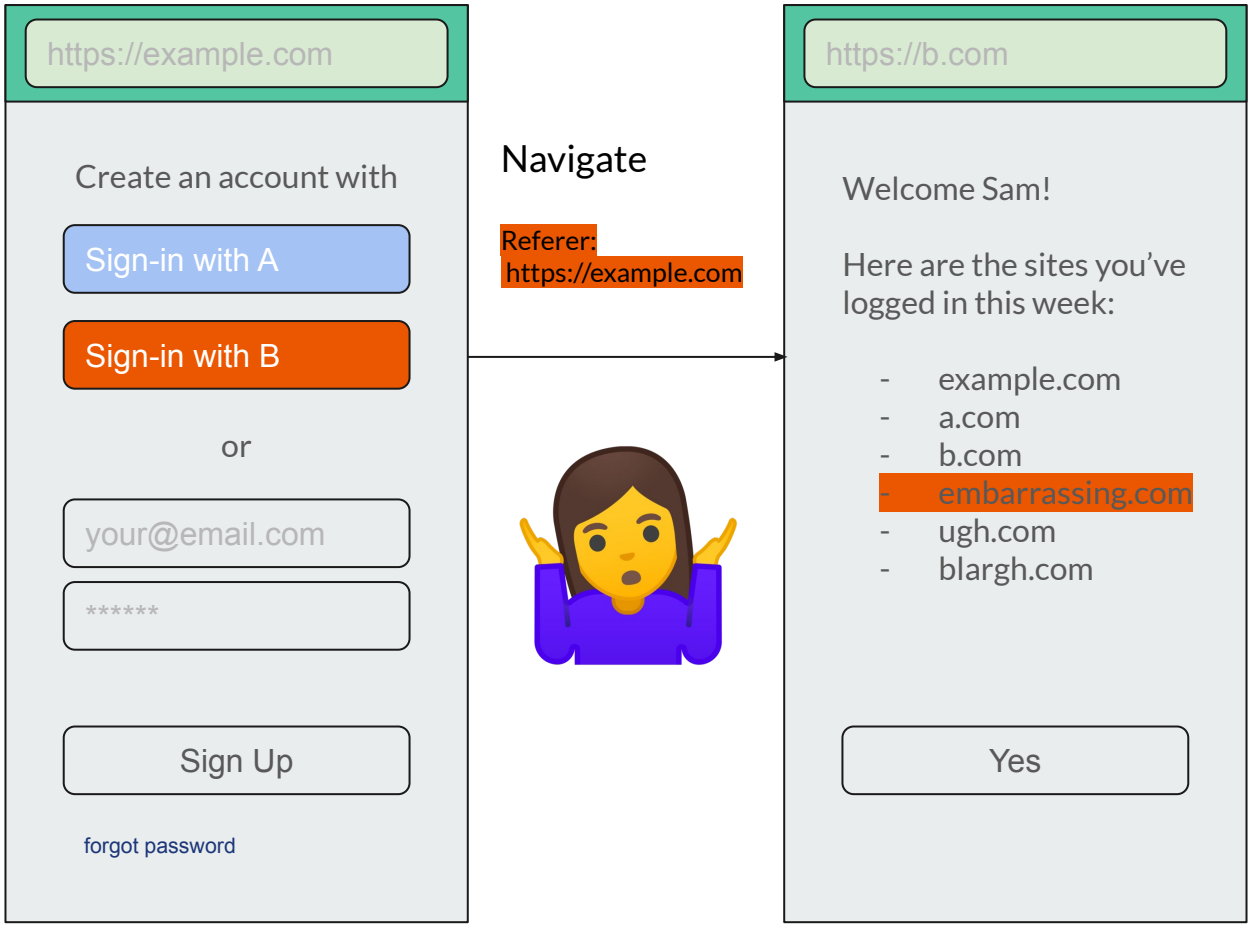
The Classification Problem



RP Consequences of Web Identity



IDP Consequences of Federated Sign-in



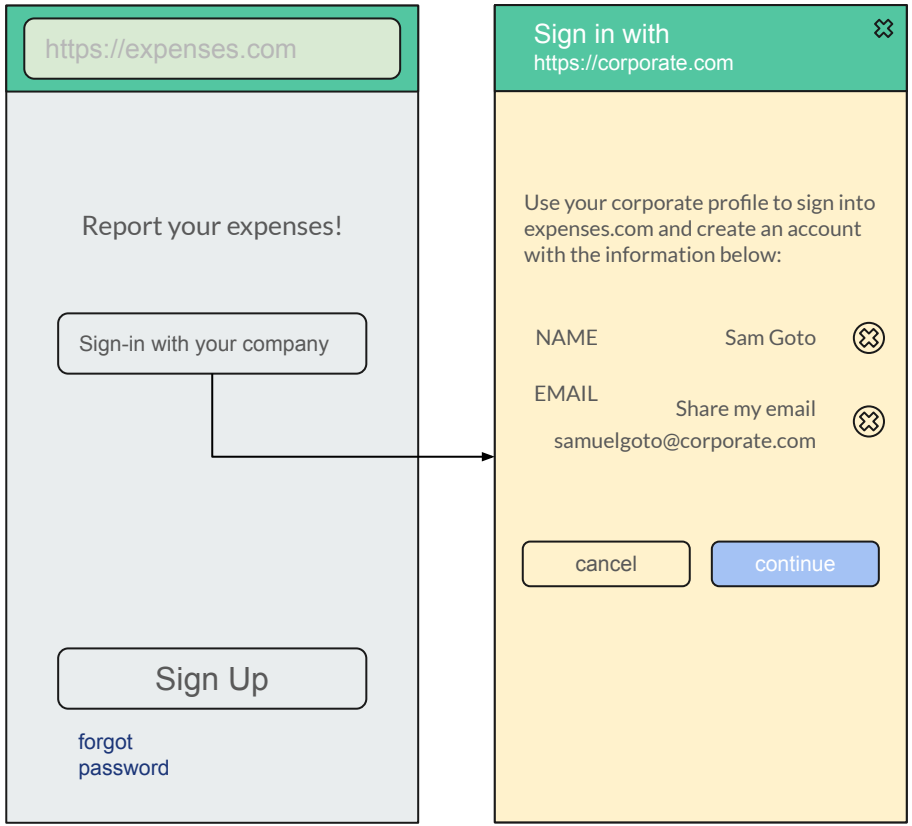
Scope and Limitations

Currently out of scope

- IDP Impersonation
- Cross-device sign-in state
- The “NASCAR flag” problem

Enterprise Use Cases

UA IDP RP

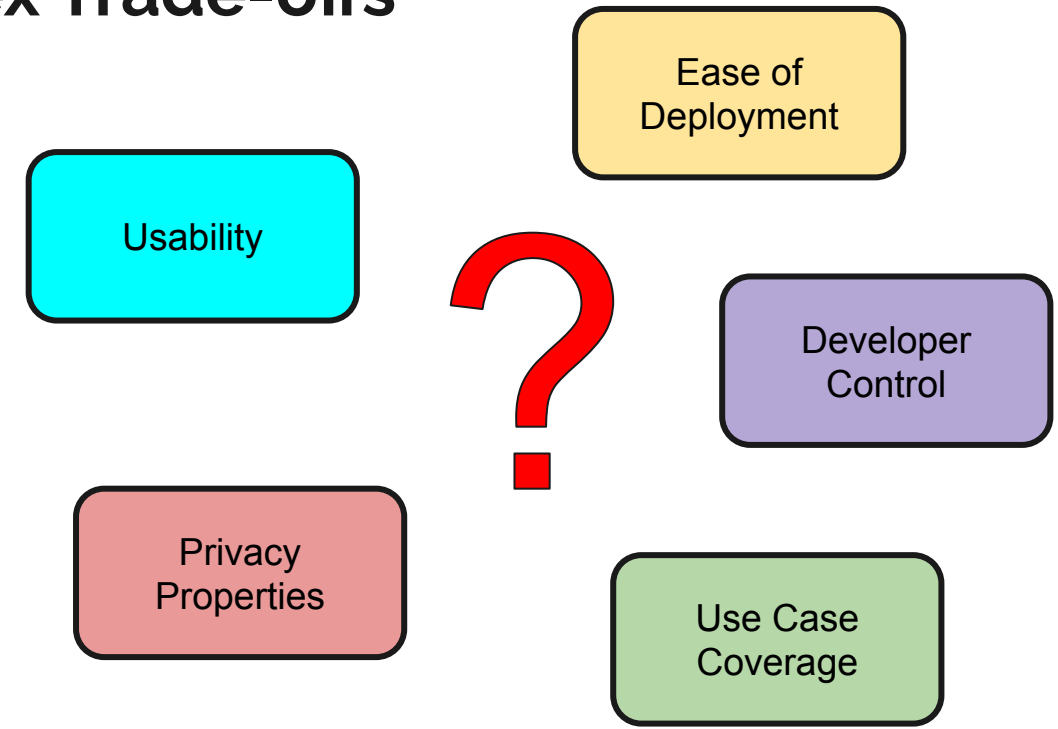


WebID Proposals for Sign-In / Sign-Up

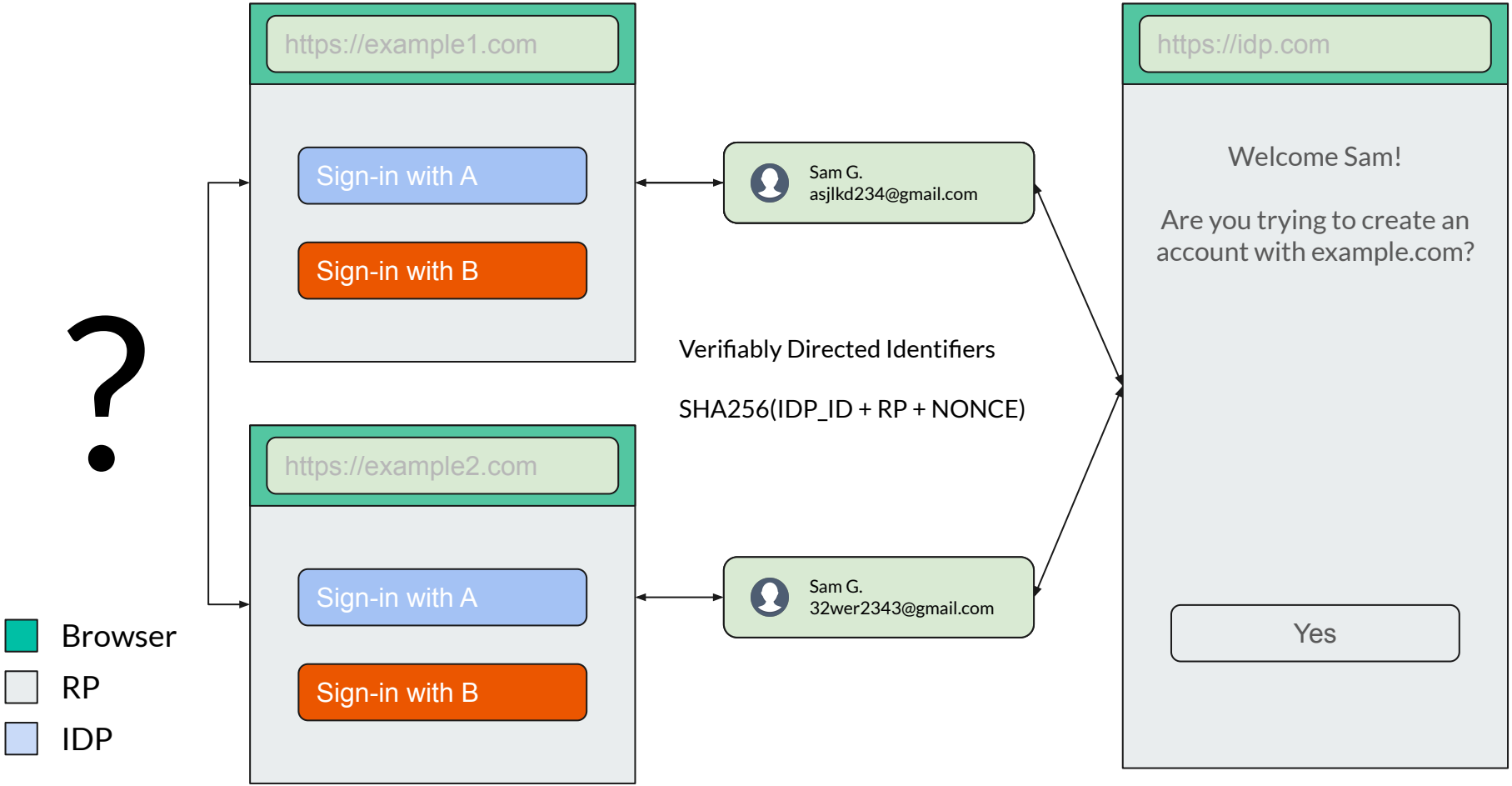
Important caveat

This project is in very early stages and everything below is still considered exploratory.

Complex Trade-offs



Directed Identifiers

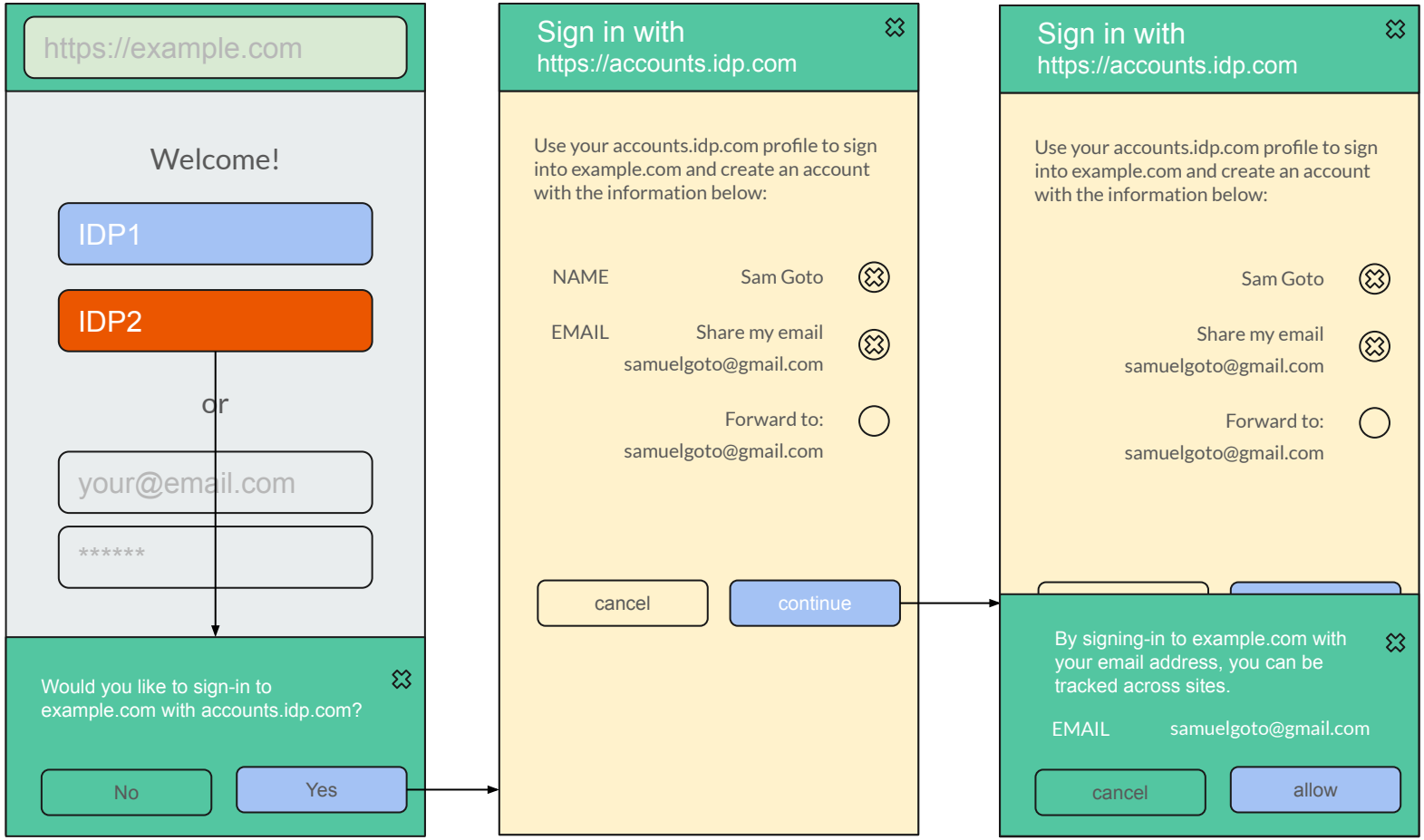


Alternatives under consideration

- Approaches for designing a new API fall into three general buckets:
  - The *Permission-oriented* Variation
  - The *Mediation-oriented* Variation
  - The *Delegation-oriented* Variation

UA IDP RP

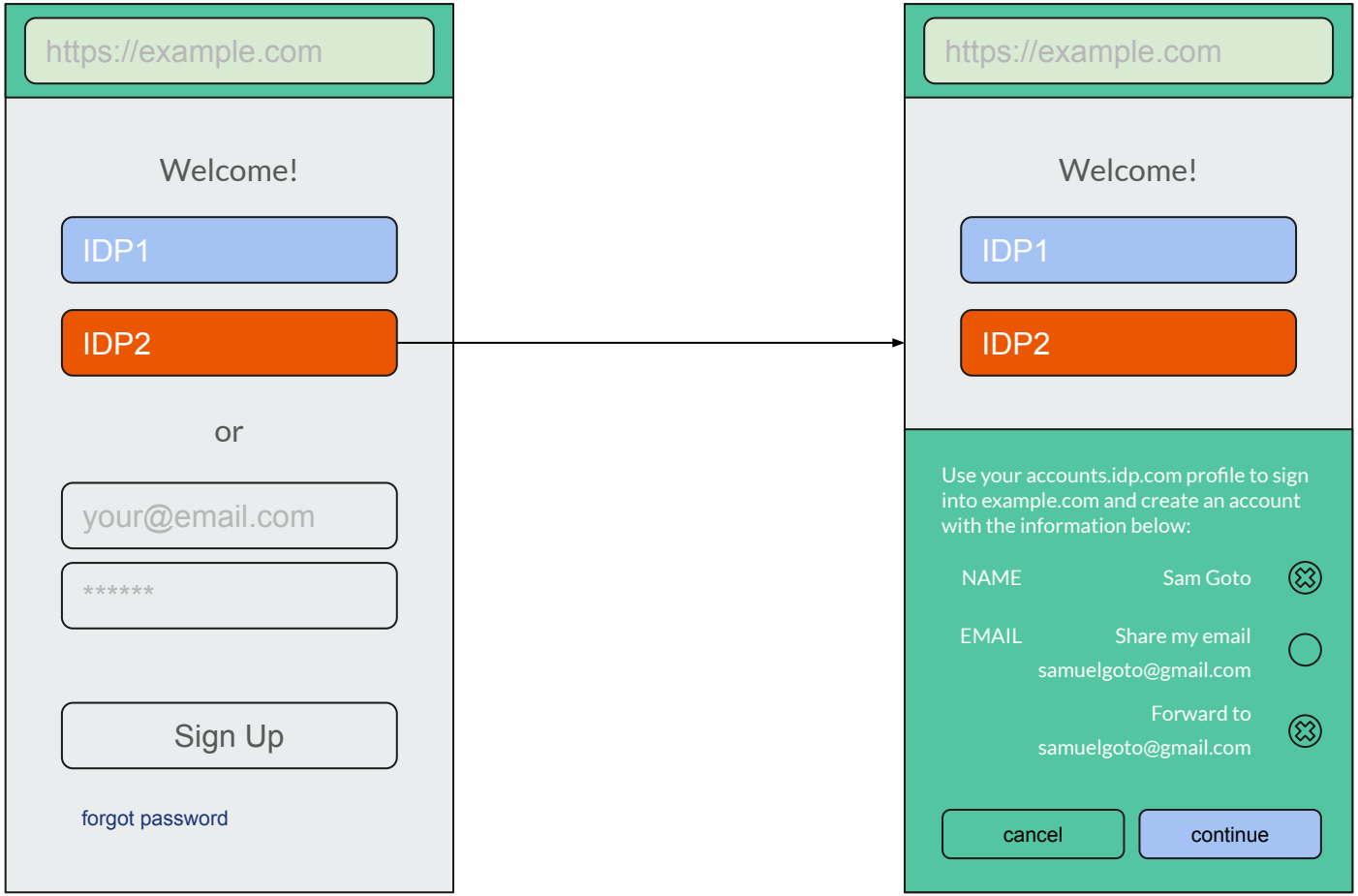
#1 The Permission-oriented Variation



User Agent

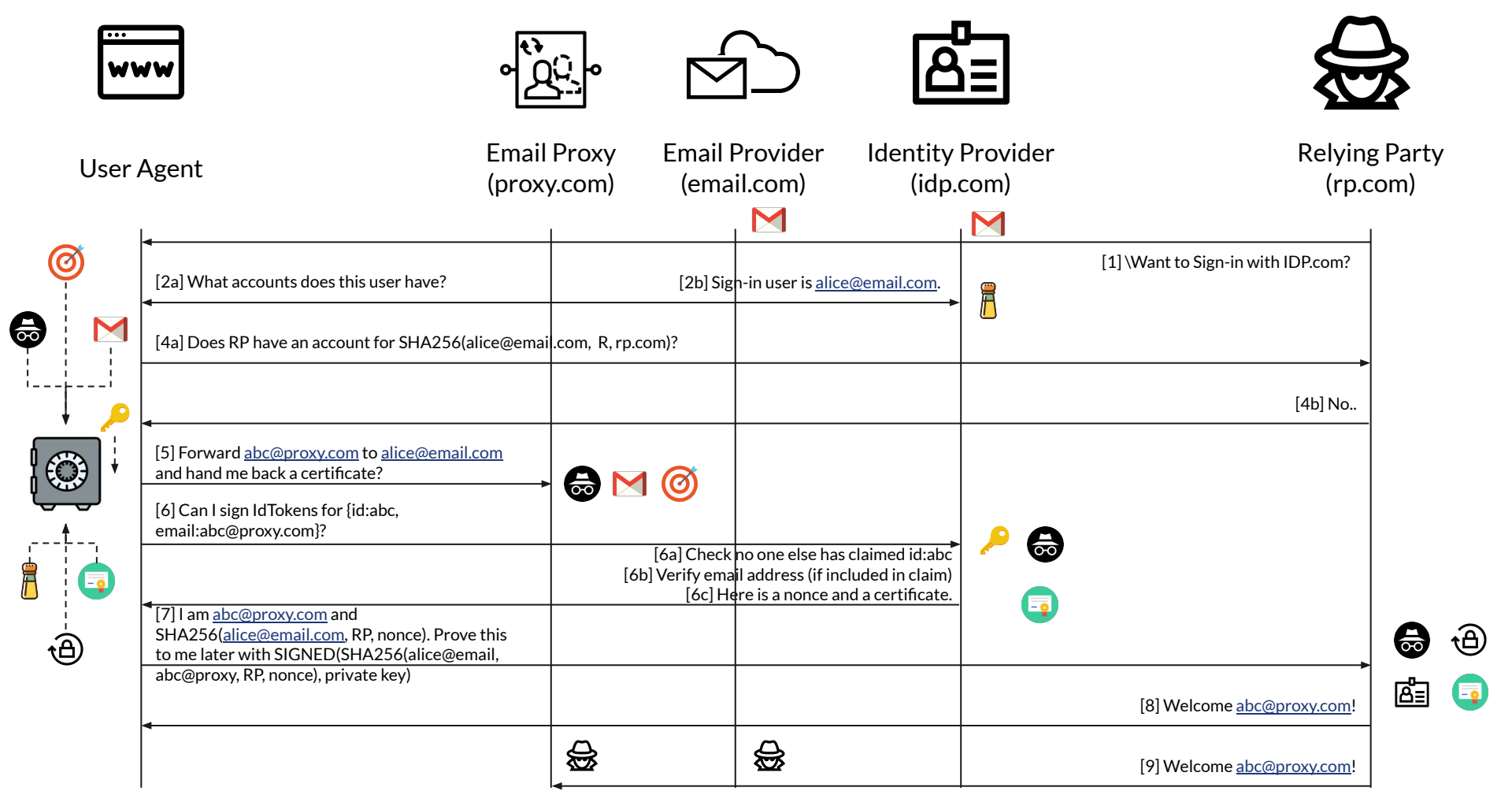
Relying Party

#2 The Mediation-oriented Variation



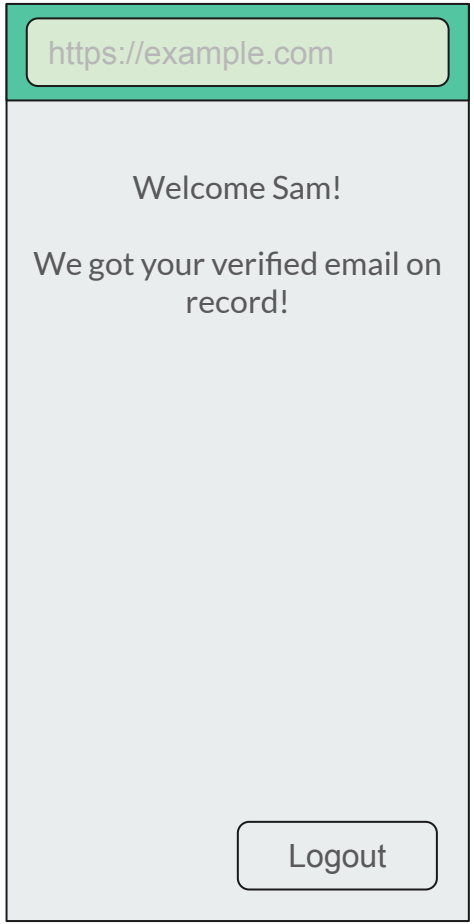
IDP Tracking

- Neither the permission-based nor mediation-based approach limits the ability of the IDP to know where the user has signed in using the IDP credentials.
- Delegation-based approach redefines the role of an IDP to address that.



#3 The Delegation-oriented Variation

Server-Side Relying Party Backwards Compatibility

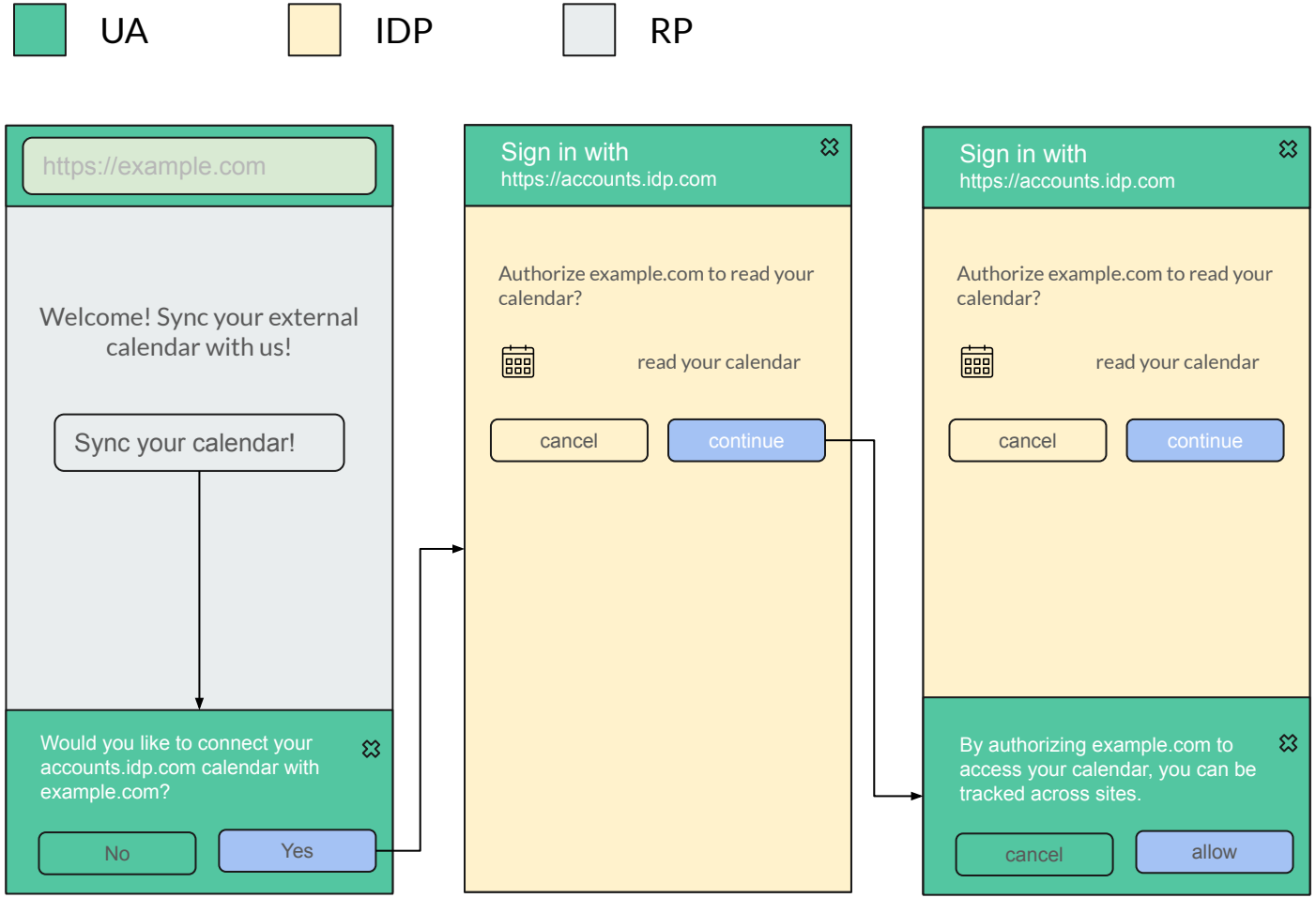


If the user grants access, the id token is passed back to the application:

```
{
  "alg": "HS256",
  "typ": "JWT"
}
{
 "iss": "https://accounts.a.com",
 "sub": "110169484474386276334",
 "aud": "https://example.com",
 "name": "Sam",
 "given_name": "Sam",
 "family_name": "G.",
 "email": "242423asf390@email.example",
 "email_verified": "true",
}
HMACSHA256(
  base64UrlEncode(header) + "." +
  base64UrlEncode(payload),
  SECRET
)
```

Browser
RP
IDP

Aside: Authorization



Looking Forward

Challenges

- Ecosystem design
  - Can RPs do their job well enough with directed identifiers? Customer support classic example.
- Technical questions
  - To what extent can we programmatically enforce directed identifiers?
  - How valuable are technical enforcement measures over policy requirements for IDP behaviour?
  - What about server-to-server communication that is in common use today?
- Accommodating other use cases
  - Should enterprise policies play a role in setting a different privacy bar for enterprise SSO? How would we handle “bring your own device” scenarios?

Engagement

- Many stakeholders:
  - RPs
  - IDPs
  - Browsers
  - Other identity ecosystem participants

- Feedback is welcome on https://github.com/WICG/WebID

This deck is shared publicly.