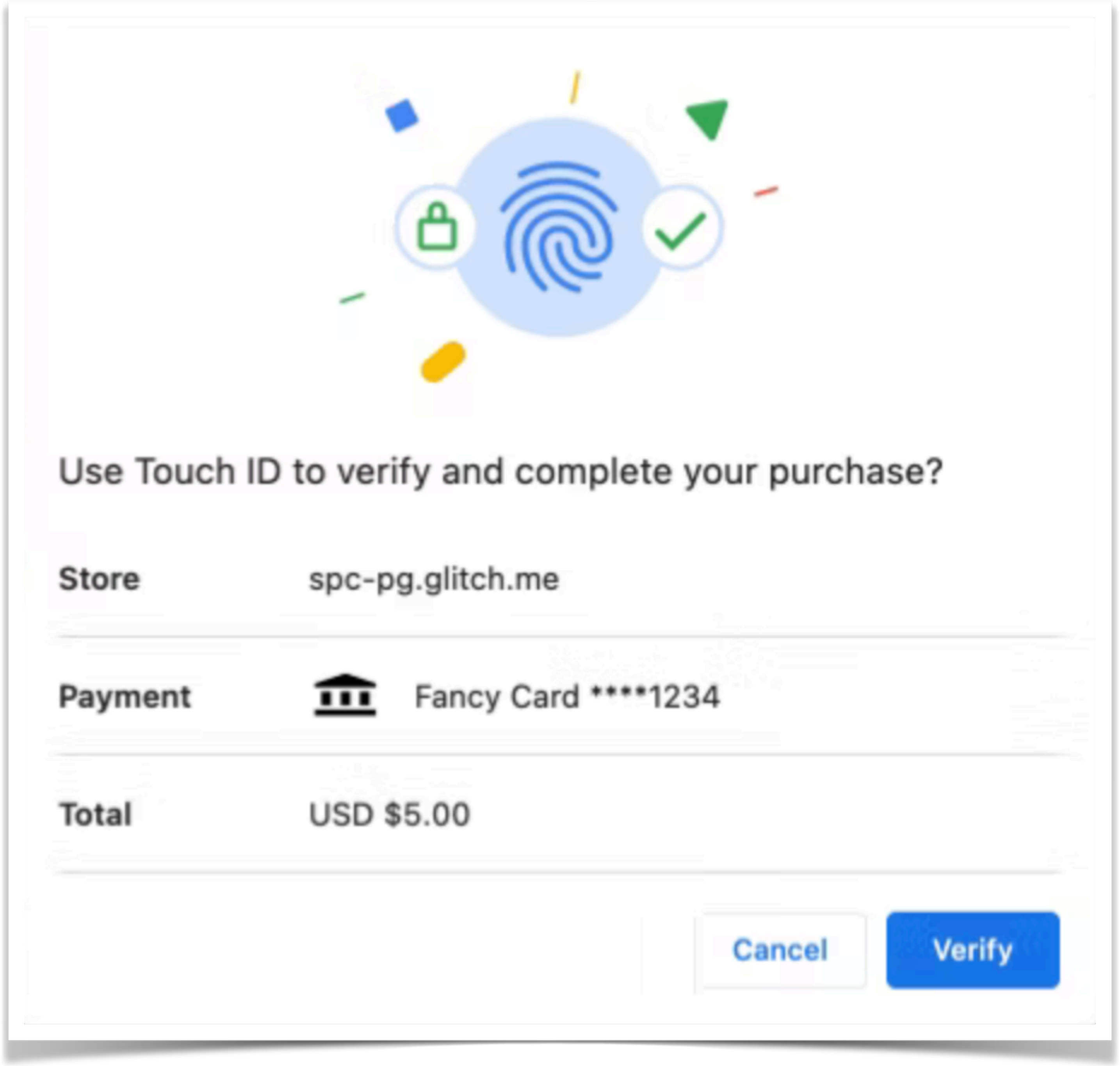
Improving SPC fallback UX

Web Payments Working Group, March 2023

Background Considerations

- Due to Web Authentication privacy requirements:
    - Do not want to reveal that user has no matching credentials.
    - Want “cancel” and “no matching credentials” to look the same from API perspective
    - Need some UX when no matching credentials; otherwise detectable through timing attack
- Do not want to provide link from transaction dialog to fallback experience (rationale: no links to arbitrary pages from secure UX)
- Merchant, not browser, in best position to present authentication options

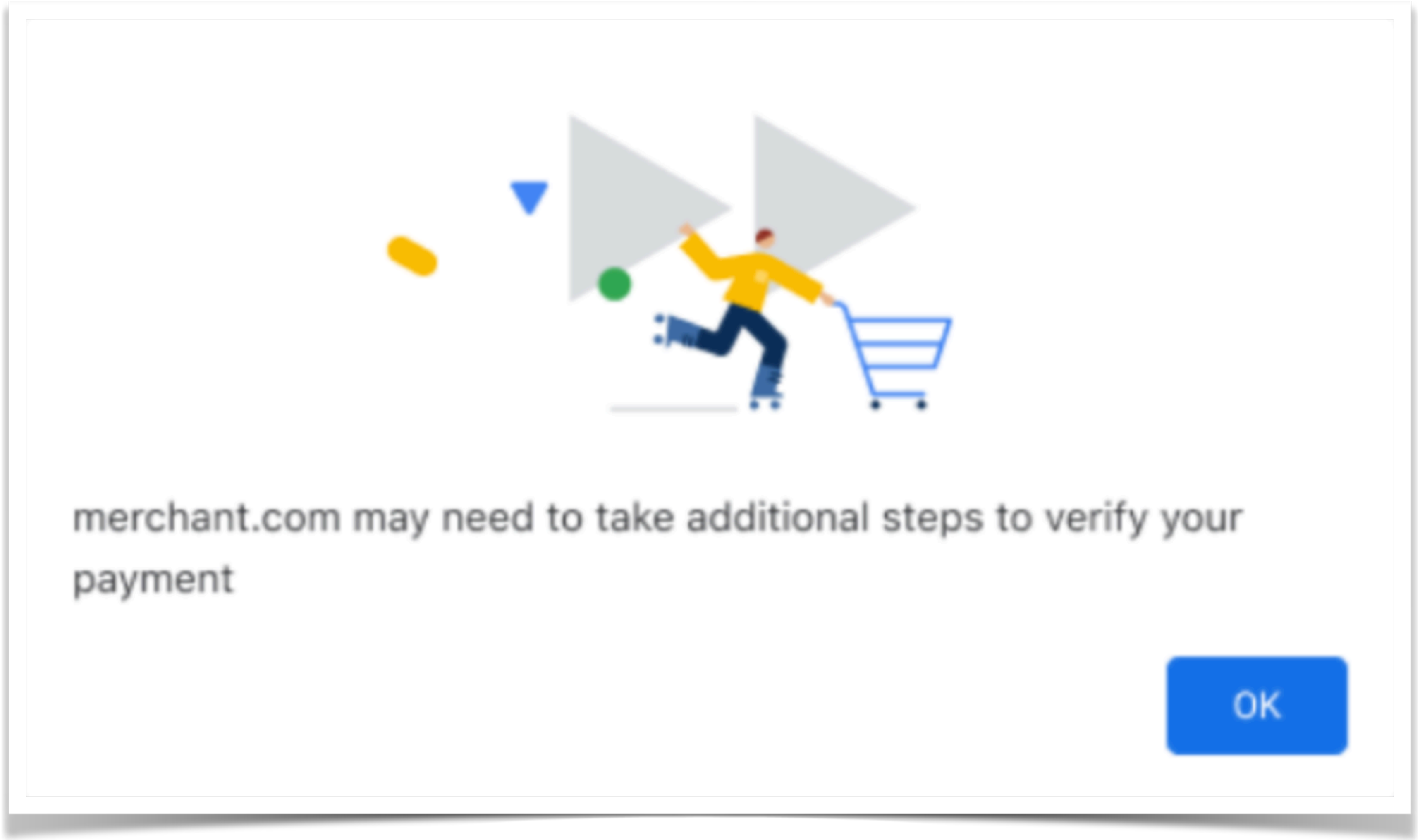
Today



Use Touch ID to verify and complete your purchase?

Store	spc-pg.glitch.me
Payment	Fancy Card ****1234
Total	USD $5.00

Matching credentials



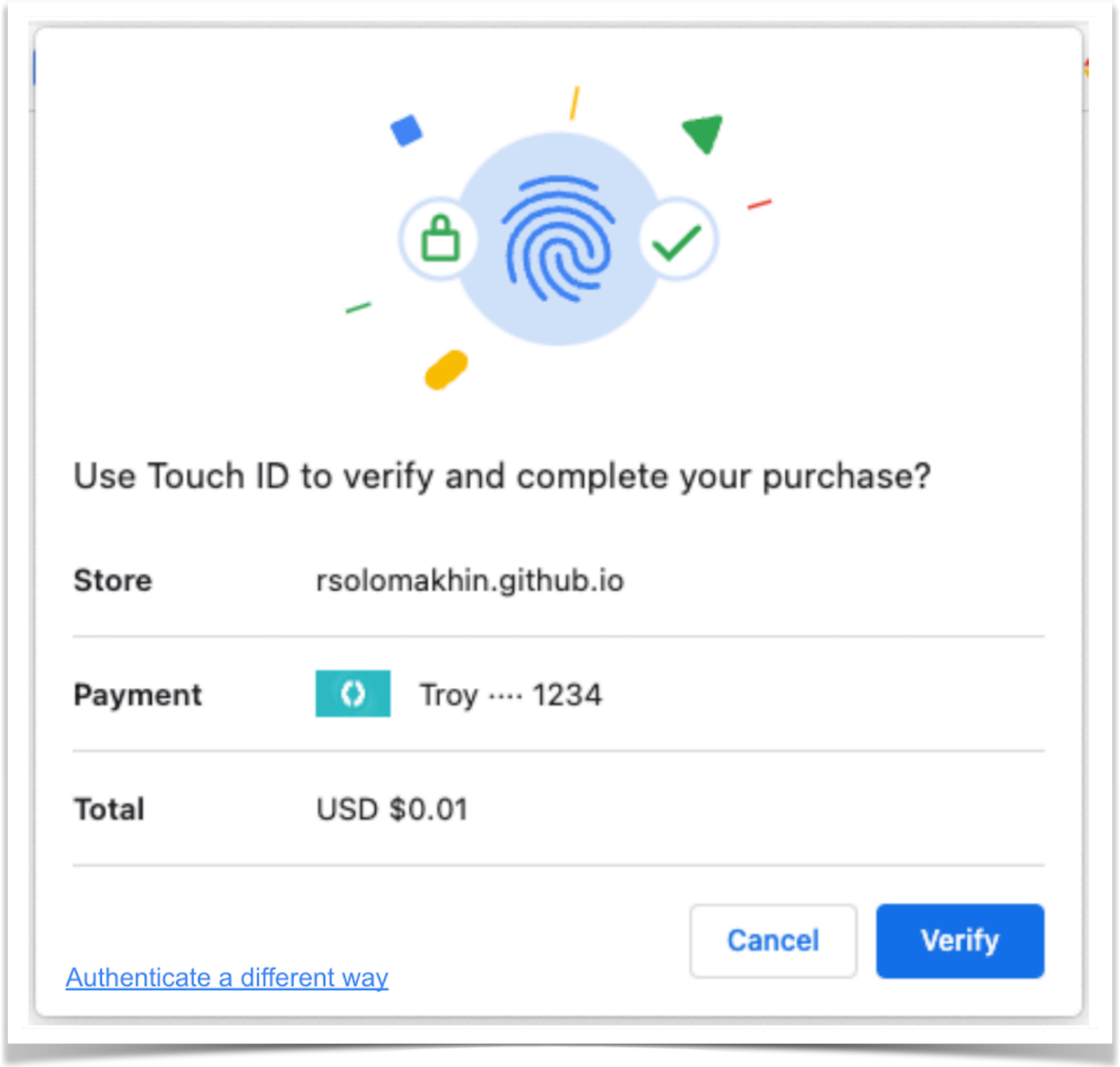
merchant.com may need to take additional steps to verify your payment

No matching credentials

API Behavior

- Matching Credentials
  - Verify => Invoke FIDO
  - Cancel => Error “XYZ”
- No Matching Credentials
  - Ok => Error “XYZ”

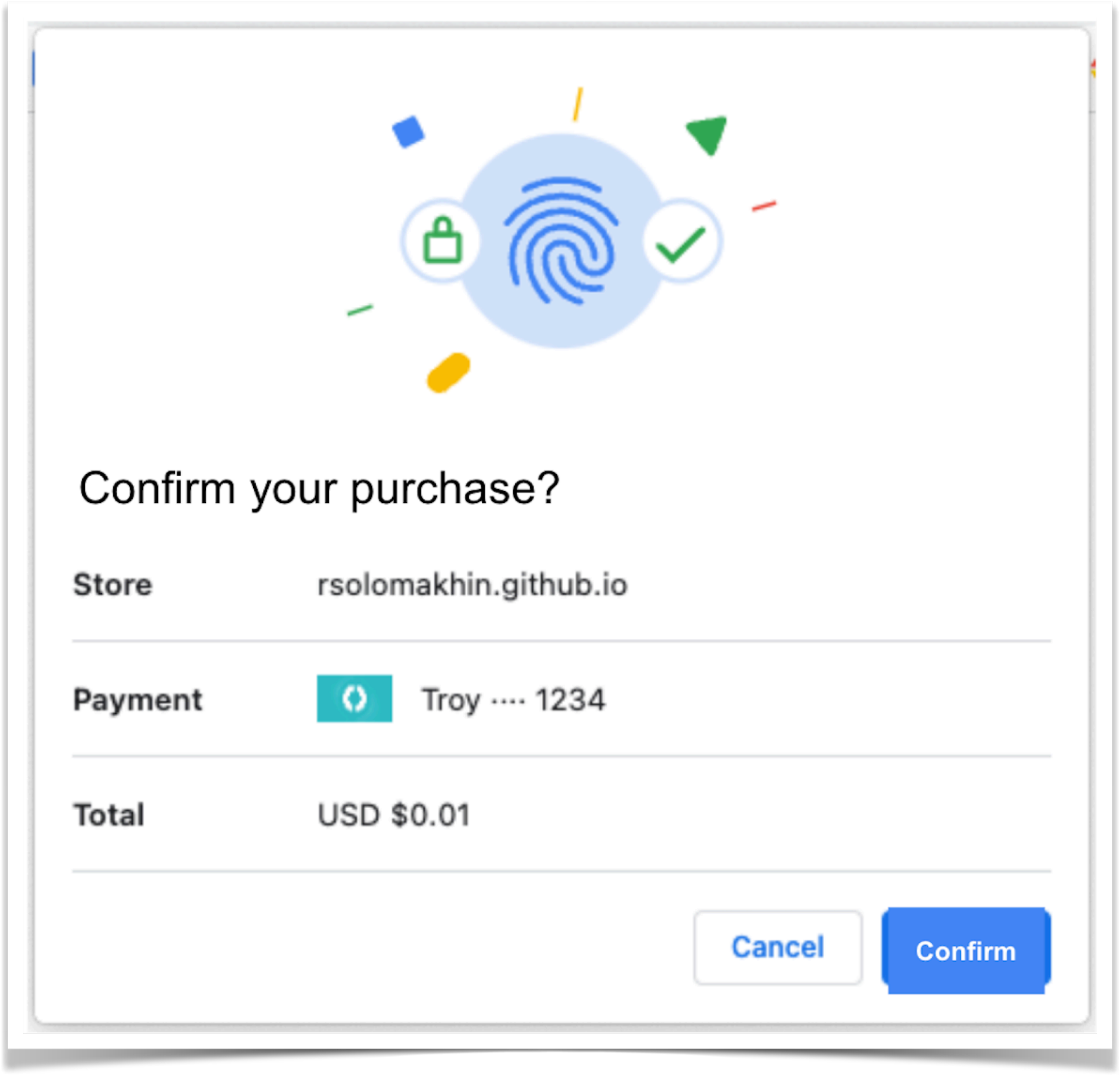
New idea



Use Touch ID to verify and complete your purchase?

Store	rsolomakhin.github.io
Payment	Troy ···· 1234
Total	USD $0.01

Matching credentials



Confirm your purchase?

Store	rsolomakhin.github.io
Payment	Troy ···· 1234
Total	USD $0.01

No matching credentials

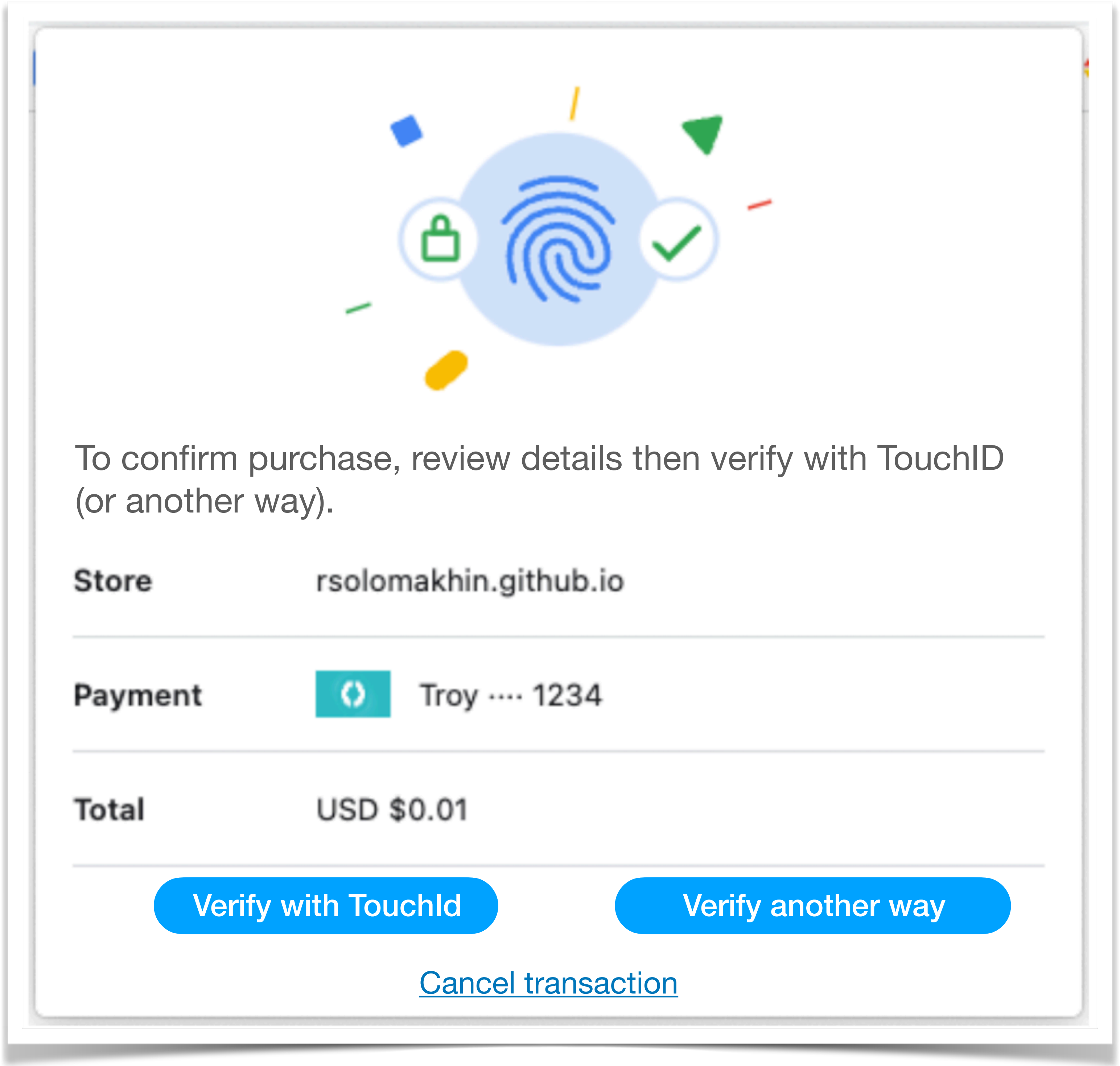
API Behavior

- Matching Credentials
  - Verify => Invoke FIDO
  - Authenticate a different way => Error “ABC”
  - Cancel => Error “XYZ”
- No Matching Credentials
  - Confirm => Error “ABC”
  - Cancel => Error “XYZ”

Benefits

- No leakage that there are no matching credentials
- New signal available to caller about user intention: “confirm” v. “cancel”
- Easier to understand user experience (to be confirmed by UX teams)

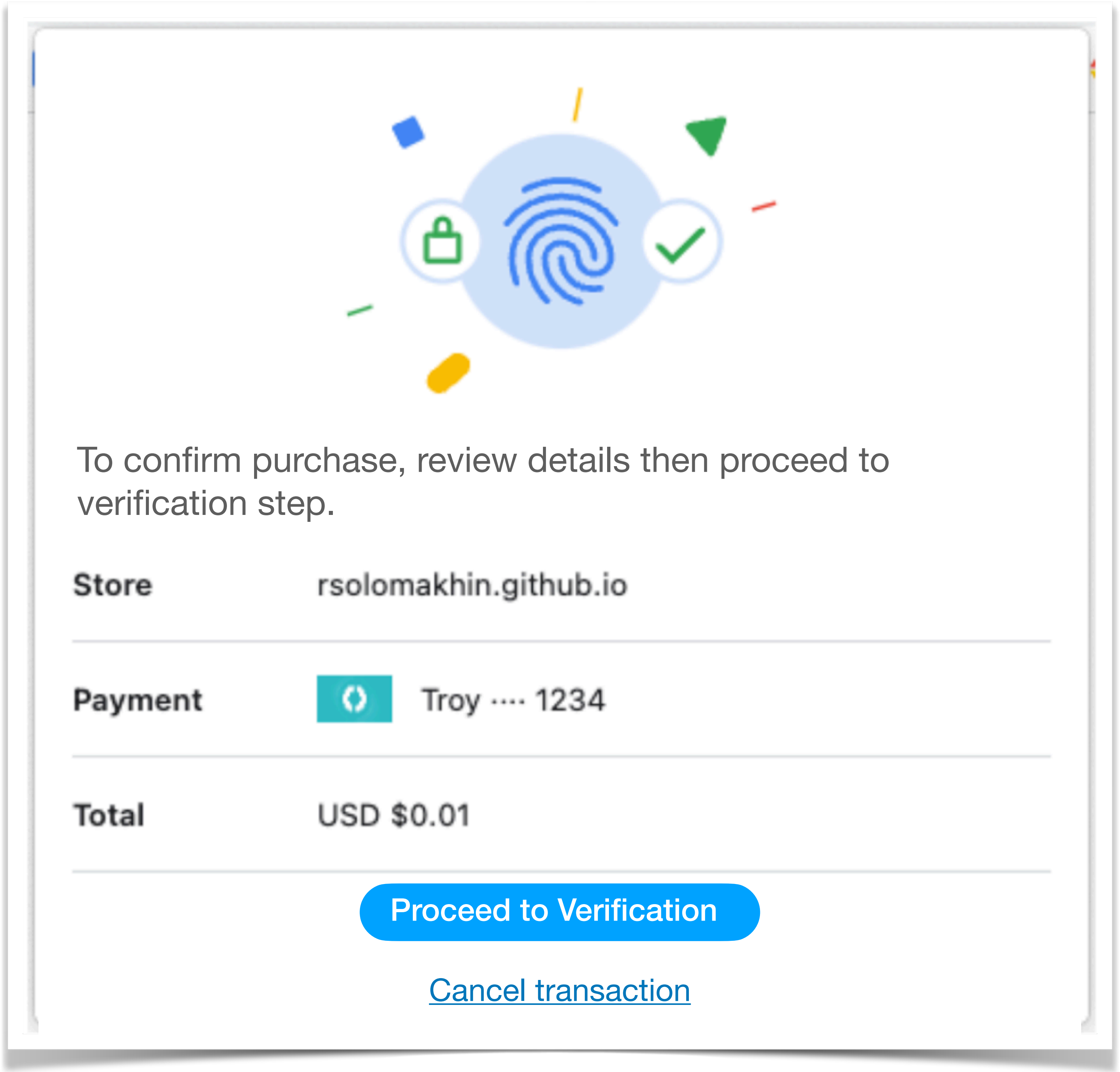
More ideas



To confirm purchase, review details then verify with TouchID (or another way).

Store	rsolomakhin.github.io
Payment	Troy ···· 1234
Total	USD $0.01

Matching credentials



To confirm purchase, review details then proceed to verification step.

Store	rsolomakhin.github.io
Payment	Troy ···· 1234
Total	USD $0.01

No matching credentials

Even More Ideas

- Matching Credentials
  - Verify => Invoke FIDO
    - Good FIDO authentication => Assertion
    - **Bad FIDO authentication (cancel / error / timeout) => Error “ABC”**
  - Authenticate a different way => Error “ABC”
  - Cancel => Error “XYZ”
- No Matching Credentials
  - Confirm => Error “ABC”
  - Cancel => Error “XYZ”
  - Timeout to close dialog => Error “ABC”   /* Assume user still wants to do transaction so give PSP another auth opportunity */