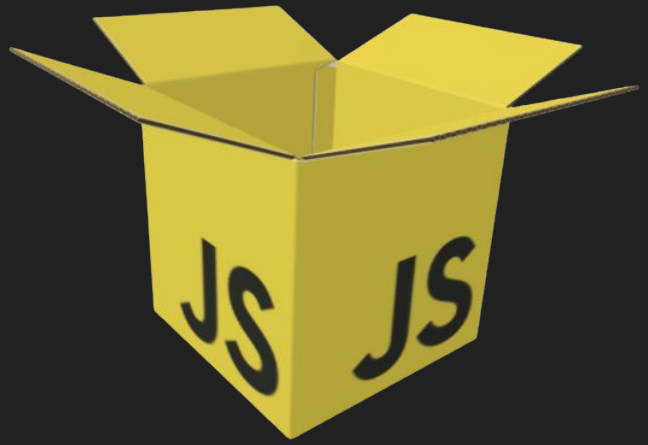
Record & Tuple

Stage 2 Update @ TC39 Tokyo 😢

Robin Ricard & Rick Button
Bloomberg

Advisor: Daniel Ehrenberg
Igalia

Box



Boxmaker, Boxmaker….

Boxes - a refresher

```
const object = {
    bar: () => "hello world",
};

const record = #{
    foo: Box(object),
};

assert("hello world" === record.foo.unbox().bar());
```

Boxes - viable!

Initially concerned that Box violates membrane requirements.

Champion group worked with SES to determine how Record/Tuple work with membranes.

Conclusion: not a security issue.

Boxes - viable!

Initially concerned that Box violates membrane requirements.

Champion group worked with SES to determine how Record/Tuple work with membranes.

Conclusion:

Primitives vs Objects

Primitives vs Objects

Currently, Records and Tuples are primitives, i.e. “not objects”.

Primitives don’t have identity, are observably equivalent to other values with the same type and “contents”.

Objects have identity; you can observe this via ==/===/Object.is.

Identity-less objects?

- What if Records and Tuples were “identity-less” objects:
  - Compared by contents
  - No observable identity
  - Always frozen
  - Can’t be in Weak{Map/Set/Ref}
  - Can’t contain private fields.

- This means:
  - Surface API stays the same
  - No wrapper objects.
  - [[Prototype]] == {Record/Tuple}.prototype

Record & Tuple in the TC39 Research Call

Interview scenario under review in the TC39 Research call

Broad topics for research:

- Syntax
- Boxing vs Auto-Boxing vs No-Boxing
- Ergonomics of updating Records & Tuples

Interviews will shape future surveys

Call for Participation: Monthly Record & Tuple Call

Discussion of Record and Tuple proposal and related work. We are interested in feedback from potential users, library authors, and implementers. Please attend if interested!

Sign up via Doodle, link will be posted in Reflector.

Started SpiderMonkey implementation work

Very early, much work to be done.
S/O to **Nicolò Ribaudo** for the awesome work! 🚀🚀🚀

https://phabricator.services.mozilla.com/D87232
https://phabricator.services.mozilla.com/D87272
https://phabricator.services.mozilla.com/D87586
https://phabricator.services.mozilla.com/D87737
https://phabricator.services.mozilla.com/D87762

Questions?