CBOR Ordered Maps

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2021-03-08

My Interest

- Maintainer of cbor2 Python library
- Implemented canonical (deterministic) encoding

Definition

- Key => Value Mappings
- Fast item lookup by key (i.e. Associative Array or Hash Table)
- Remembering insertion order
- Efficient iteration over all items
- Compact representation in memory (in Python)

Python OrderedDict

- Special class: `OrderedDict`
- Shares the representation of `dict` since Python 3.6
- Has some extra methods `pop()` and `move_to_end(key)`
- Order is important when comparing for equality

ECMAScript Map

`Map` is the ECMAScript equivalent of `OrderedDict`

Differences with `Object`

- supports arbitrary key types not just strings
- is an iterator over it's keys
- no key collisions with `Object`'s prototype

Ruby Hash

`Hash` is the Ruby equivalent of `dict` and `OrderedDict`. It remembers insertion order since v1.9, however the insertion order is not used during equality comparisons.

`cbor2` Issue

- https://github.com/agronholm/cbor2/issues/66
- CBOR type 5 loses order, especially with deterministic encoding
- Always decodes to Python's `dict` where order is intended to be arbitrary
- We need a tag to communicate authorial intent

Considerations

- How often will this be used?
- How small a tag should be allocated? Currently 279 is proposed.
- https://github.com/Sekenre/cbor-ordered-map-spec