OCapN & Agoric

Layers and Orders

OCapN mtg — Maybe August 8, 2023 ?

(new stuff starting at slide 14)

What Does Fred Want?

```
const optionDesc = harden({
  handle: handle1,
  instance: instanceHandle1,
  installation: coveredCallInstallation,
  description: 'exerciseOption',
  underlyingAssets: { Underlying: moola(3) },
  strikePrice: { StrikePrice: simoleans(7) },
  expirationDate: fooTime(100),
});
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  instance: M.any(),
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  description: 'exerciseOption',
  underlyingAssets: { Underlying: M.gte(moola(3)) },
  strikePrice: { StrikePrice: M.lte(simoleans(7)) },
  expirationDate:
    M.and(M.gte(fooTime(100)), M.lte(fooTime(150))),
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`passStyleOf(p: Passable)`

OCapN core data types

marshal (serialization)
`makeMarshal(s2v,v2s)`
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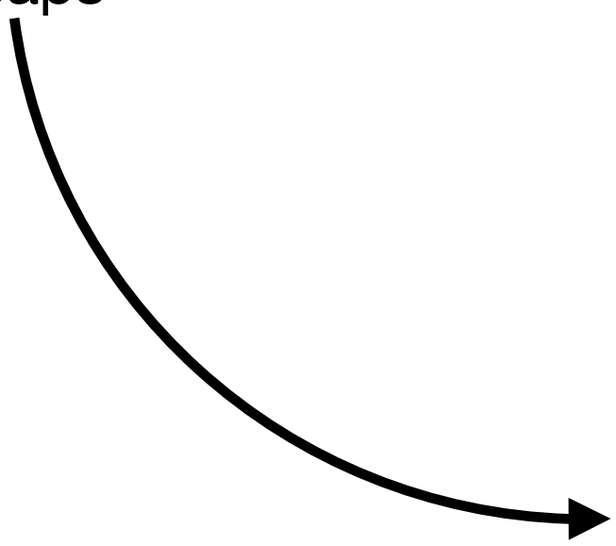

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	`kindOf` level	`passStyleOf` level	JavaScript level

Classification	`kindOf(p)`
	`M.key()`
	`M.pattern()`
		`passStyleOf(p)`	`typeof j`

Equivalence	`sameKey(k,k)`		`j === j`
			`Object.is(j,j)`
			`sameValueZero(j,j)`

Ordering	`compareKeys(k,k)` `M.gte(k)`	`compareRank(p,p)`	`j <= j` `[...js].sort(compare(j,j))`

Where the parameter

- `j` is for any JavaScript value.
- `p` is for any `Passable`, a subset of JavaScript values.
- `k` is for any `Key`, a subset of passables.

	OCapN name	`passStyleOf`	`typeof`	JS notes
Atoms				
	Null	`null`	`object`	null
	Undefined	`undefined`	`undefined`	
	Boolean	`boolean`	`boolean`	
	Float64	`number`	`number`	Only one `0.0`, Only one `NaN`
	SignedInteger	`bigint`	`bigint`	
	Symbol	`symbol`	`symbol`	well-known & registered only (names TBD)
	String	`string`	`string`	surrogate confusion (TBD)
	ByteString	`byteString` (TBD)	`object`	UInt8Array (TBD)
Containers				
	Sequence	`copyArray`	`object`	Array
	Struct	`copyRecord`	`object`	POJO
	Tagged	`tagged`	`object`	Tagged
Capability				
		`remotable`	`function`	Far function
			`object`	Far object with methods
			`object`	Remote presence
		`promise`	`object`	Promise
Others				
	Error	`error`	`object`	Error

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Data

	`kindOf(p)`	`passStyleOf(p)`	meaning
Atoms			
	...	...	primitive data
Containers			
	`copyArray`	`copyArray`	sequence of passable values
	`copyRecord`	`copyRecord`	set of name,passable pairs
	`copySet`	tagged	Set of unique keys
	`copyBag`		Mutiset of key,count pairs
	`copyMap`		Map from keys to passables
Matchers	`match:*`		Non-literal patterns
Guards (TBD)	`guard:*`		Non-pattern guards
Just Tagged	undefined		Not understood to have a kind
Capability			
	`remotable`	`remotable`	behavior + identity
	`promise`	`promise`	Promise
Other			
	`error`	`error`	best efforts loose diagnostics

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Keys

tagged

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Keys

Patterns

	`kindOf(p)`	`compareRank(p,p)`	`compareKeys(k,k)`
Atoms			
	`null`	js	js
	`undefined`	js	js
	`boolean`	js	js
	`number`	num rank< `NaN`	num incomp `NaN`
	`bigint`	js	js
	`symbol`	by name	by name
	`string`	lex (CESU-8?)	lex (CESU-8?)
	`byteString`	lex	lex
Collections			
	`copyArray`	lex	lex
	`copyRecord`	lex keys, value	Pareto
	`copySet`	lex Tagged	subset
	`copyBag`		subbag
	`copyMap`		Pareto
Matchers	`match:*`		N/A
Guards (TBD)	`guard:*`		N/A
Just Tagged	undefined		N/A
Capability			
	`remotable`	same rank	same or incomp
	`promise`	same rank	N/A
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M.and(M.gte(makeCopySet(['b','e'])),
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{'b','e'}..{'a','b','c','e','f'}

```
M.and(M.gte(makeCopySet([‘b’,’e’])),
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                  {‘b’,‘e’}..{‘a’,’b’,‘c’,‘e’,‘f’}

const makeCopySet = elements =>
  makeTagged(‘copySet’, reverseSort(elements));
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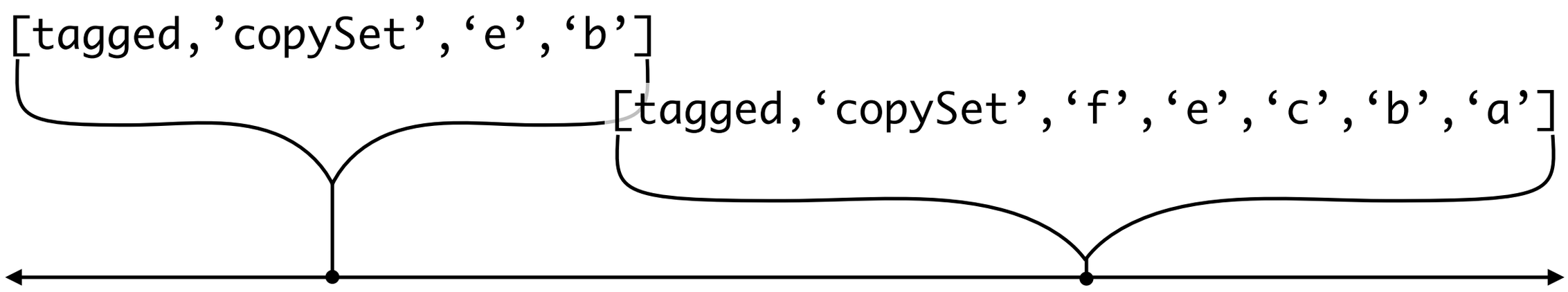
Sets subset



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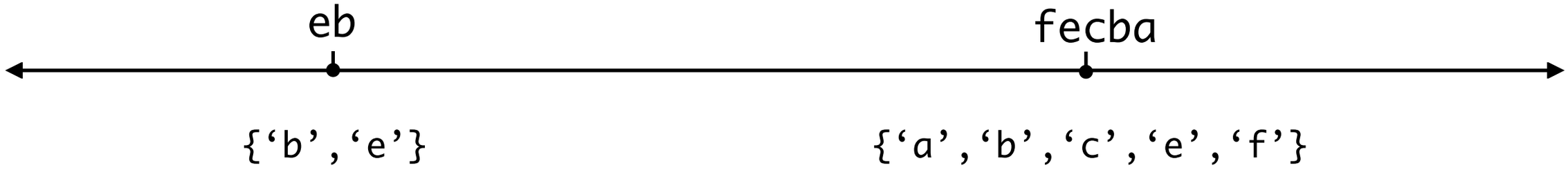

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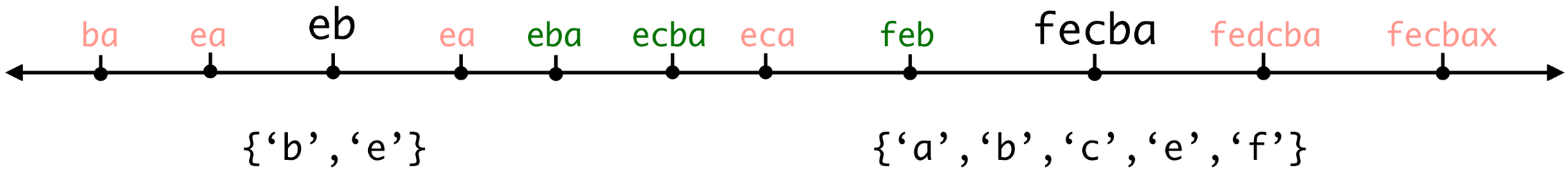

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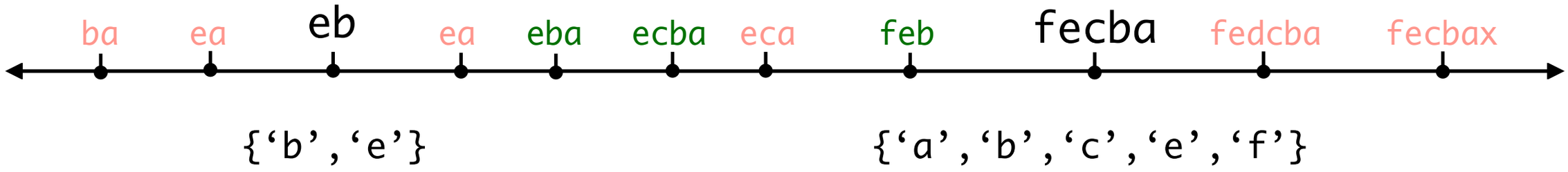

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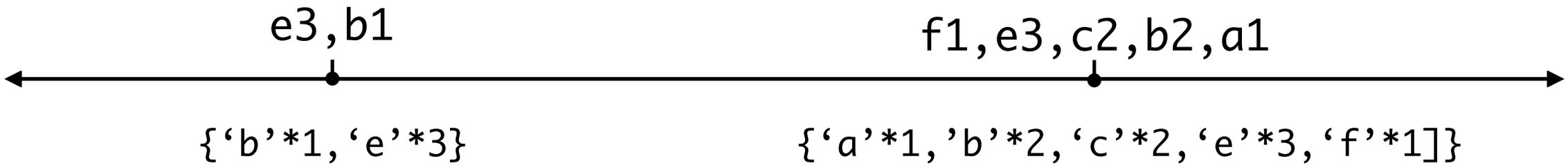

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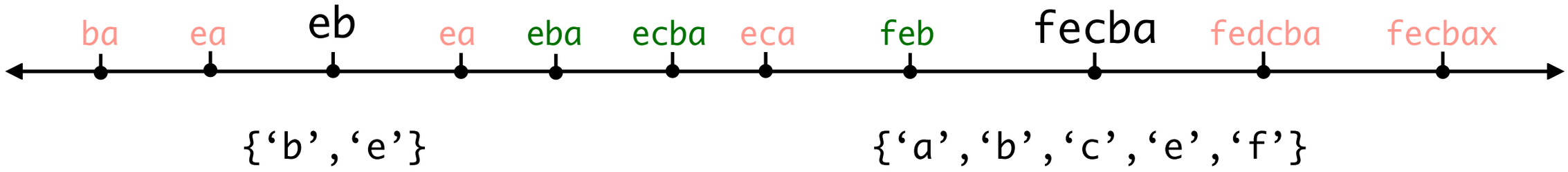

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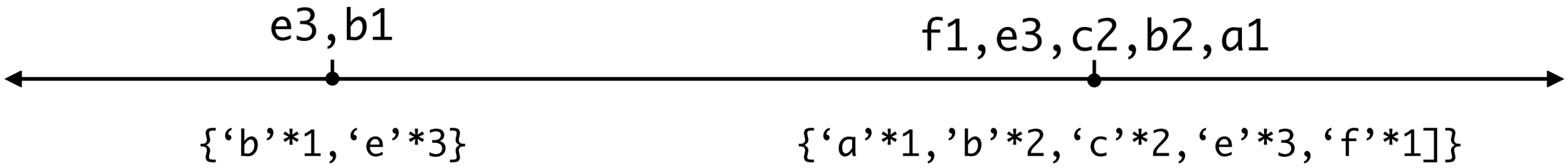

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