Reference Types for Wasm
Proposal update

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Recap

Add opaque reference type

New form of value type

…usable for locals, globals, parameters, results

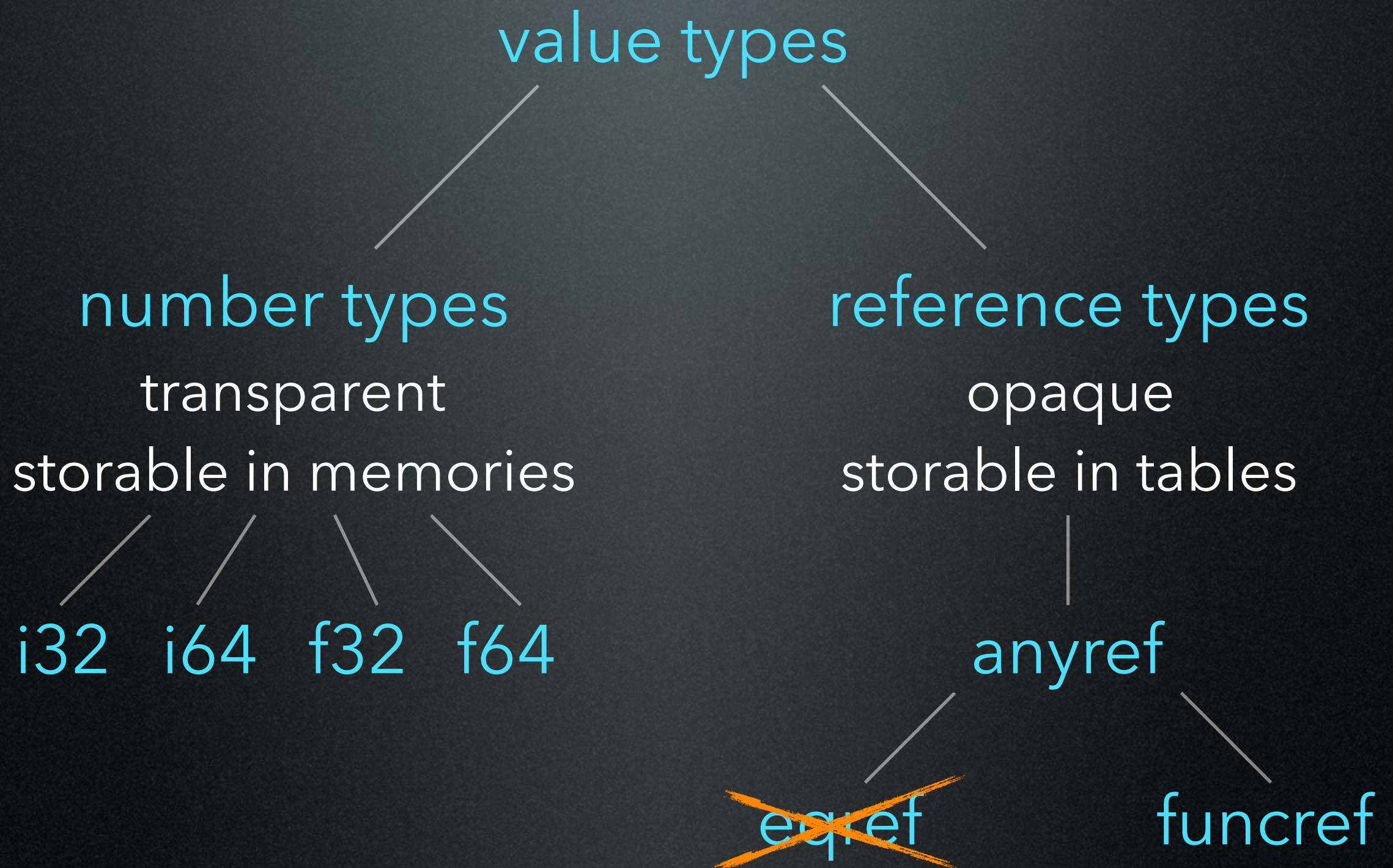…can be put into tables

…can be passed from/to embedder

Can not be constructed or accessed in Wasm

Allow multiple tables

Main motivation: host objects

value types

number types
transparent
storable in memories

reference types
opaque
storable in tables

i32   i64   f32   f64

anyref

eqref   funcref

Instructions

ref.null – produce null value

ref.is_null – check for null

ref.eq – compare references

table.get – load reference from table

table.set – store reference into table

Recent Changes

Dropped ref.eq instruction and type eqref

Allow all JS values into anyref

Proposal Status

prose spec :   ✓

formal spec : ✓

interpreter :   ✓   Stage 3

tests :   ✓

JS API :   (✓)

Implementation Status

V8 : ongoing

SpiderMonkey : ongoing

JSC : ☐

Chakra : ☐

Remaining steps

Implementations

Incorporate table.fill, table.grow, table.size?

Finalise opcode assignment

JS API tests