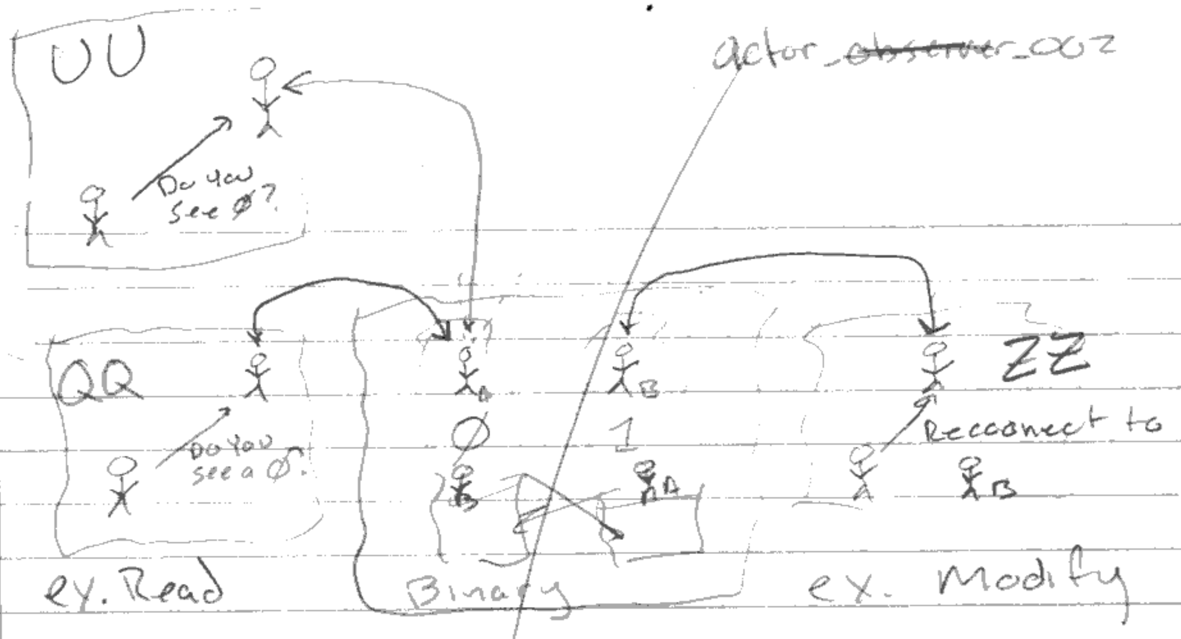


Key Points

An actor model is shown.
Actors abstract and decouple interaction
Actors support specific interactions

Structure can be reused
multiple references can be made into the same subspace/structure
the reference makes state local w/o a copy
the reference can be redirected to change local state

Actor model as generalization of

functional computation
category theory
universal machine
hidden markov model
layered neural network
particle system
blade of grass

Q) How would actor model represent immutable data structure?

Q) How would actor model represent immutable functional structure?

Q) How is memory represented?

λ Calculus

- Symbols
- operaters
- recursion
- transformations
- combinative

map — key
reduce

Select
Copy
Order flow

Both λ and turing
~~re~~
- Capture fundamental elements of computing
- Are simplifications of existing mechanisms

X	turing
Selecting data structures	traversing data structures
data ⇔ function	
recursion	relies more on short term memory

What is a function?

Decoupling

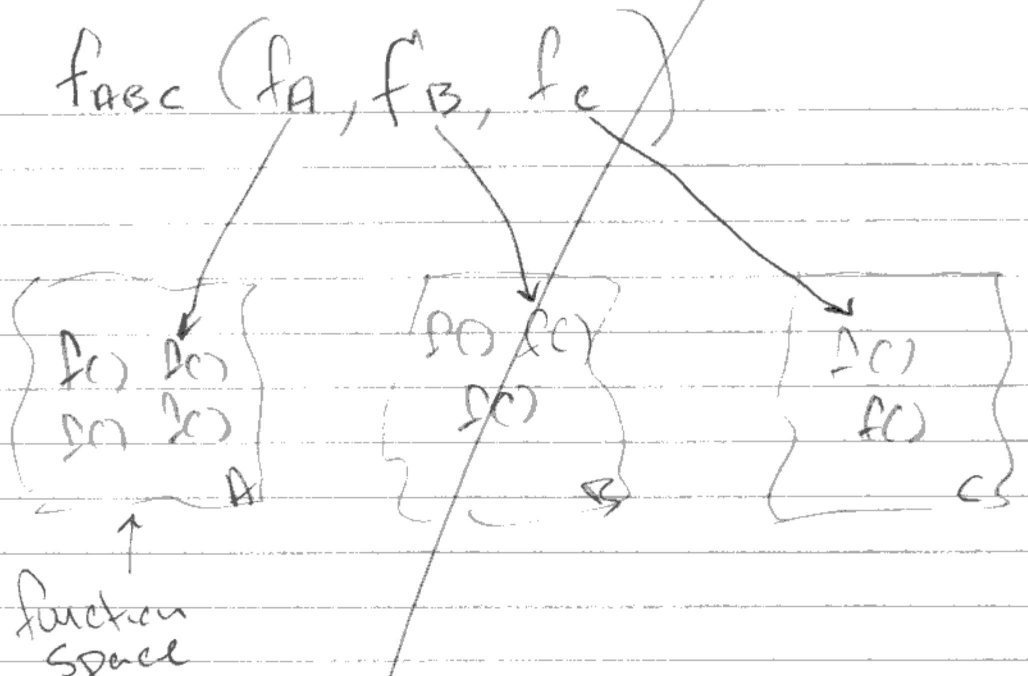
Re use

math – relation mapping between set of inputs
and set of outputs

inputs – domains
outputs – codomain
in/out pairs – graph

functions in same domain/codomain –
function spaces

function composition – chaining



Data structures encapsulated in functions

Function execution results in actions/f calls rather than output data structure

Because fABC simply invokes functions there is no constraint on the domain (input) and co-domains (output)

- The functions can act on same domain or different domains

Ex

fA - both the access method + the domain to operate on