

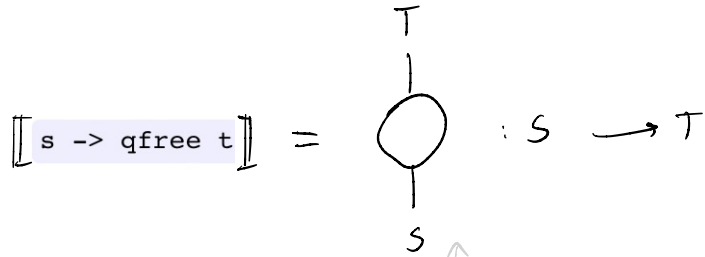
```
def discard (n :  $\mathbb{N}$ ) {  
  return true;  
}
```

= $\begin{array}{c} 0 \\ | \\ \mathbb{N} \end{array} : \mathbb{N} \rightarrow \mathbb{I}$

```
def discardQuantum (n :  $\mathbb{N}$ ) {  
  return true;  
}
```

= $\begin{array}{c} \textcircled{?} \\ | \end{array} : \mathbb{N} \rightarrow \mathbb{I}$

only available if chosen
classical structure on \mathbb{N}

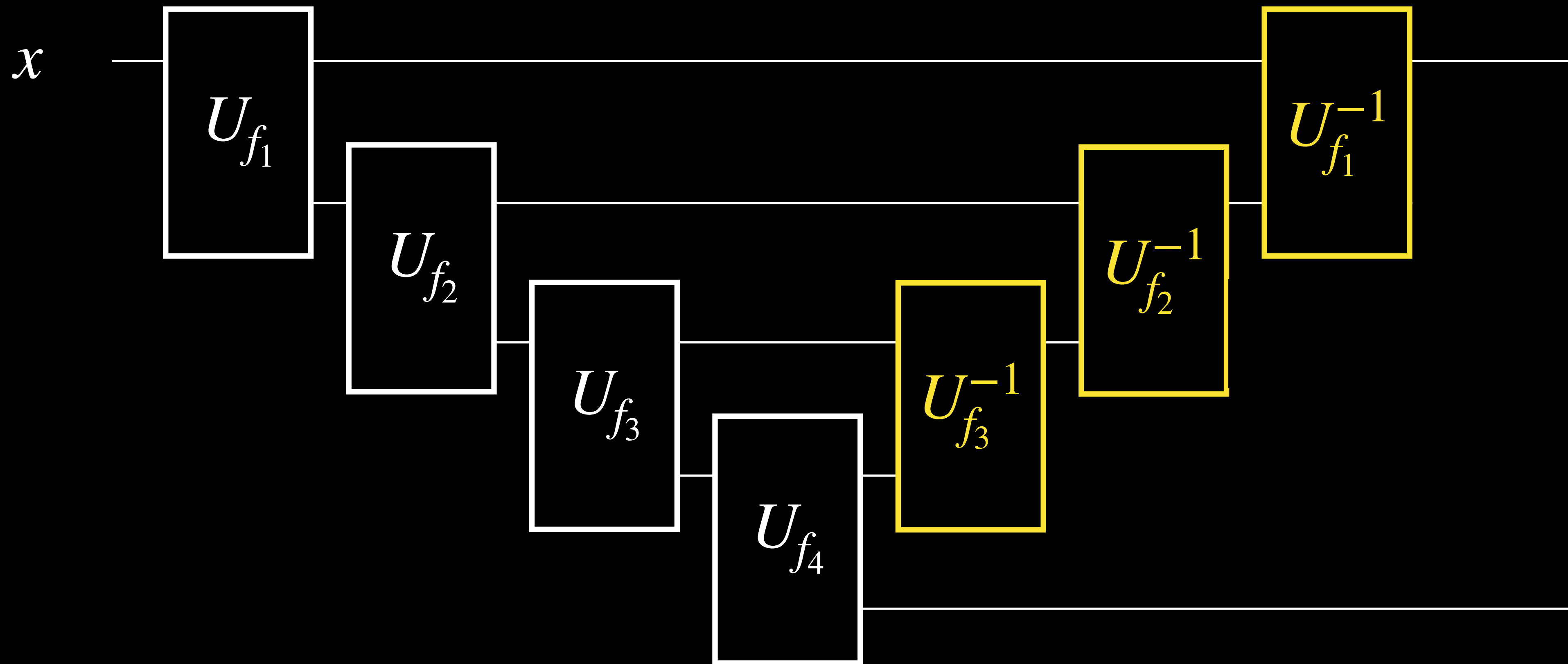


*spider built out of
 $\alpha, \psi, \eta, \beta$*

Computer Science Aspect

1. Space-Time Trade-offs

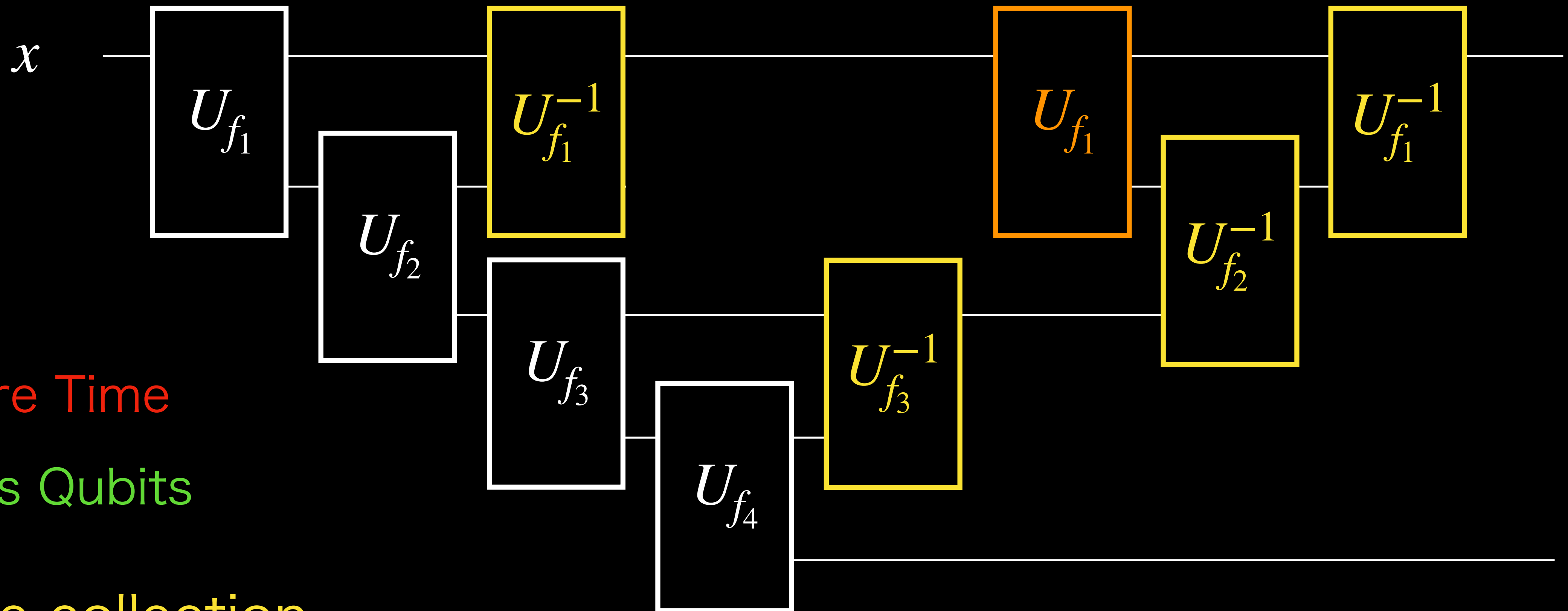
$$f_4 \circ f_3 \circ f_2 \circ f_1$$





Computer Science Aspect

1. Space-Time Trade-offs

$$f_4 \circ f_3 \circ f_2 \circ f_1$$



 More Time
 Less Qubits

Garbage collection

Computer Science Aspect

2. Verification

$$|00\rangle \mapsto |00\rangle - |01\rangle$$

Computer Science Aspect

2. Verification

$$|00\rangle \mapsto |0\rangle - |0\rangle$$

Computer Science Aspect

2. Verification

$$|00\rangle \mapsto |00\rangle - |00\rangle = 0$$

Abort

Cannot do uncomputation