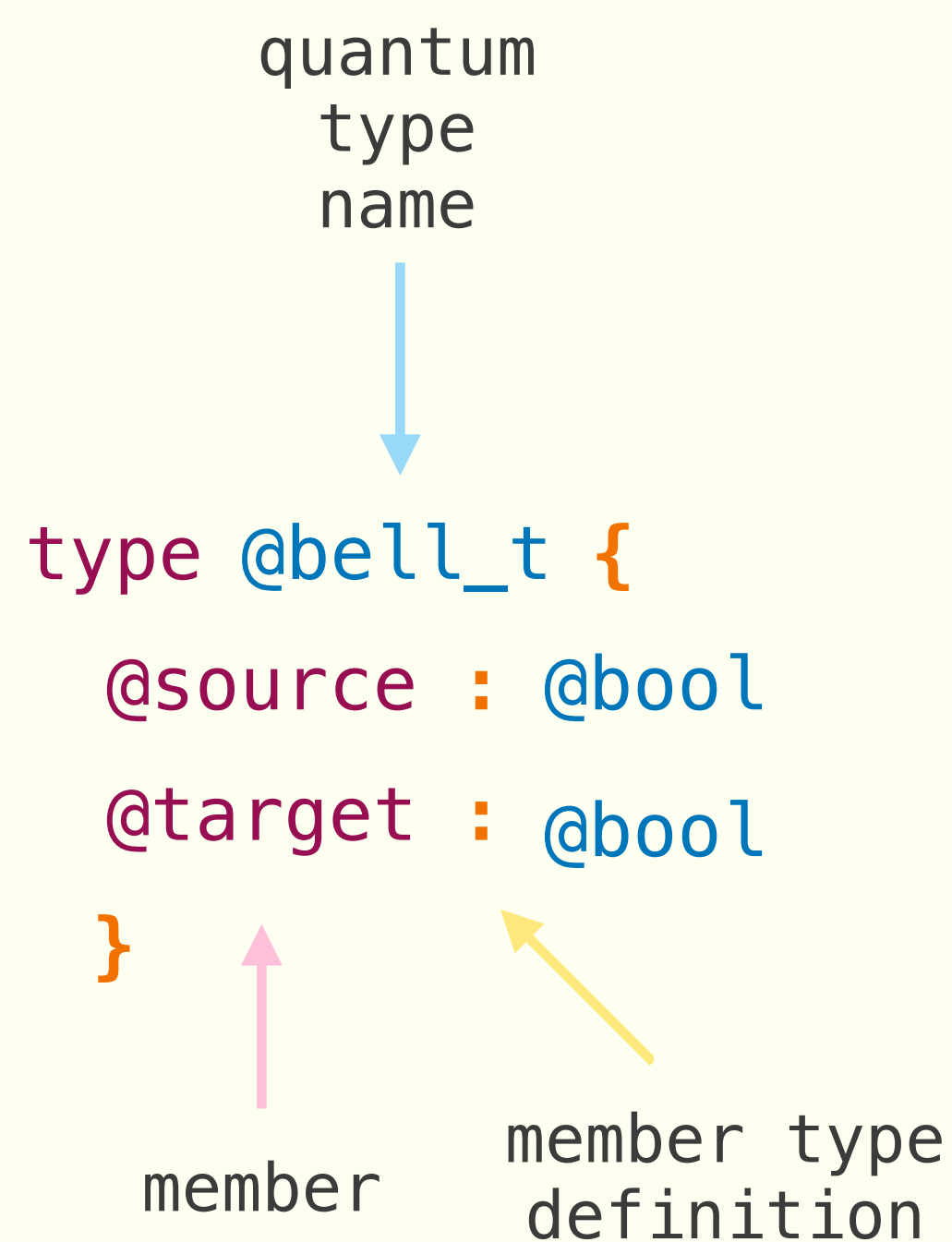


Quantum Data Types Struct and Logic on H-hat Quantum Programming Language

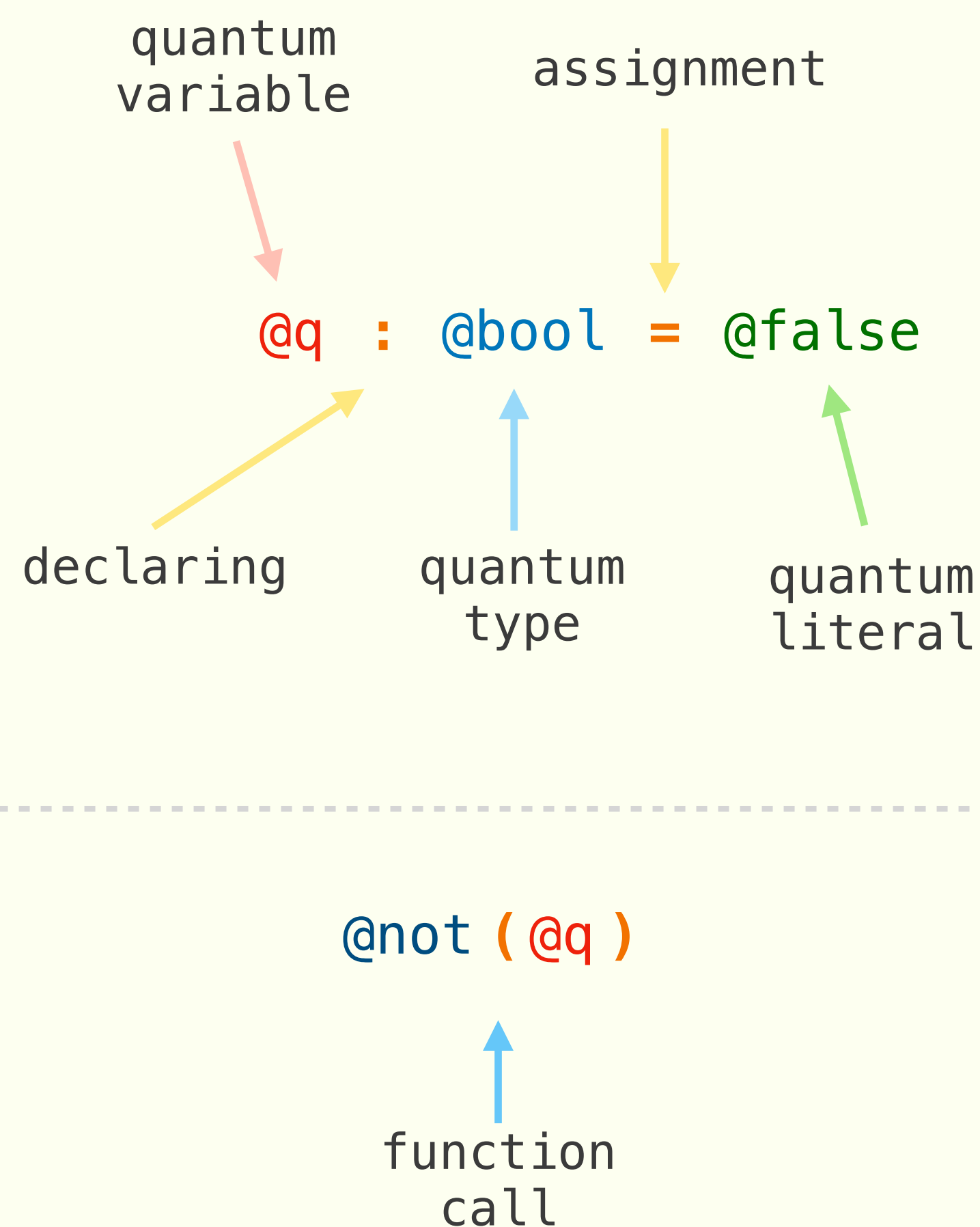
Eduardo Maschio, October 21st — MQSF 2025

Quantum Data Type Workflow

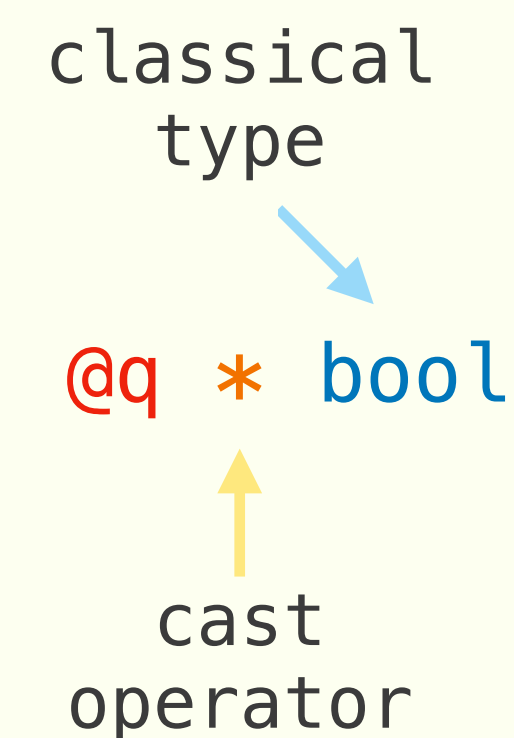
Type definition (struct)



Quantum variable



Casting quantum to classical type



data pipeline

0. Lazy quantum variable evaluation

1. H-hat to OpenQASM*

```
OPENQASM 2.0;  
include "qelib1.inc";  
qreg [1];  
creg[1];  
x q[0];  
measure q[0] -> c[0];
```

2. Run on simulator/device

3. Get measurement

4. Turn sample into bool

5. Return result

@q * bool ➡ true