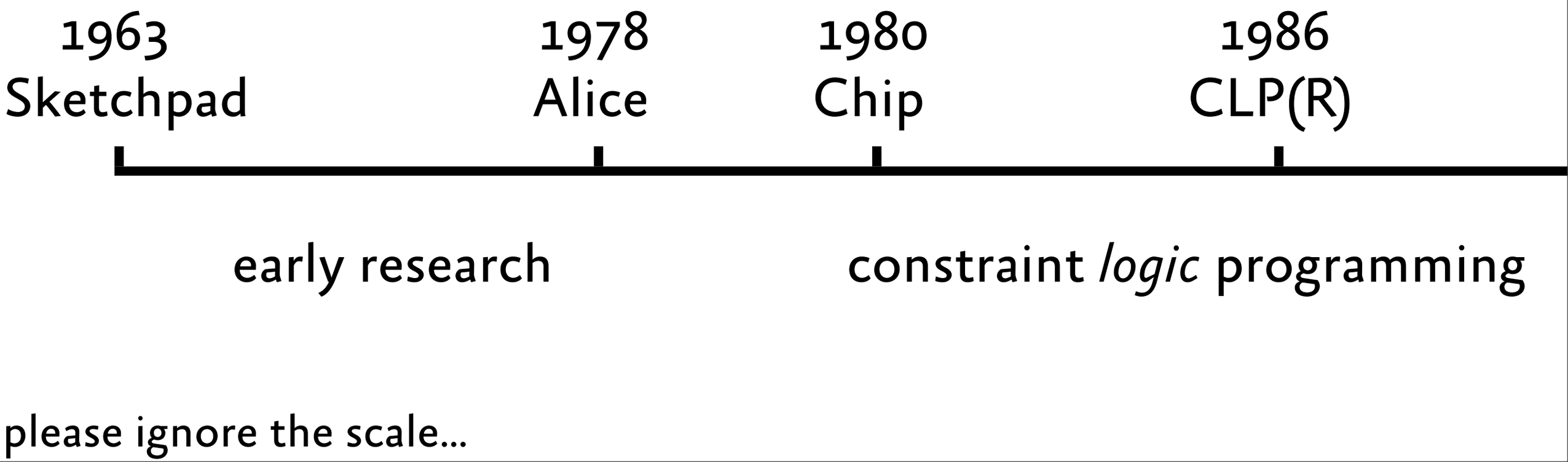
Constraint Programming

Marco Kuhlmann & Guido Tack

Lecture 2

Historical notes



please ignore the scale...

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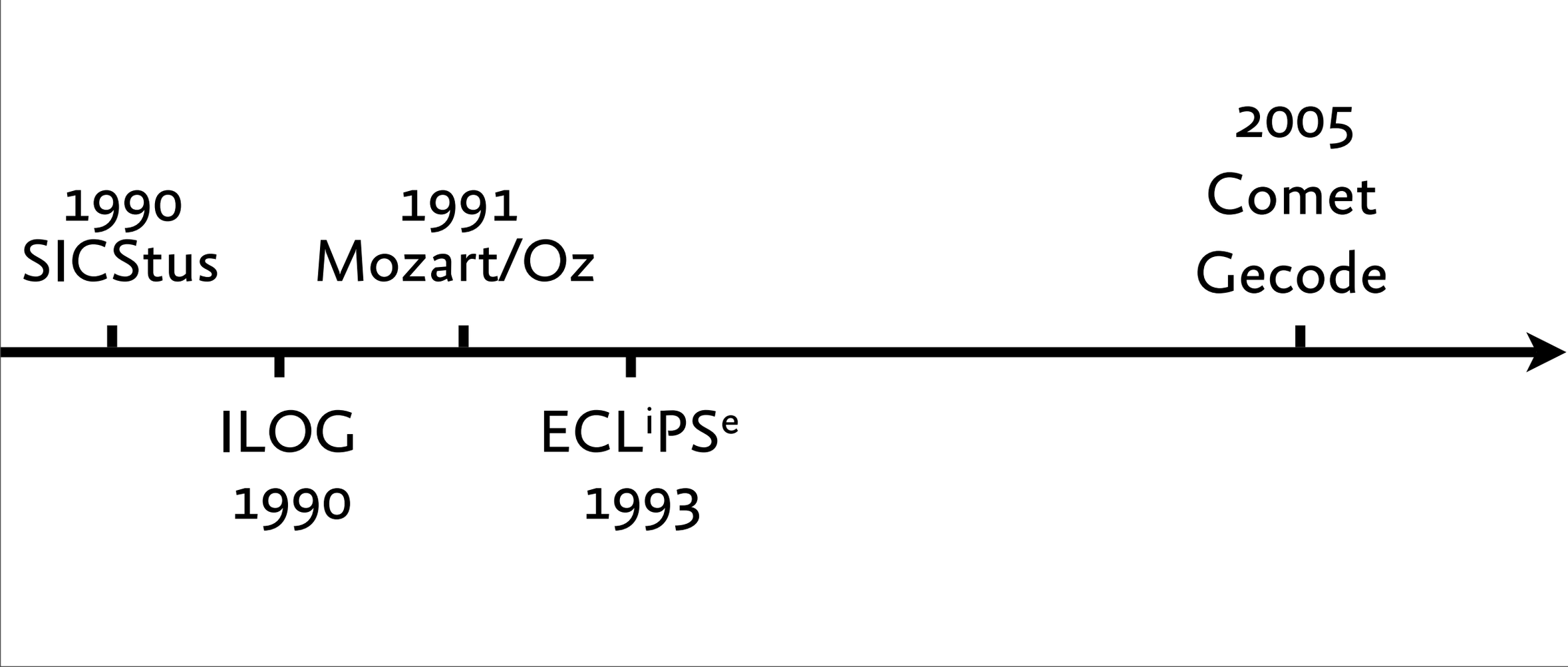

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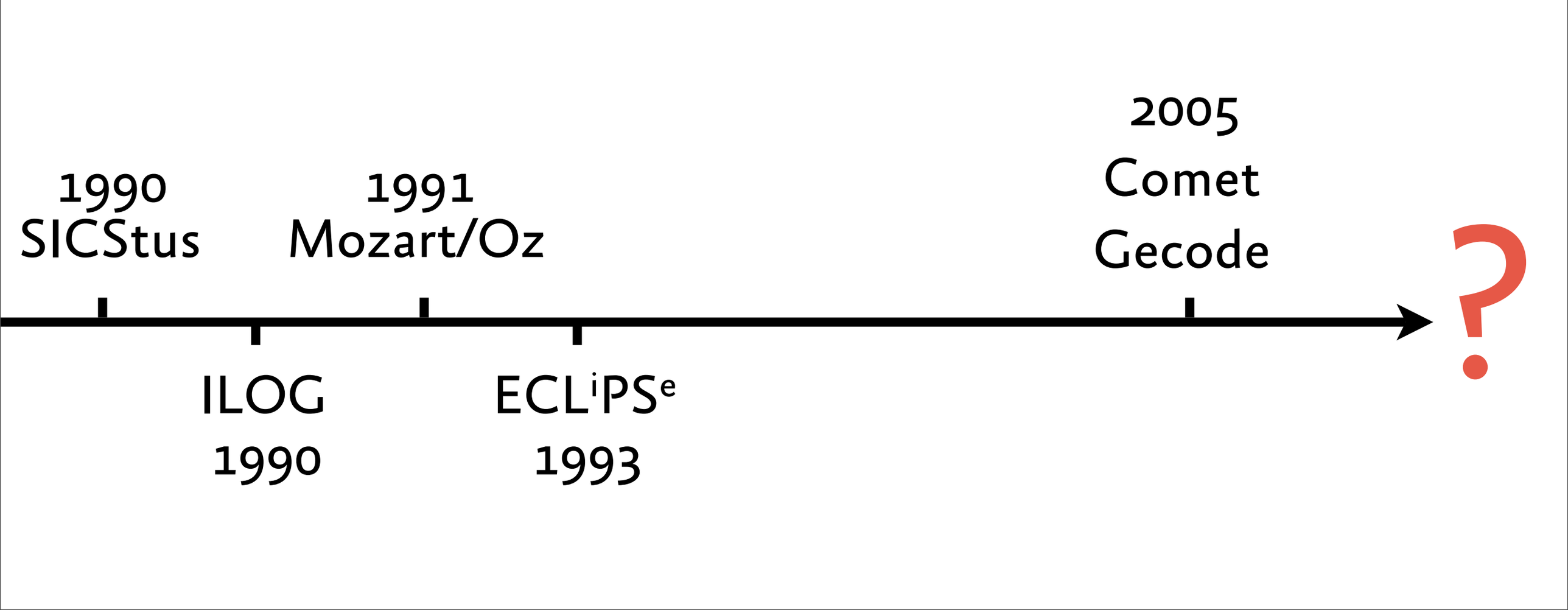

Logic Programming

```
foo(a).
foo(b).
g(X) :- X=[Y, Z], foo(Y), foo(Z).
```

Logic Programming

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| ?- g(X).
X = [a,a] ? ;
X = [a,b] ? ;
X = [b,a] ? ;
X = [b,b]
```

Constraint Logic Programming

```
foo(X) :- fd_domain(X, 1, 3).
g(Y,Z) :- foo(Y), foo(Z), Y #< Z,
          fd_labeling([Y,Z]).
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X = 1
Y = 2 ? ;
X = 1
Y = 3 ? ;
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Model:

constraint program

=

logic program

=

logical formula

Constraint Logic Programming

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Languages/Systems:

GNU Prolog, BProlog, SICStus Prolog, ECL^{i}PS^{e}

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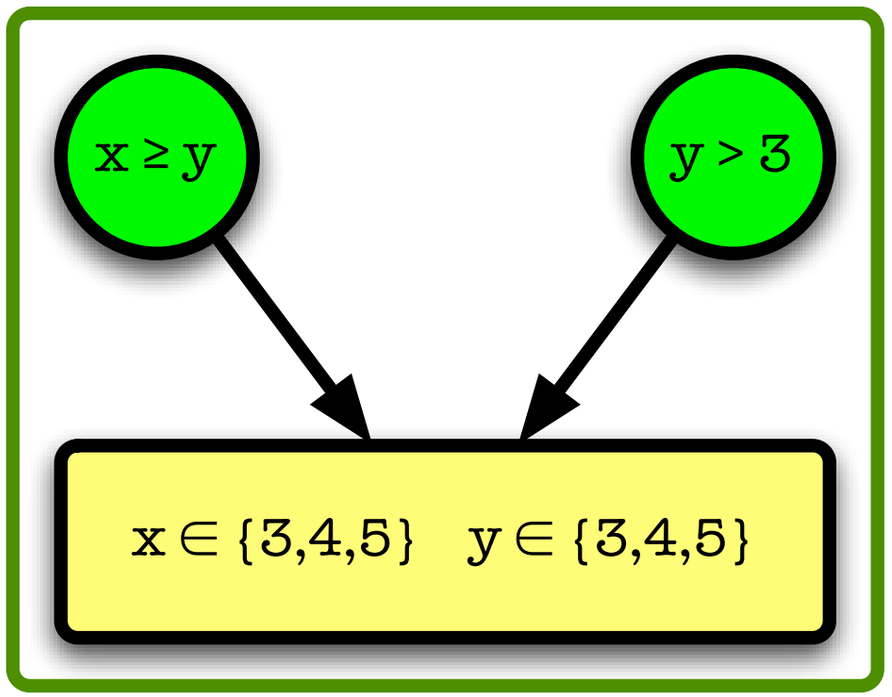
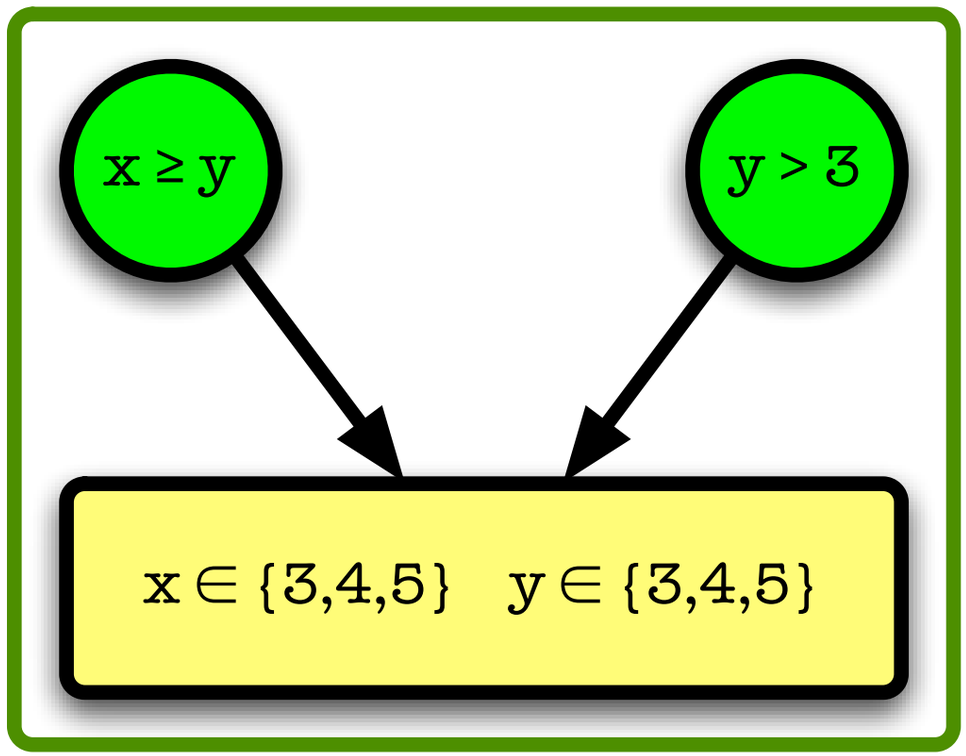


Constraint Programming with Gecode/J

- **Quick reminder of last lecture**
- **Walk-through for *Send More Money***
- **Some modeling techniques**
- **Presentation of first graded lab**

Computation Space



constraint store with connected propagators