Le fonctionnel par la pratique
Live Coding d'un jeu Web

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MUREX™
FINANCIAL SOFTWARE

Protagonistes

QUENTIN

- 6 ans à Murex
- C++ le jour
- Haskell & Clojure

OBJECTIF

Live Coder

Ne pas se planter

Protagonistes

GUILLAUME

- 5 ans à Murex
- Java le jour
- Cherche language

OBJECTIF

Live Coder

Ne pas se planter

Clojure (Script)

- (((LISP)))
- Functional
- JVM: Clojure
- JS: ClojureScript

35 min de Talk

5 min Q/R

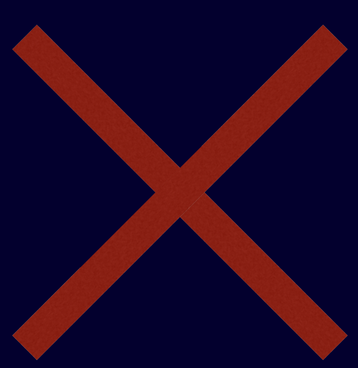
Clojure en 5 min 28

Demo REPL

TicTacToe en 25 min 17

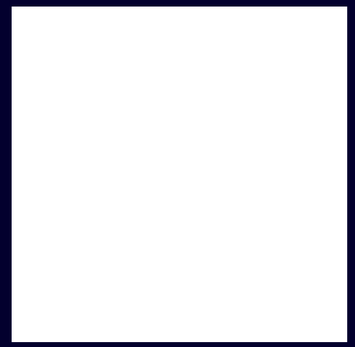
Owner

Owner



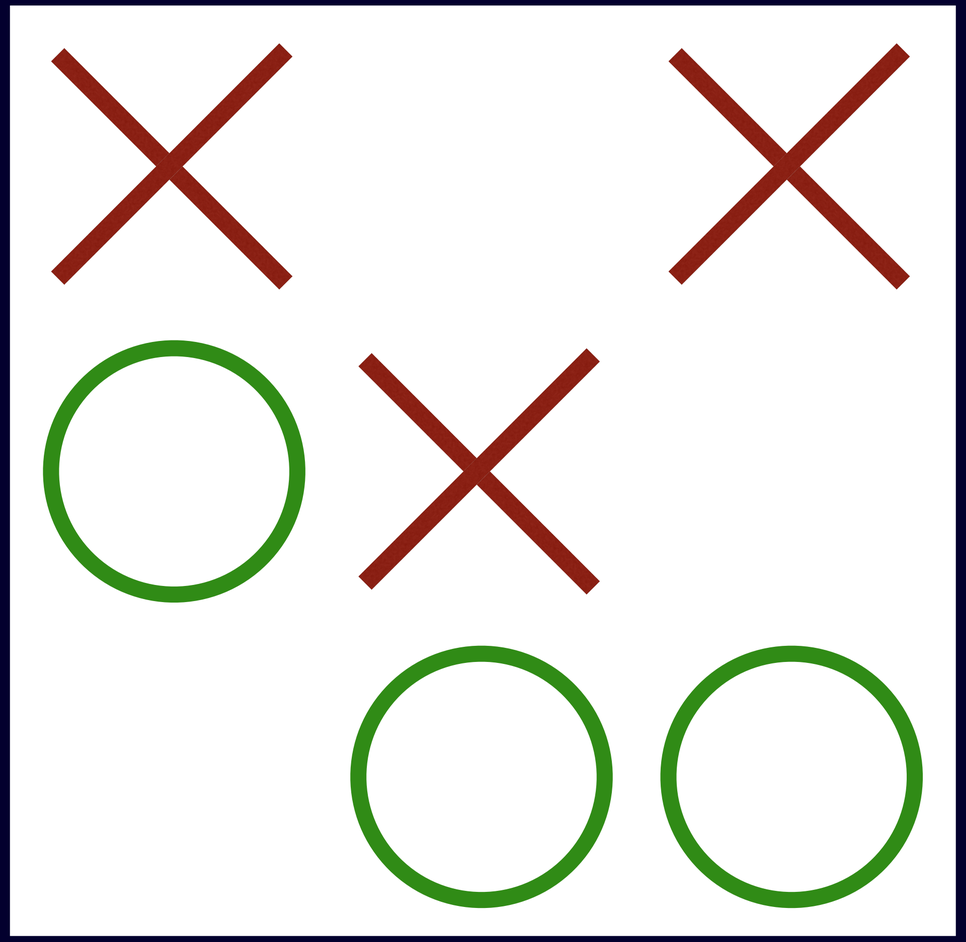
:owner/cross

:owner/circle

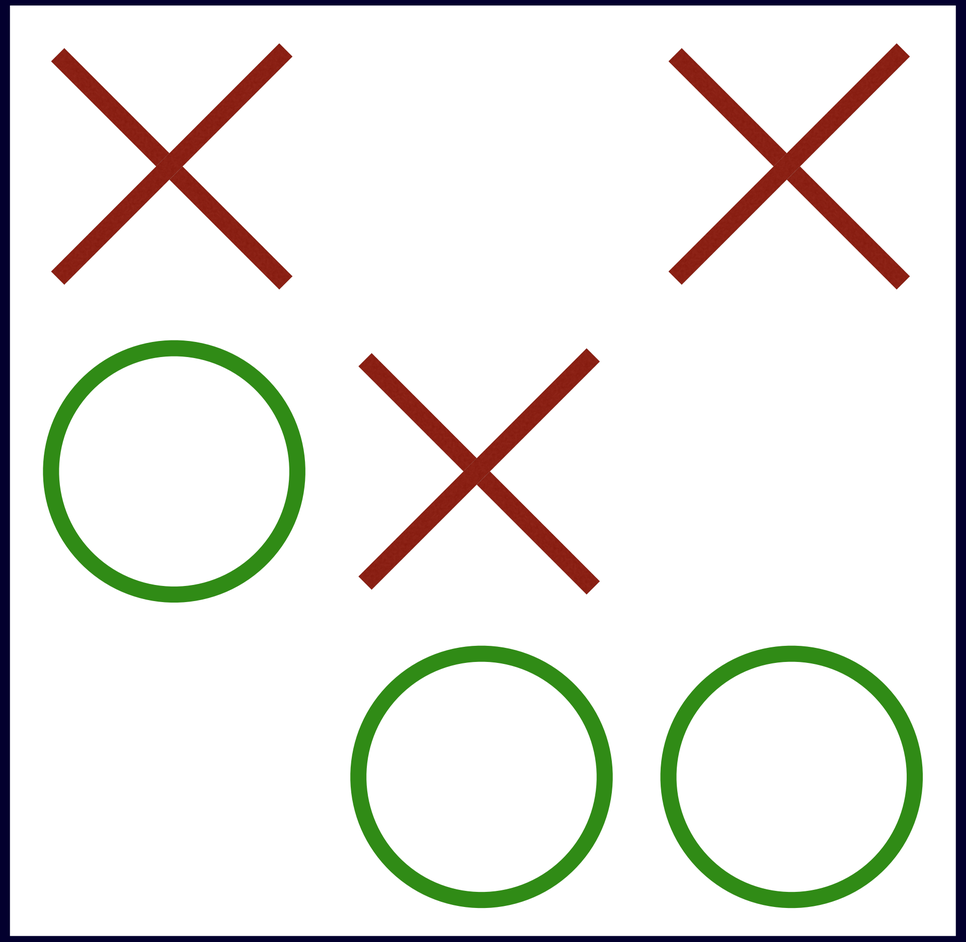


:owner/none

Board

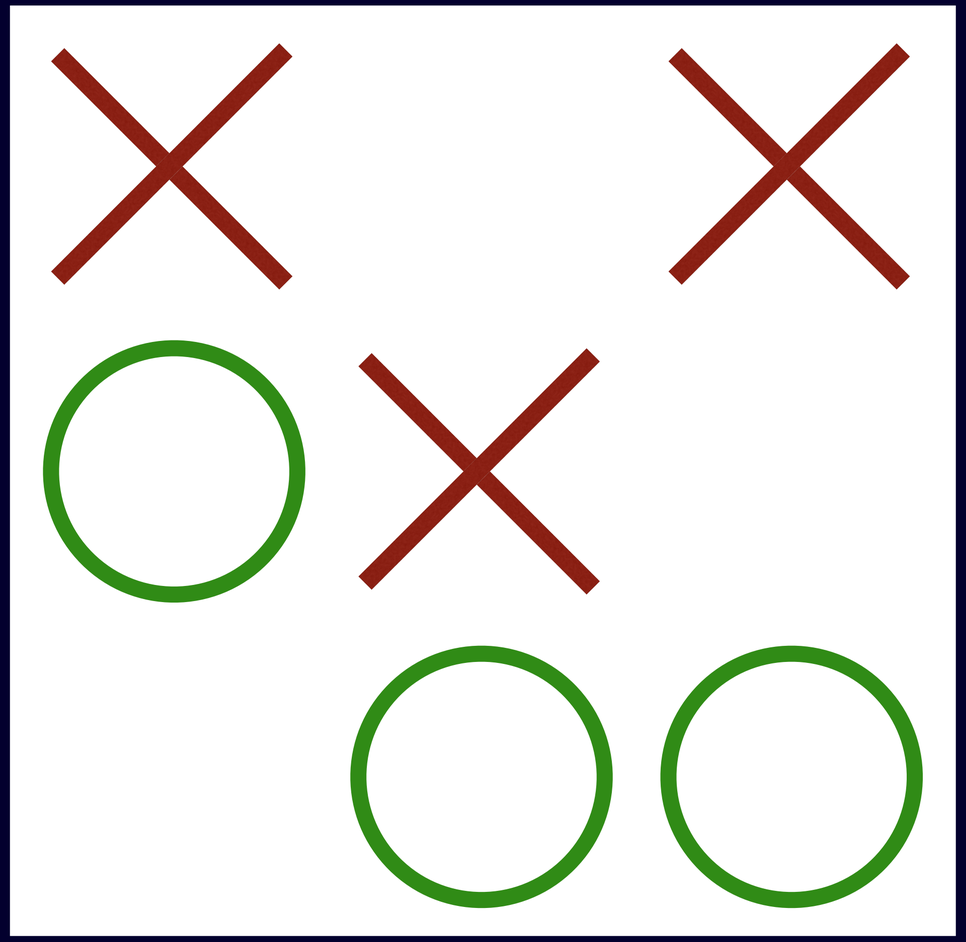


Board

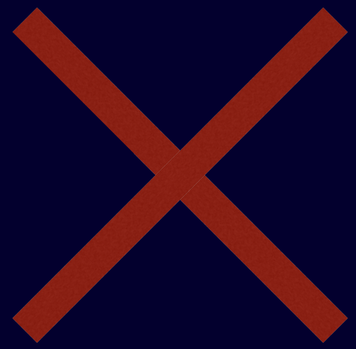


```
{ [0 0] :owner/cross
  [1 0] :owner/circle
  [2 0] :owner/none
  ... }
```

Turn

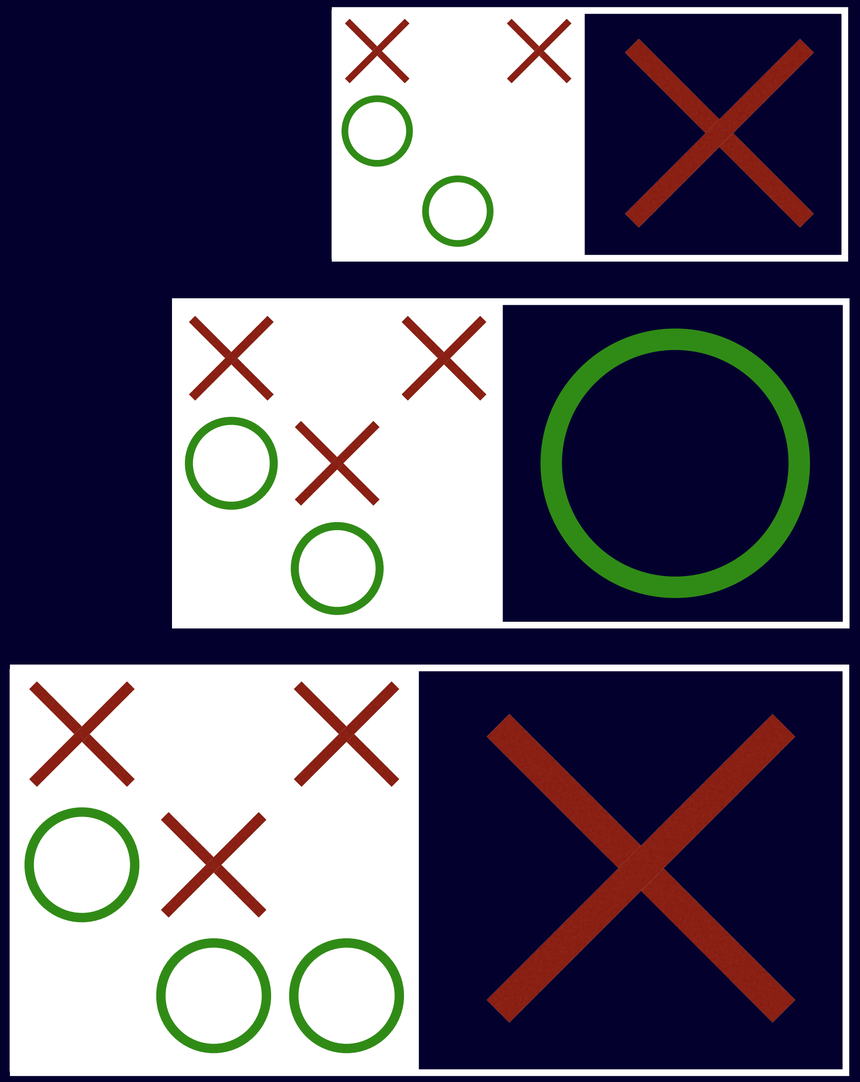


+

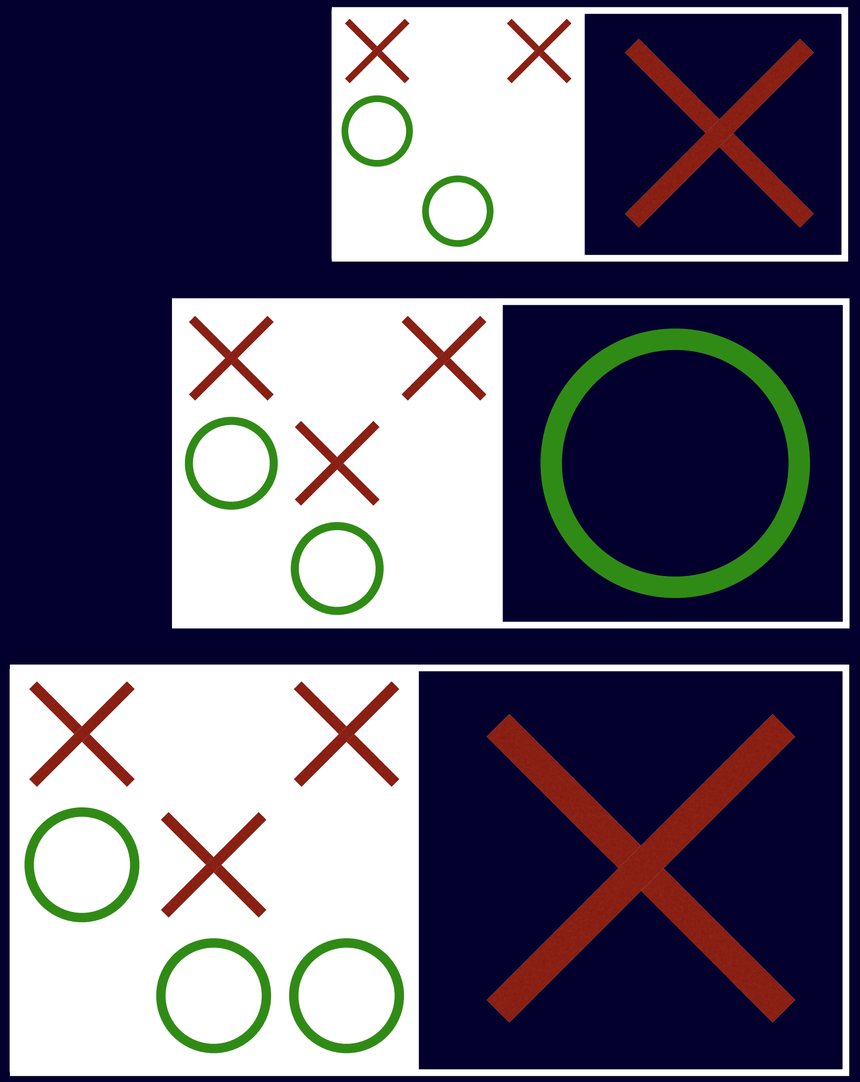


```
{ :board ...
  :player ... }
```

Game

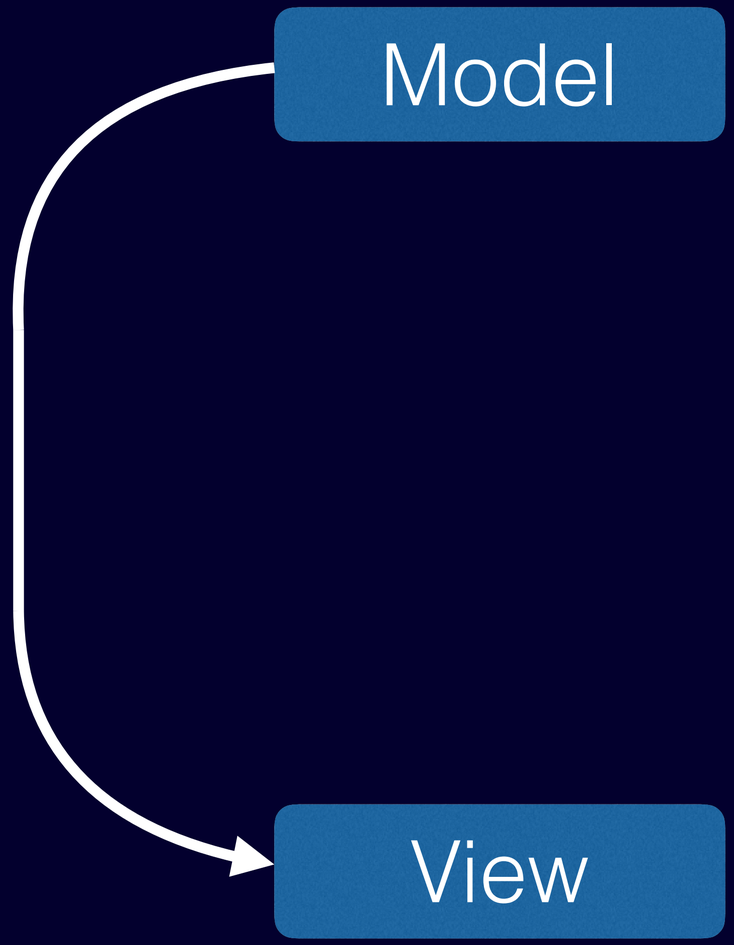


Game

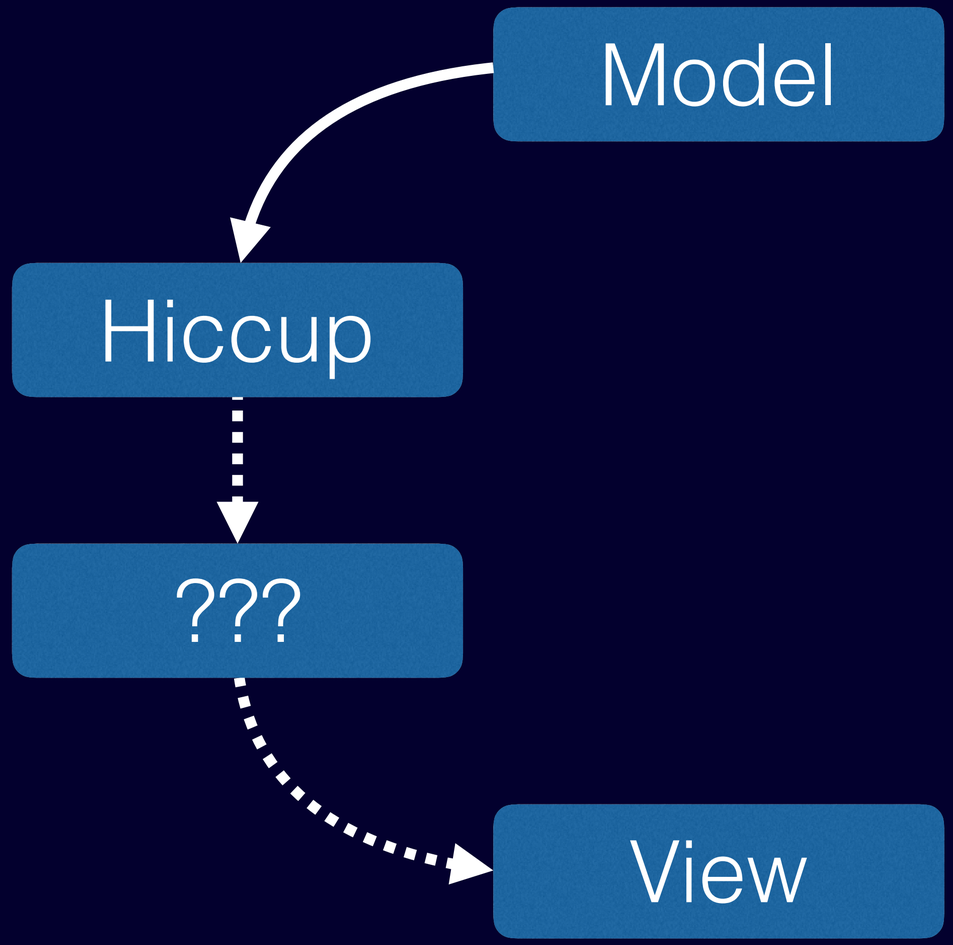


```
[ turn-0
  turn-1
  ...
  previous-turn
  current-turn ]
```

Design

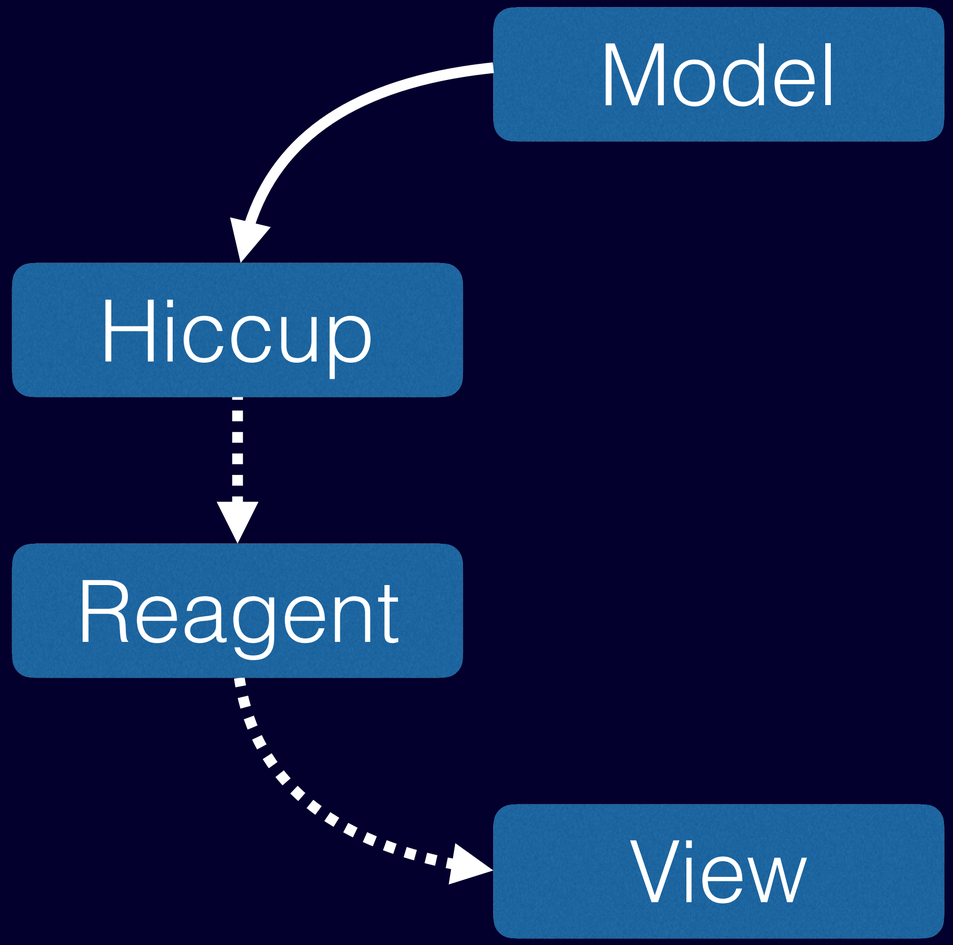


Design



Live Code

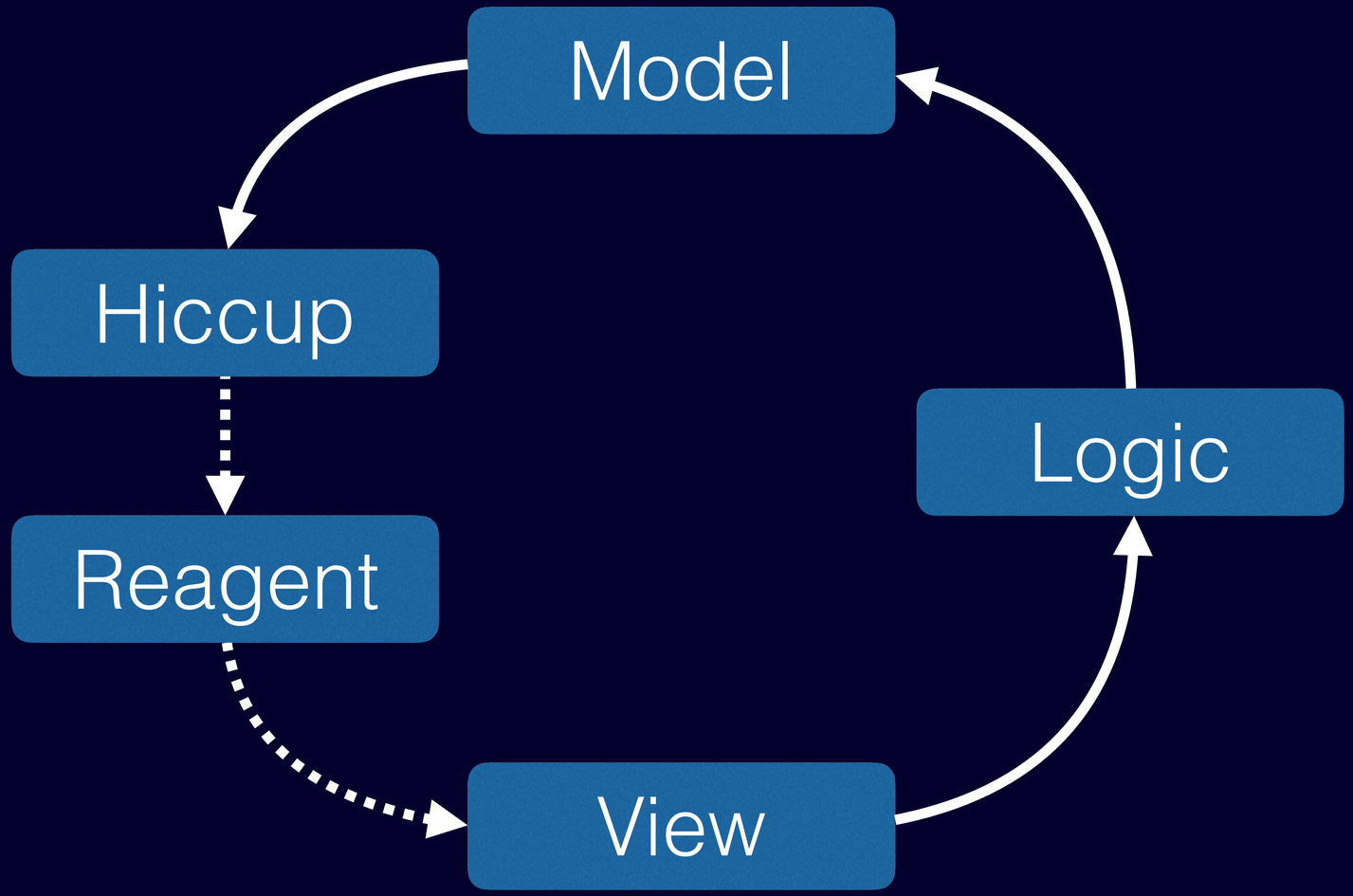
Reagent



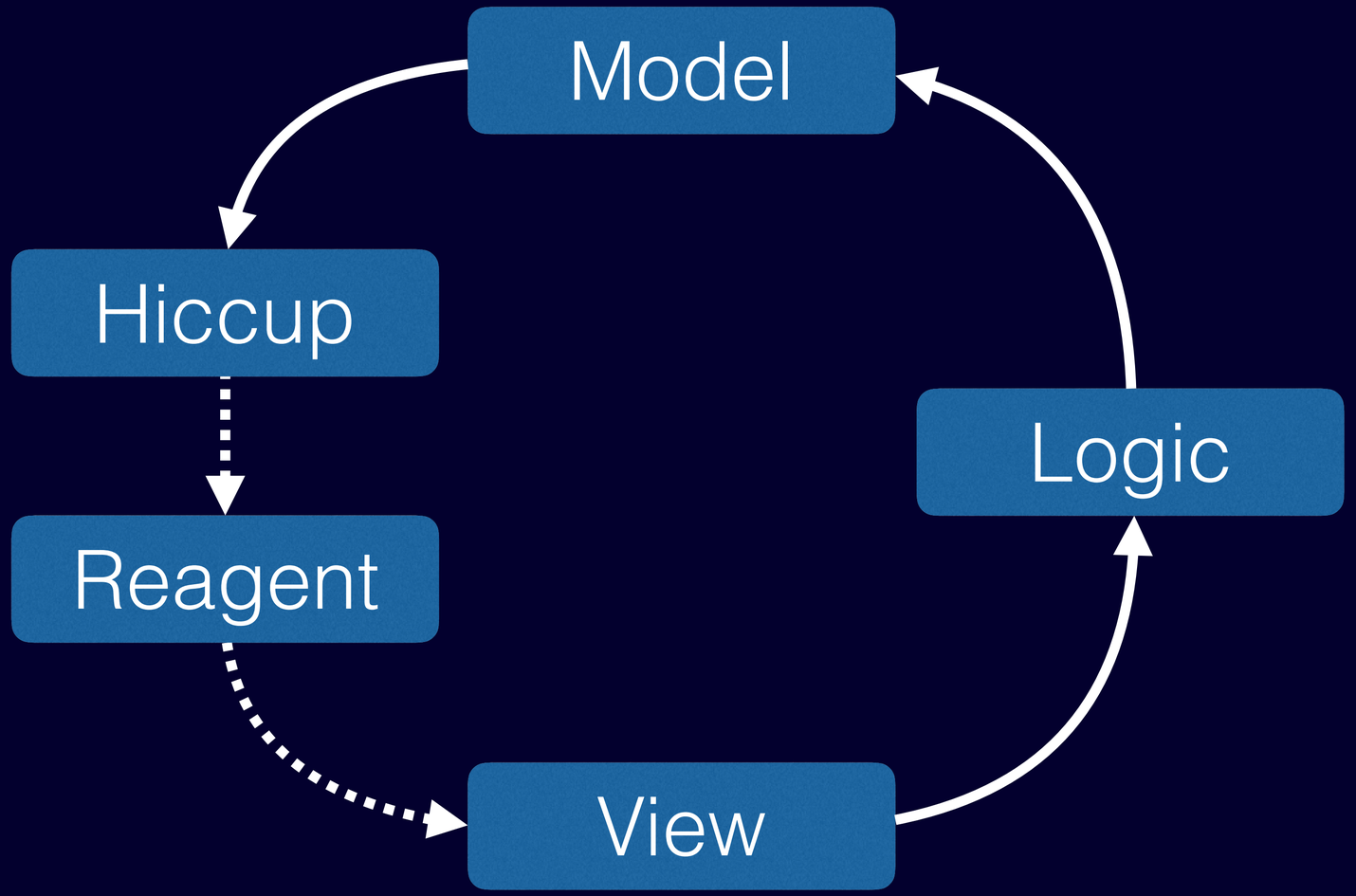
- Surcouche sur React
- Intégré dans le language
- Pas de templating

Live Code

Design



Design



Modèle

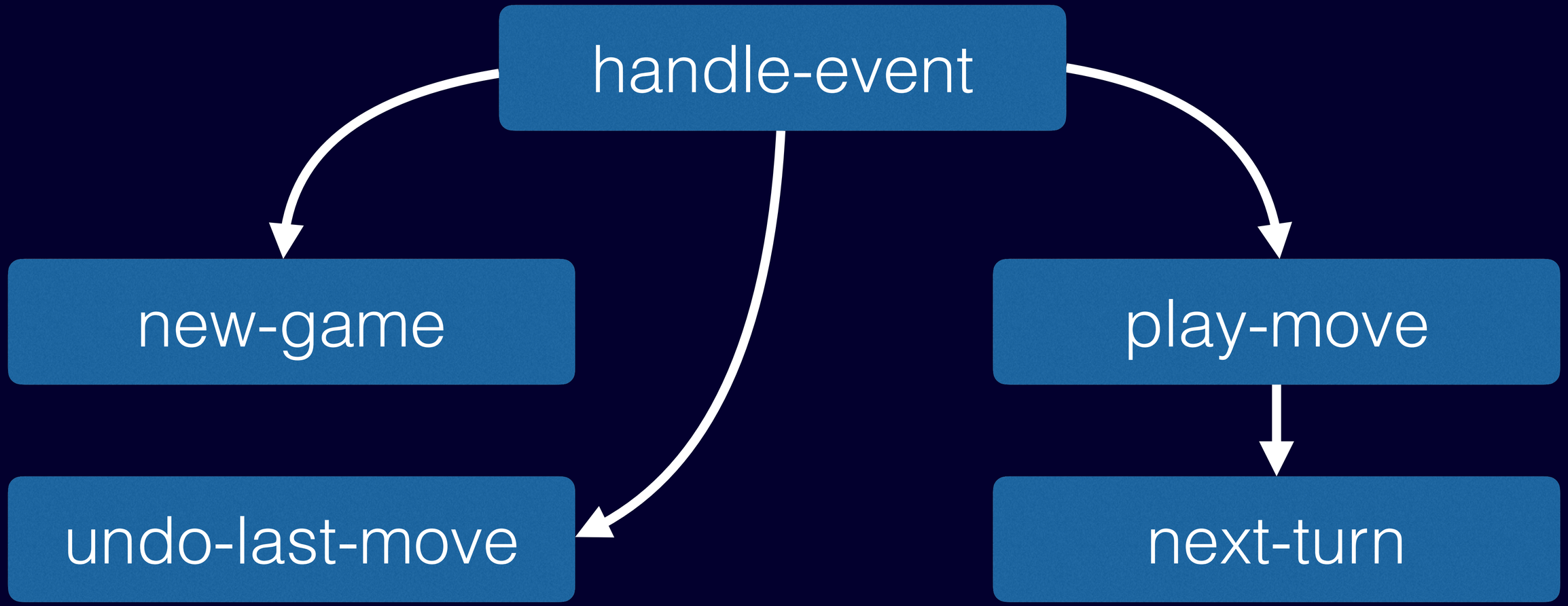
+

Evènement

=

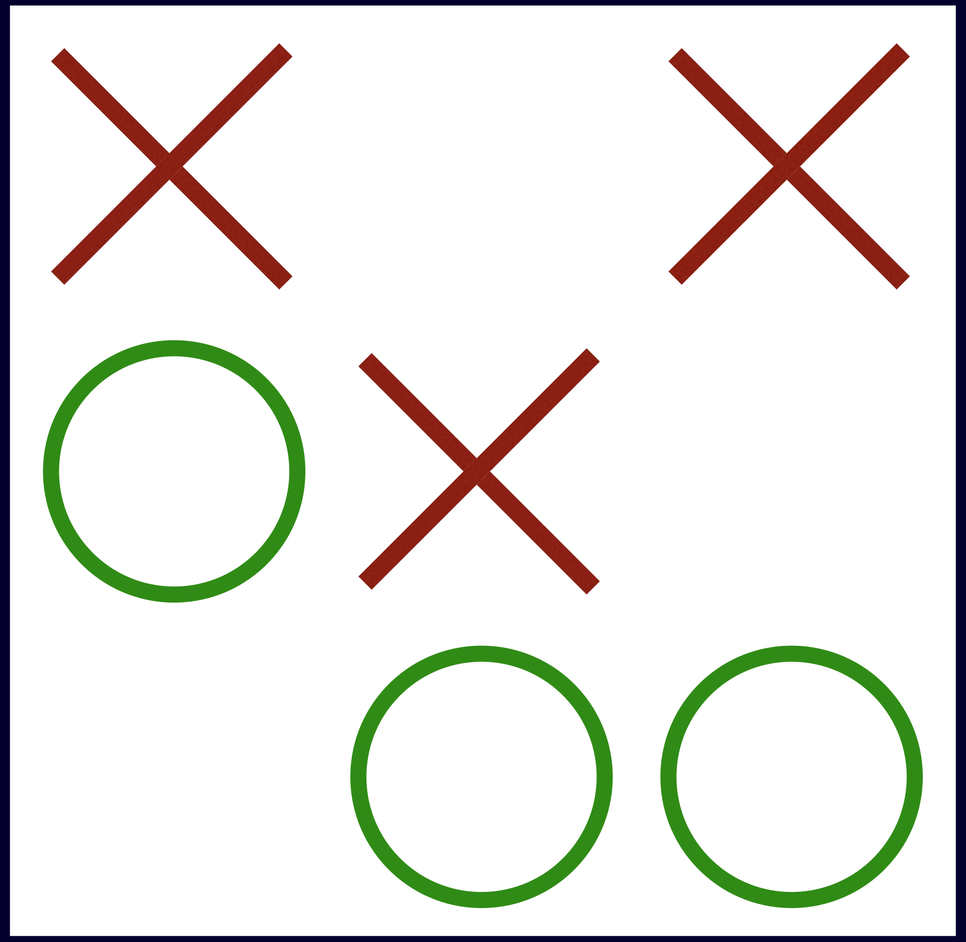
Nouveau modèle

Handling events

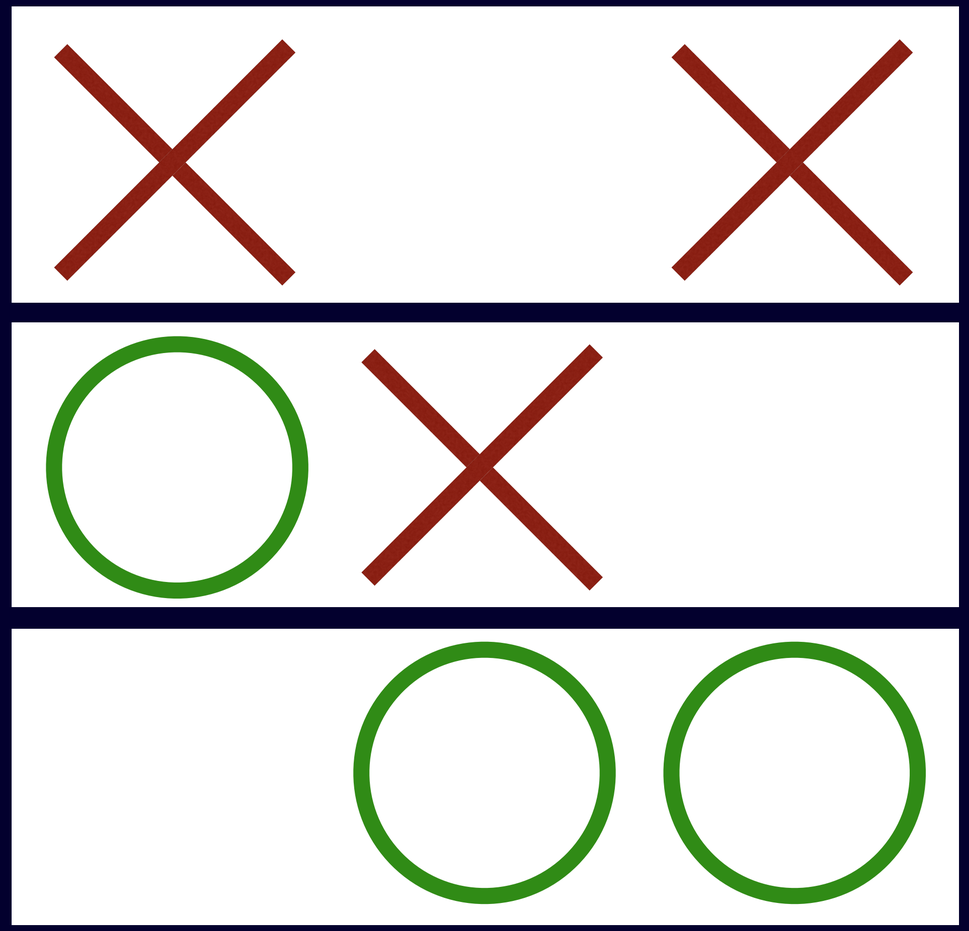


Live Code

Conditions de victoire



Conditions de victoire

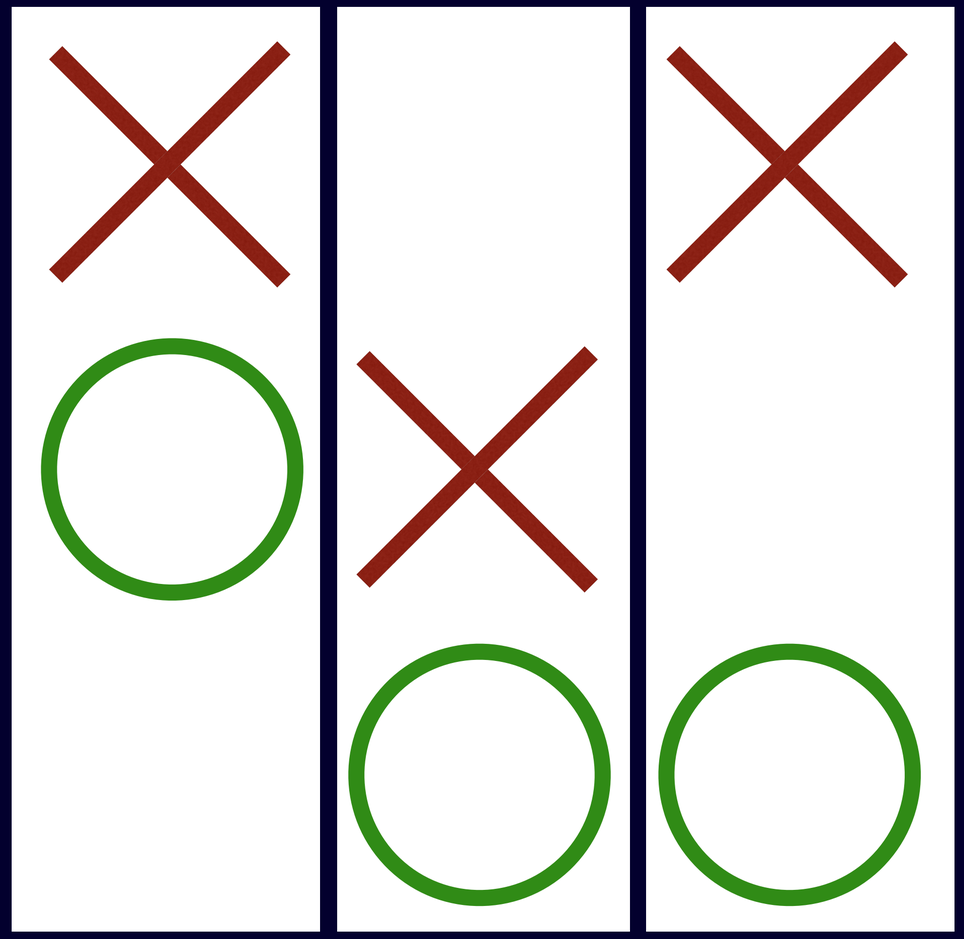


```
[[0 0] [0 1] [0 2]]

[[1 0] [1 1] [1 2]]

[[2 0] [2 1] [2 2]]
```

Conditions de victoire

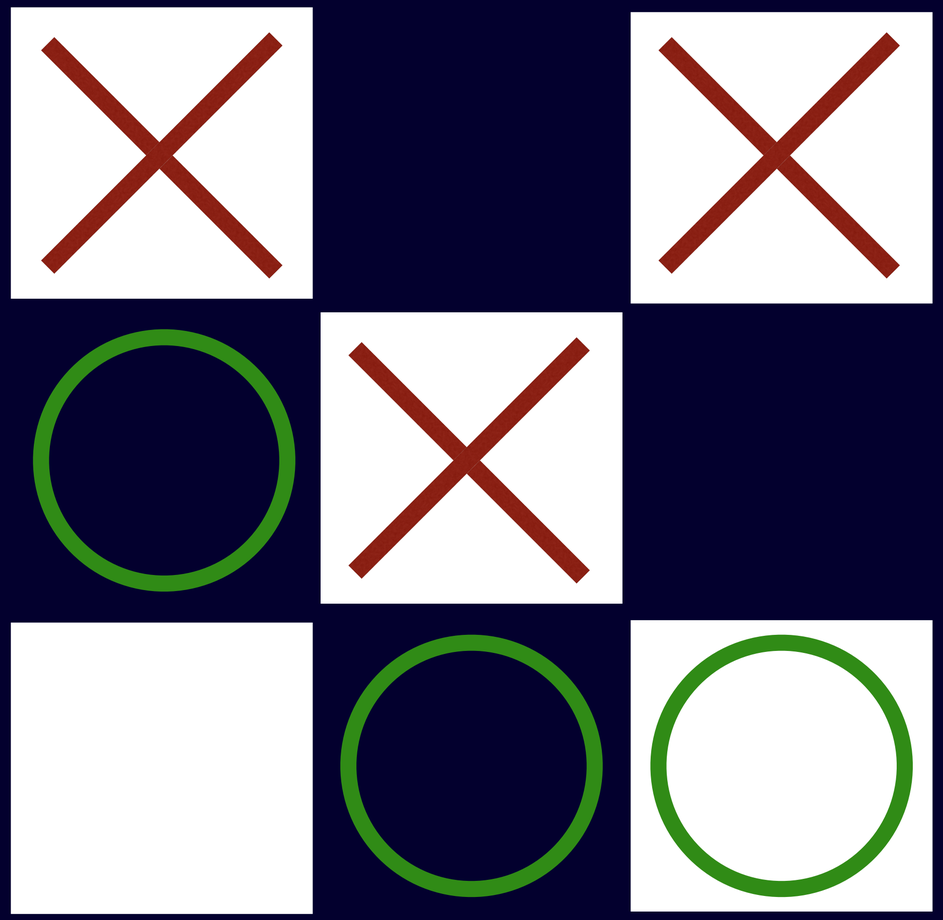


```
[[0 0] [1 0] [2 0]]

[[0 1] [1 1] [2 1]]

[[0 2] [1 2] [2 2]]
```

Conditions de victoire

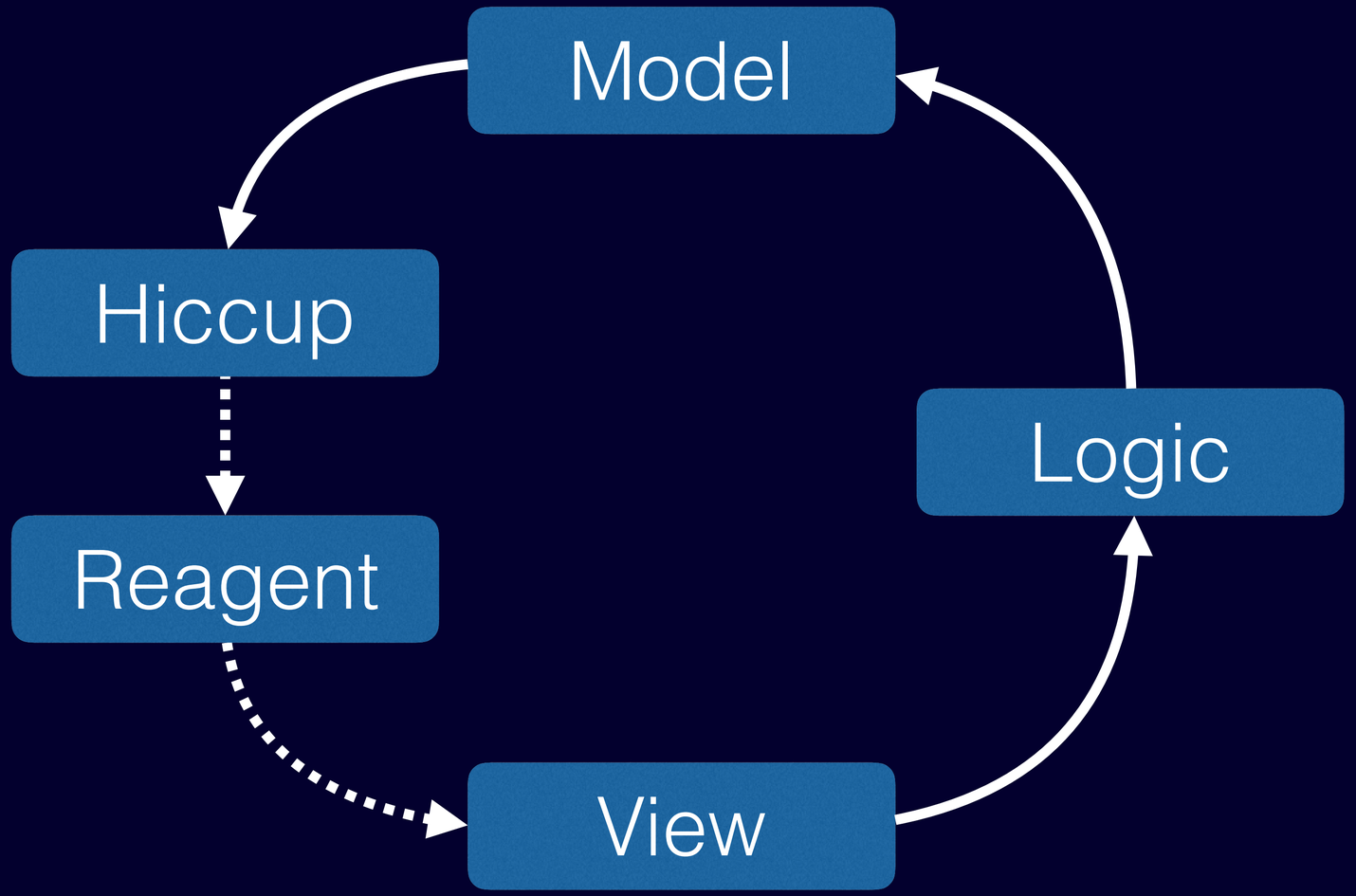


```
[[0 0] [1 1] [2 2]]
```

```
[[0 2] [1 1] [2 0]]
```

Live Code

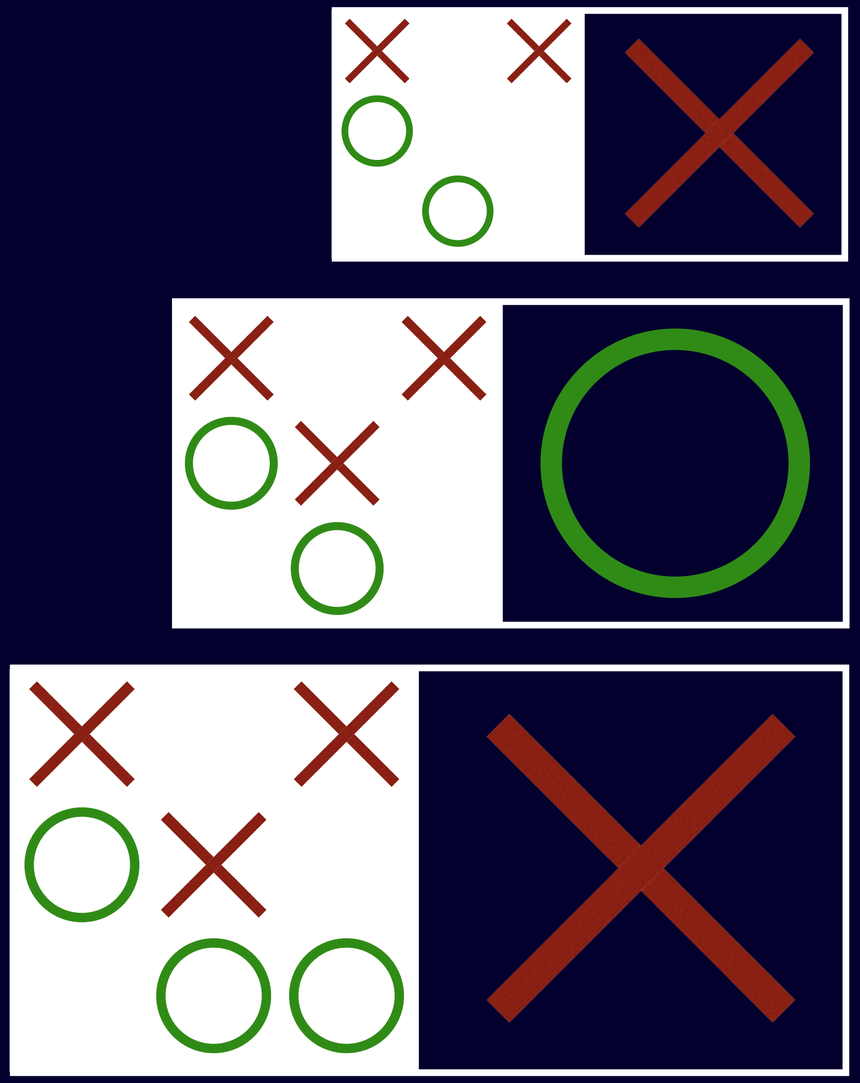
Design



- Simple
- Un seul d'état
- Testable
- Évènements métier

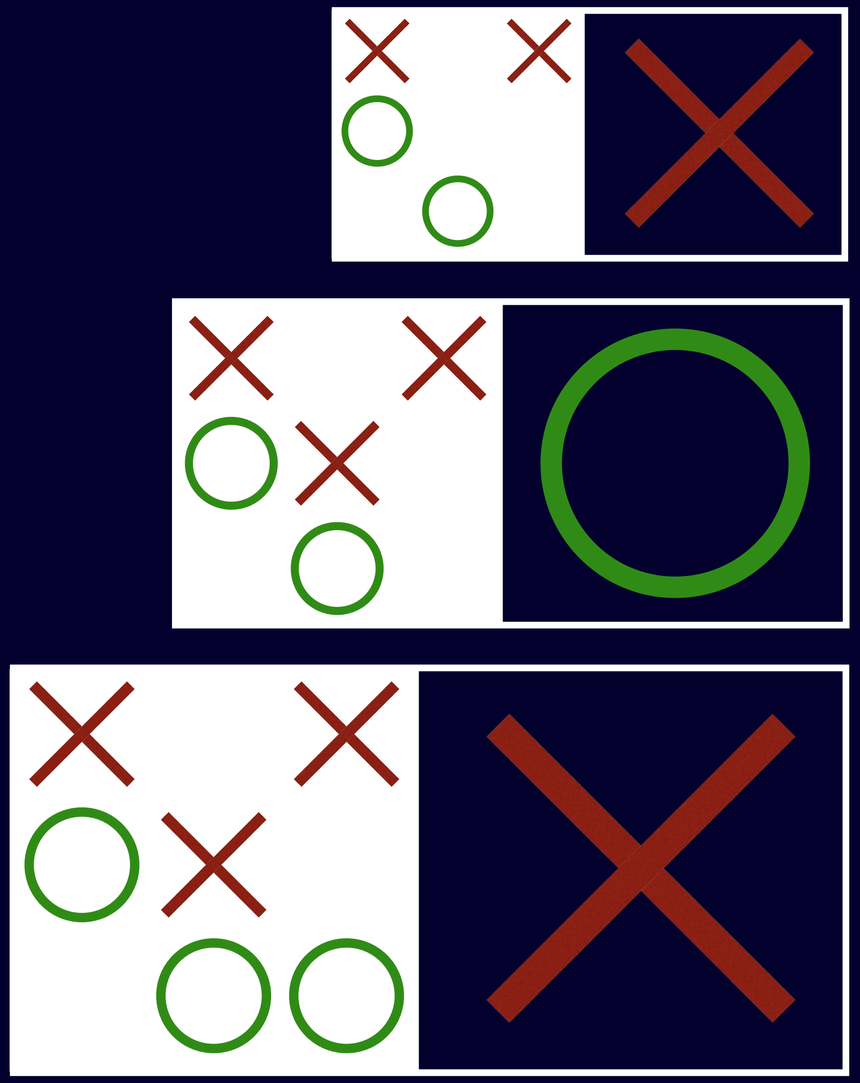
Le CTRL-Z

Etat = Succession de Valeurs



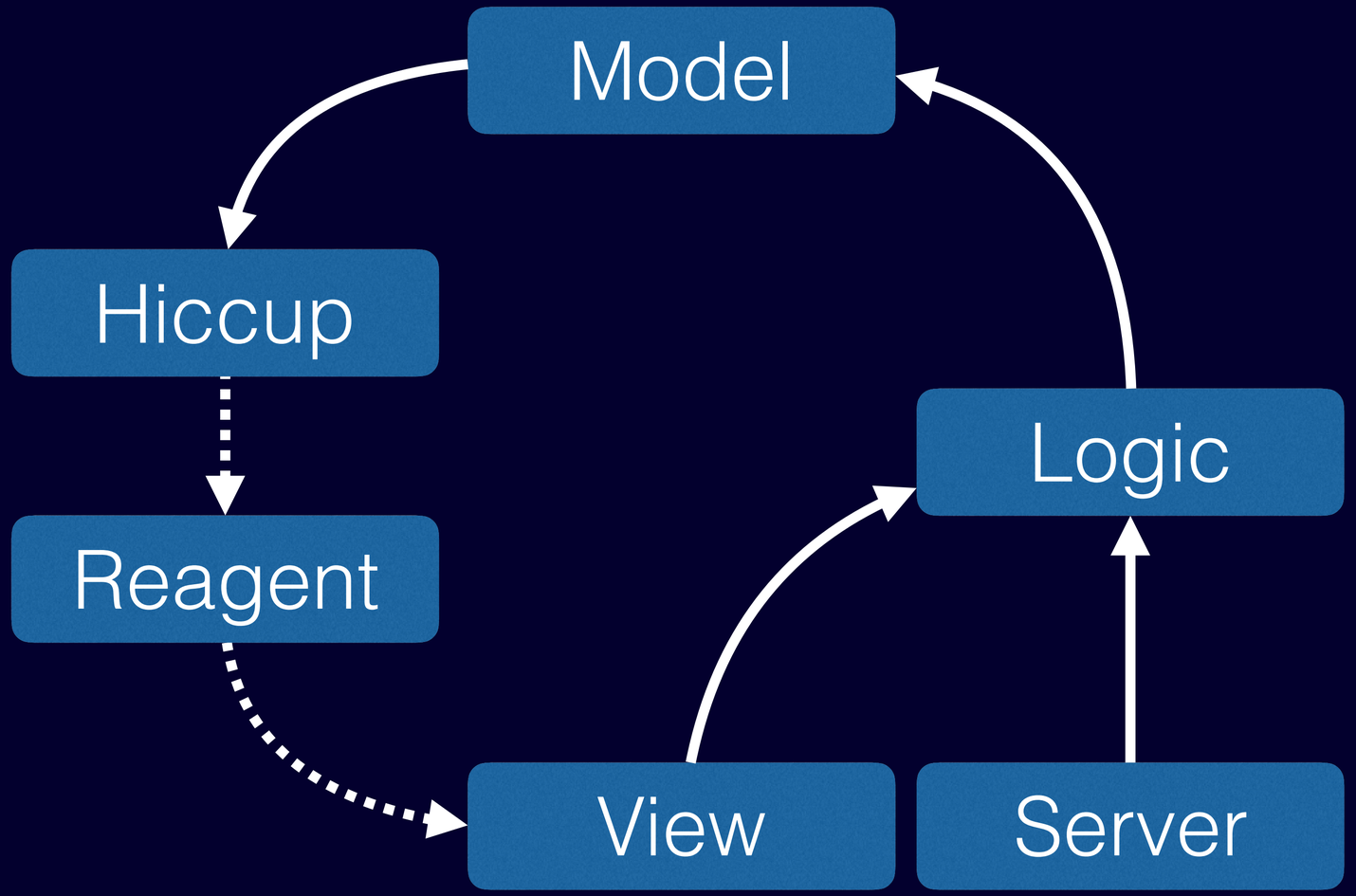
Live Code

Etat = Succession de Valeurs



- Une catégorie entière de problèmes en moins
- Rejouable
- Observable
- Efficient

Un pattern efficace



- Évènement serveur
- Découplé de la source
- Scalable
- Thread-safe

Le fonctionnel c’est…

- Accessible
- Concret
- Simple et efficace
- Source d’inspiration

Merci à vous

Jouez au jeu:
https://quentinduval.github.io/tictactoe

Présentation et ressources:
https://github.com/QuentinDuval/TicTacToeDevoxx

Blog post dédié:
https://deque.blog/2017/03/03/building-a-clojurescript-game-architecture-poc