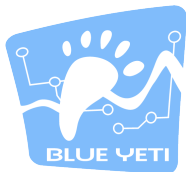


Graphical Temporal Structured Programming

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1. Blue Yeti — 2. SCRIME / LaBRI — 3. PoSET



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Code

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Conclusion

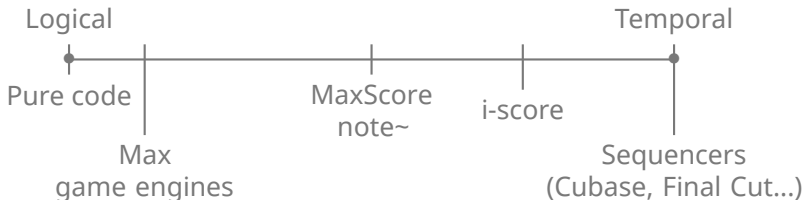
Position

Authoring **interactivity** ?

*When A then B : **programming***

Code-first environments.

*Previous i-score version: **interaction points**.*



Inspiration

Polyvalent structure:

- ▶ **Feldman**
Intermission
- ▶ **Cage**
Two
- ▶ **Stockhausen**
Klavierstück XI

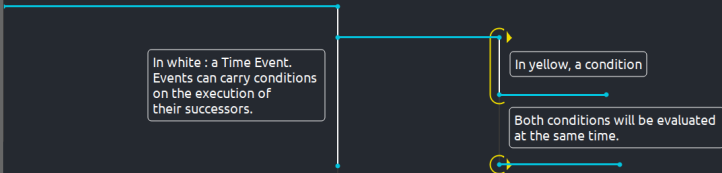
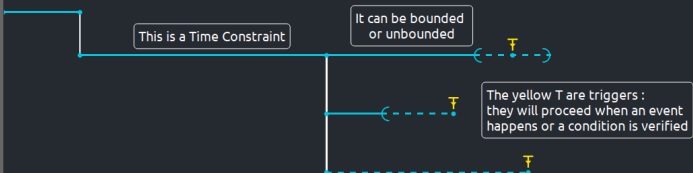


High-level algorithms for the performer

Vocabulary

0:00.0 | 0:01.500 | 0:03.0 | 0:04.500 | 0:06.0 | 0:07.500 | 0:09.0 | 0:10.500 | 0:12.0 | 0:13.500 | 0:15.0

example /

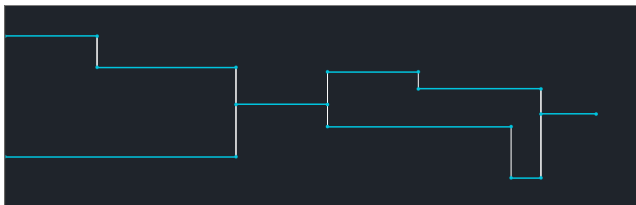


In dark gray : a Time Node.
It goes all the way up behind the Time Event.
Everything on a same Time Node is synchronized.

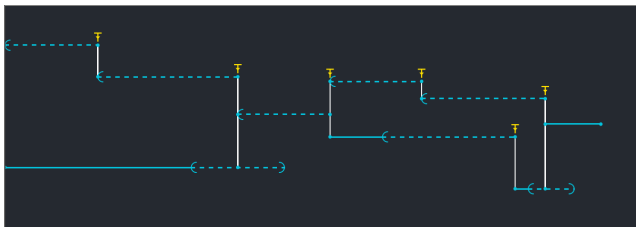
MyConstraint

Inside a Constraint,
can live multiple processes

Imperative vs event-driven



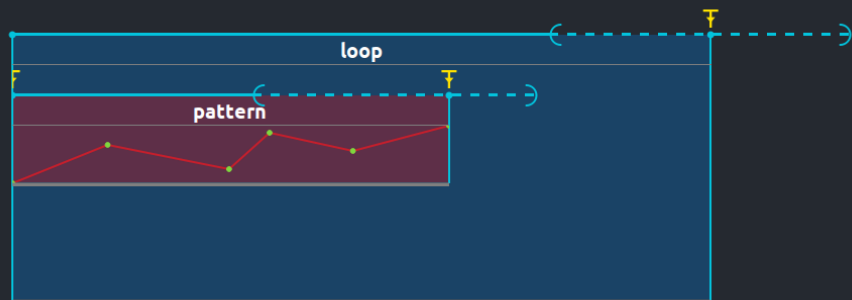
A then B



B when A

Loops

- ▶ Two interaction points.
- ▶ One time-constraint.
- ▶ Allows for while and do-while.



Data tree

Address	Value	Get	Set	Min	Max
OSCdevice					
ui					
focus	1	✓	✓	1	10
master					
layer					
mediaSet	0	✓	✓	0	8
media	999	✓	✓	0	999
auto					
transformer					
transition					
duration...	false	✓	✓		
type	false	✓	✓		
duration	0,5	✓	✓	0	1
soundOutLi...	1	✓	✓	0	1
soundOutBa...	0,5	✓	✓	0	1
soundOutLe...	1	✓	✓	0	1
movie					
color					
scale					
fieldOfView	true	✓	✓		
rotation					
pixelFX					
blendMode	0	✓	✓	0	5
record_stop...	false	✓	✓		
position					
hidden	false	✓	✓		
alpha	1	✓	✓	0	1
record					
eraseOn	false	✓	✓		

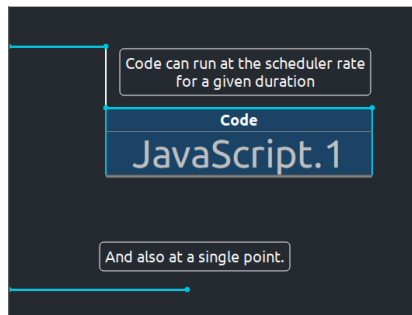
- ▶ **Abstraction** over multiple protocols.
OSC, MIDI, Minuit, HTTP, WebSockets, Serial port, Local intropsection...
- ▶ **Data model** of (remote) applications.
- ▶ Can also be used as **local memory** for the score.

Code

i-score: **temporal language**.

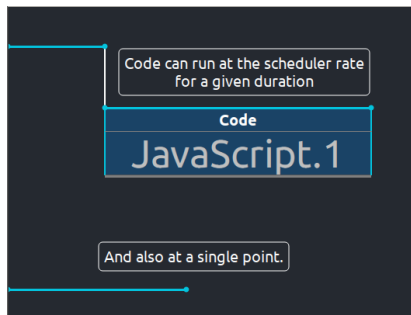
- ▶ Unable to perform arithmetic computations alone.
- ▶ Only concerned by **temporal structure**.
- ▶ Introduction of an embedded language to perform this work.
- ▶ Javascript fits the bill.

Code



```
function(t) {           // t in [0; +oo[
  var m = new Object;
  m.address =
    'device:/address';
  m.value =
    t + iscore.value('device:/other/address');
  return [ obj ];
}
```

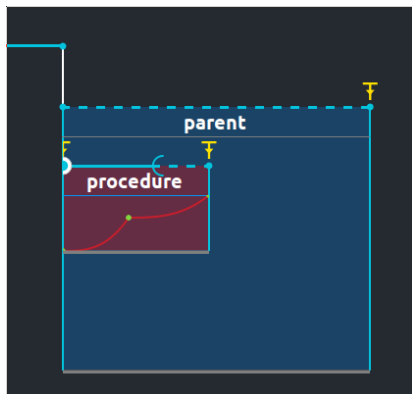
Code



```
function() {  
  return [ {  
    address: 'foo:/bar',  
    value: Math.Random() * 42 % 35  
  } ];  
}
```

Procedures

Procedures are built from the elements presented up to now.



Parent trigger:
false

First and second sub-triggers:
local:/p/call = true

Demo

icmc.blueyeti.fr

Future

- ▶ For the sake of completeness : dynamic allocation primitives.
- ▶ Hierarchic temporal signatures and work on proper musical features.
- ▶ Debugging : the main pain point.
 - ▶ Possibilities that makes sense in the context of artistic creation.
 - ▶ Don't try to force traditional gdb-like debugging.

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P. Baltazar, T. de la Hogue, and M. Desainte-Catherine, "i-score, an interactive sequencer for the intermedia arts," in *Proceedings of the ICMC - SMC 2014 Joint Conference*, 2014.

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Links

- ▶ **i-score** : www.i-score.org

Thanks ! Questions ?

Uses the Beamer 'simple' theme (Facundo Muñoz); and Mozilla's Fira font family