

Other notable systems



Andrea Sterbini – sterbini@di.uniroma1.it

Fancade: a 3D data-flow game building language

Data-flow computation

Typed links (Number, Boolean, Position, Rotation, Object, ...)

NO text!

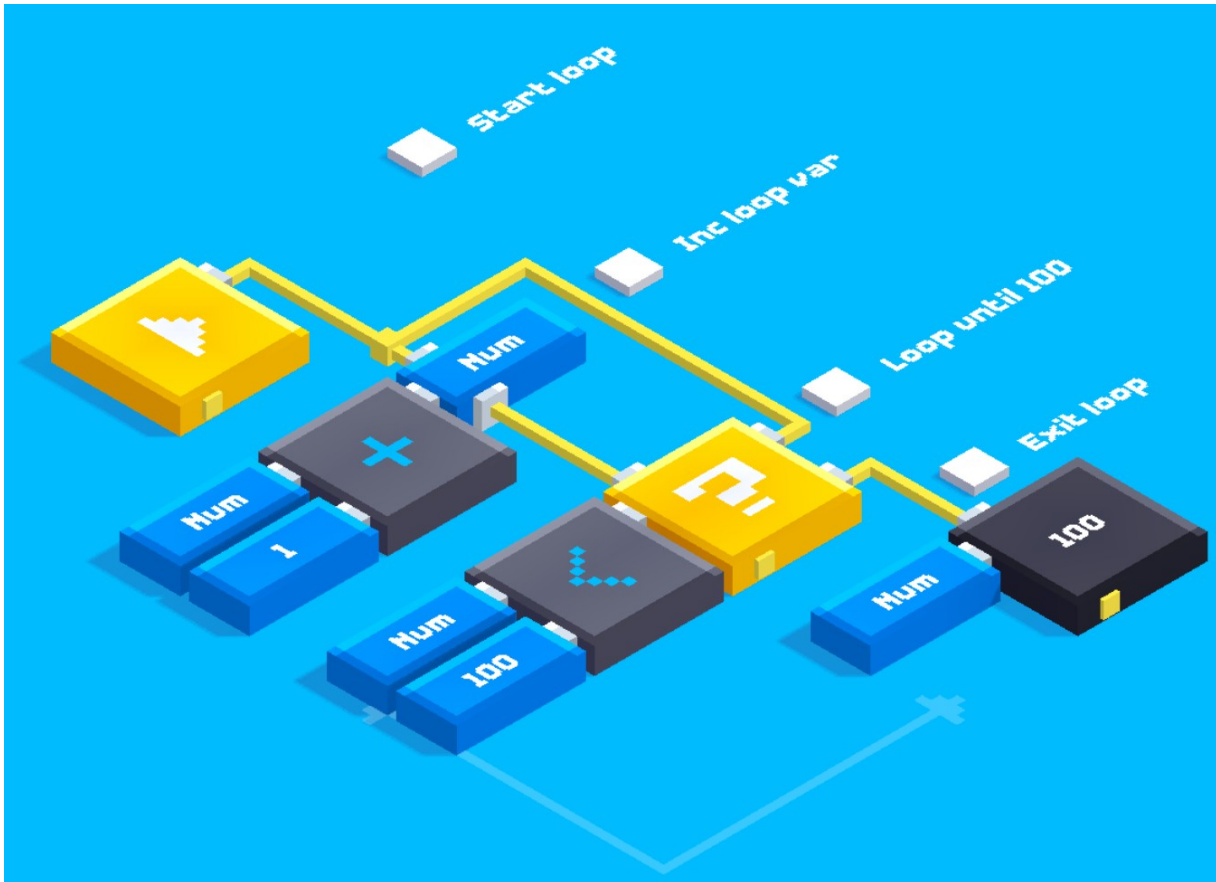
Executed 60 times for second (implicit forever loop)

Execution order: left-right and top-down

Explicit Variables (used also to reduce wires and increase fan-out)

Code can read/write blocks properties

Explicit Control = before/after links (jellow wires)



Loops

do:

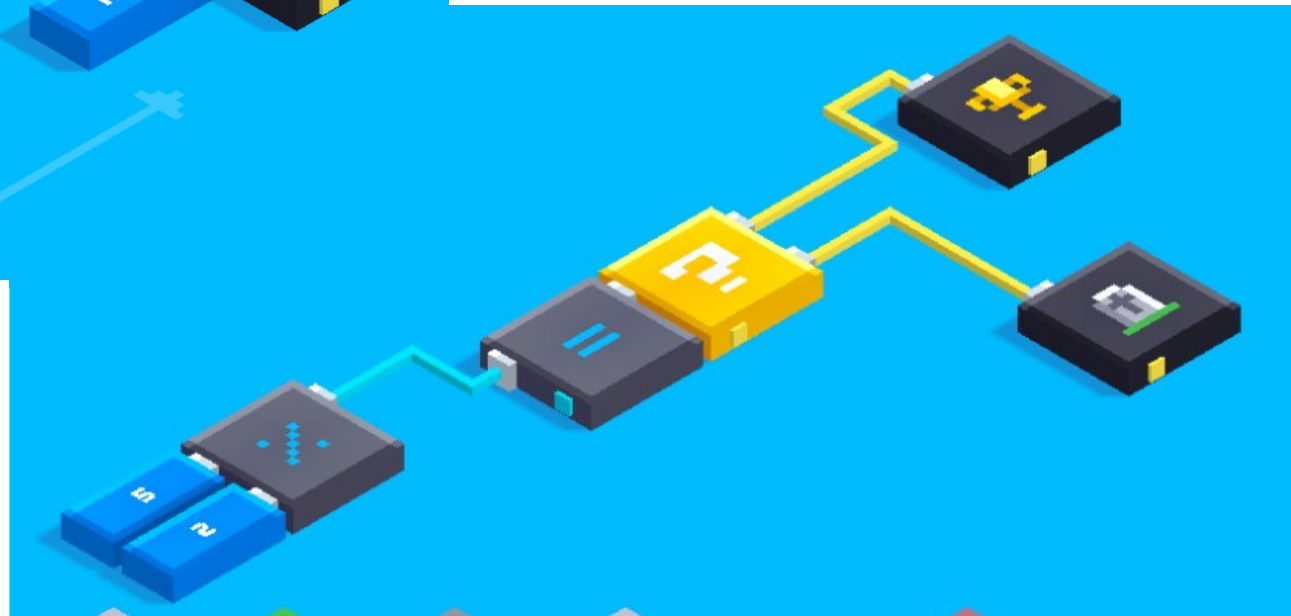
Num += 1

while num < 100

If-then-else

if $5\%2==0$:

then: win else: lose

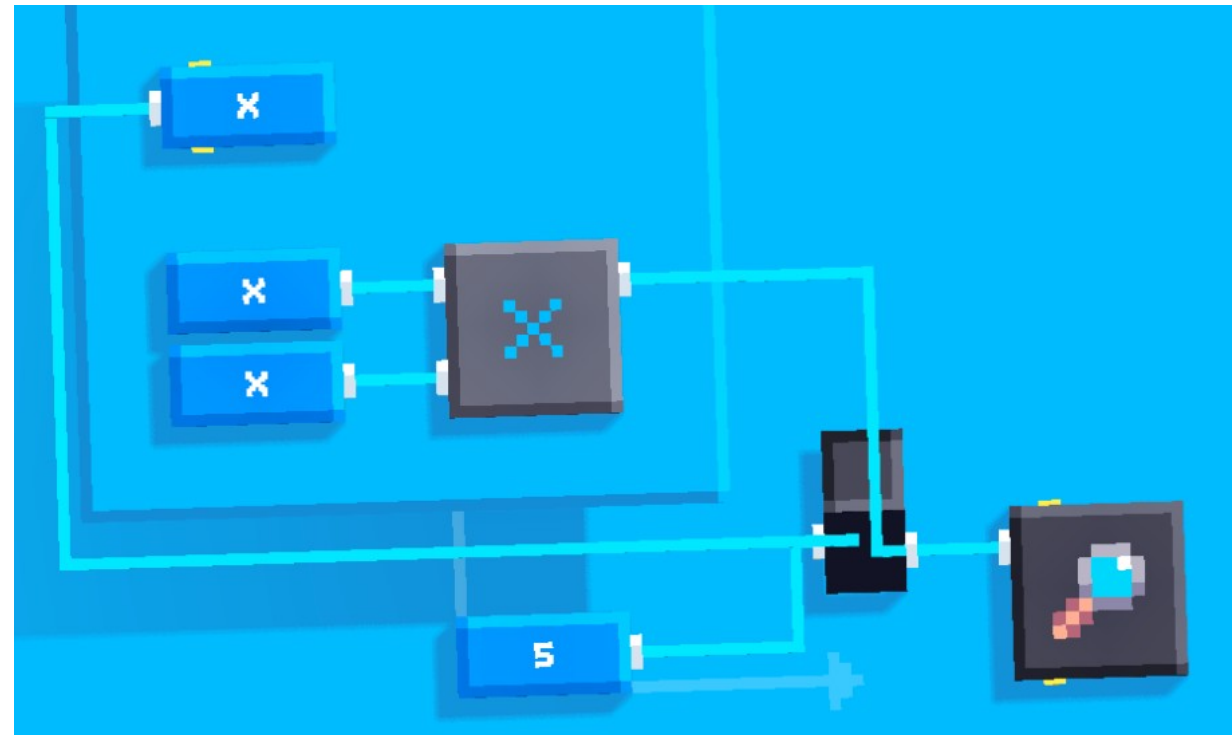


Functions: custom blocks

Functions? YES

Just put “code” inside a block, with external connectors

```
def square(x): return x*x
```



Modularization:

- custom blocks can be placed inside other blocks
- BUT: NO recursion is allowed (direct or indirect)

Many game-oriented block categories

VALUES (different types)

VARIABLES (getter/setters)

MATH (operators)

CONTROL (if-then, loops ...)

SCENERY

SCRIPTS

INSPECTORS

GAME (win/lose/score)

CREATURES

PHYSICS (gravity, vectors, springs, ...)

DEMO

PlayOsmo: tangible interaction for kids

Your iPad scans the table in front of it (with an attached mirror)

You play with tiles (instructions or tangram pieces or letters or draw)

It recognizes your “code” or words in the game



Loops and simple repetitions

Blocks represent action and direction

- modifier: number of repetitions

Loops

The instructions' meaning depends on the game

- Music playing game
- Monster in a labyrinth game



But also

Drawing helper (virtual reality drawing)

Spell/word games (character recognition)

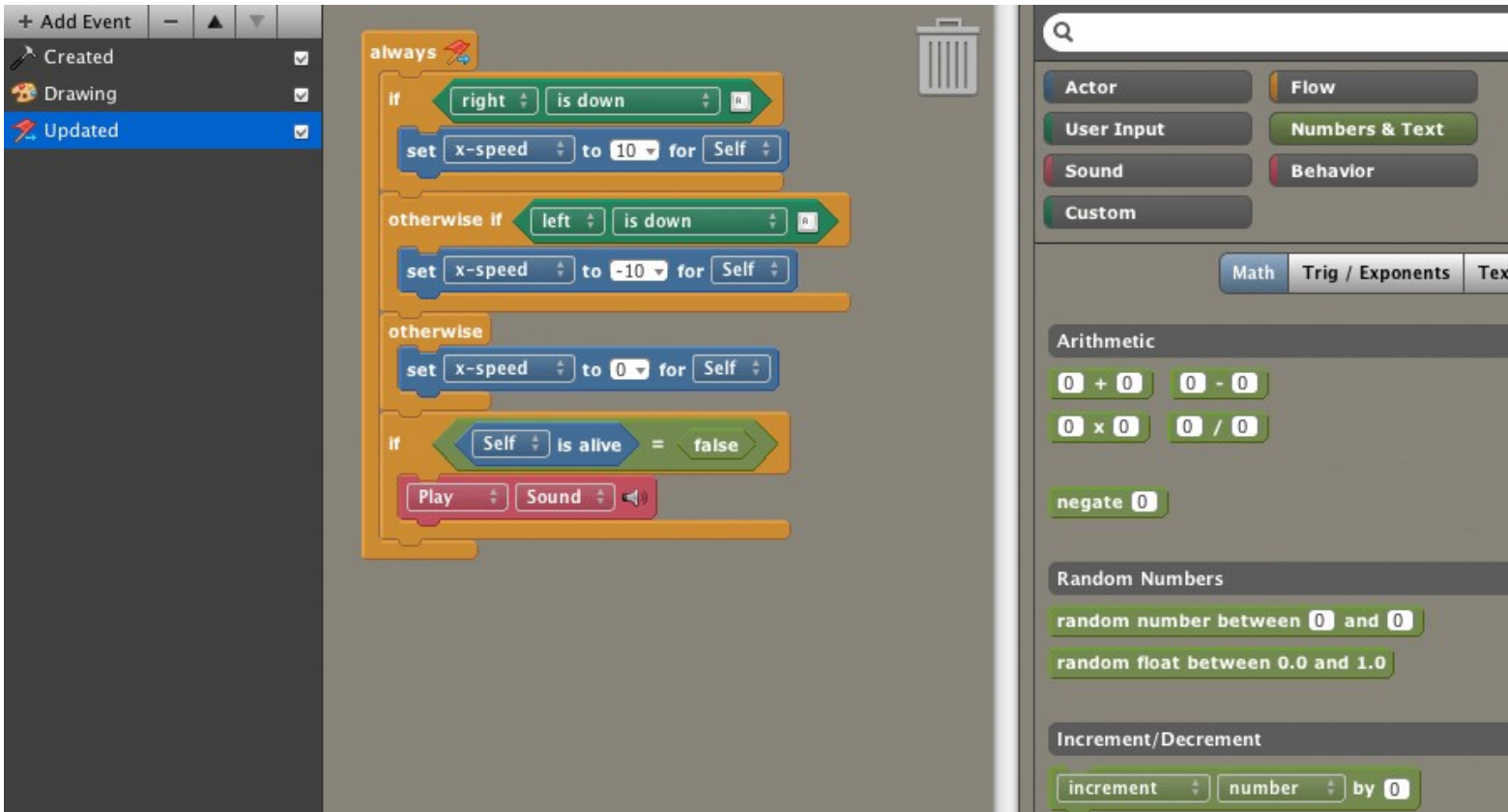
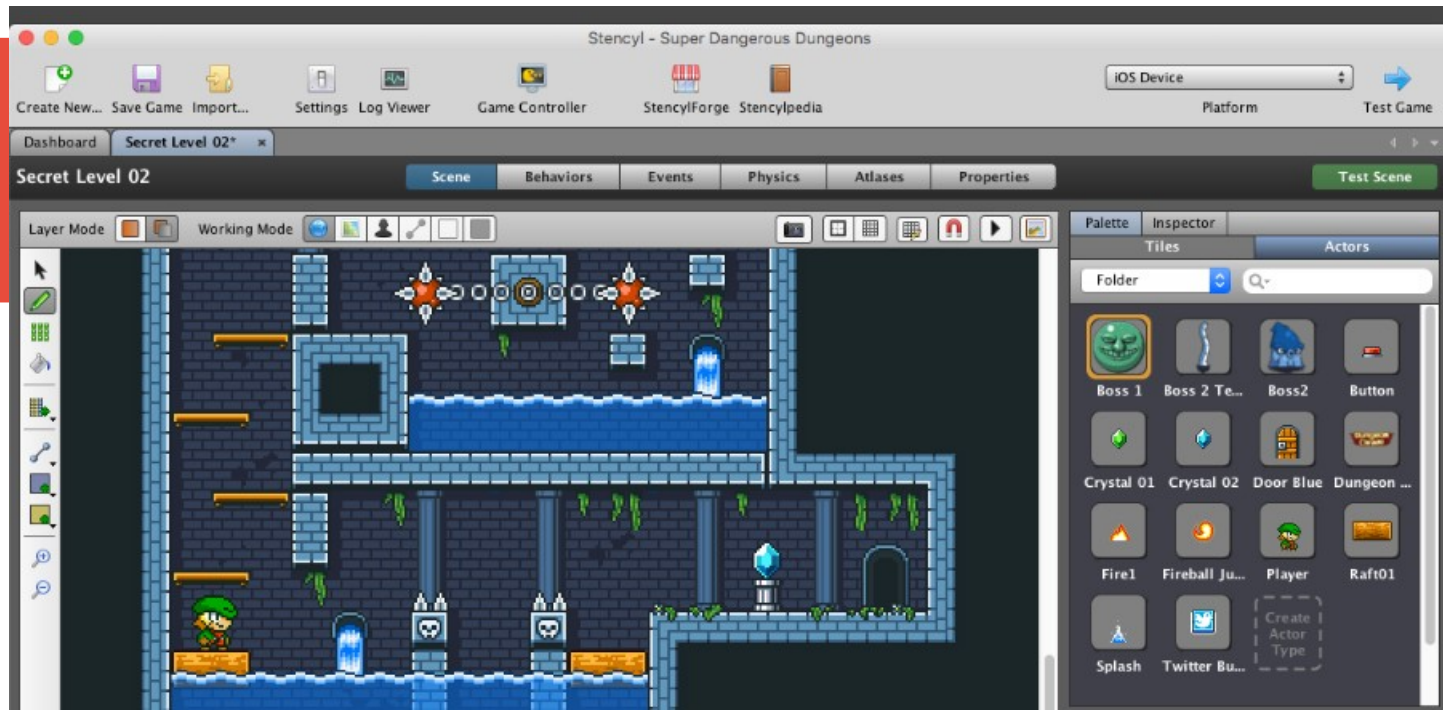
Tangram (shape recognition)

Games (shape recognition)

DEMO

Stencyl

Game designer
(platforms)



2020-21 Other systems

Alice 3 : 3D world programming

Alice



The screenshot shows the Alice 3 programming environment. On the left, a 3D scene (A) depicts Alice and the Cheshire Cat in a forest with large mushrooms. A 'Setup Scene' button (F) is visible. Below the scene is a dropdown menu (C) showing 'cheshireCat'. The 'Procedures' panel (D) lists various actions for 'cheshireCat', such as 'say', 'think', 'move', 'moveToward', 'moveAwayFrom', 'moveTo', 'place', 'turn', 'roll', and 'turnToFace'. On the right, a code editor (H) shows a procedure named 'myFirstMethod' (I) with the following code:

```
declare procedure myFirstMethod
do in order
  alice say "Where am I?" , duration = 2.0 add detail
  cheshireCat say "Where do you want to go?" , duration = 2.0 add detail
  alice say "I do not know..." , duration = 2.0 add detail
  cheshireCat say "Then it does not matter where you are..." , duration = 2.0 add detail
  cheshireCat setOpacity = 0.0 , duration = 4.0 add detail
```

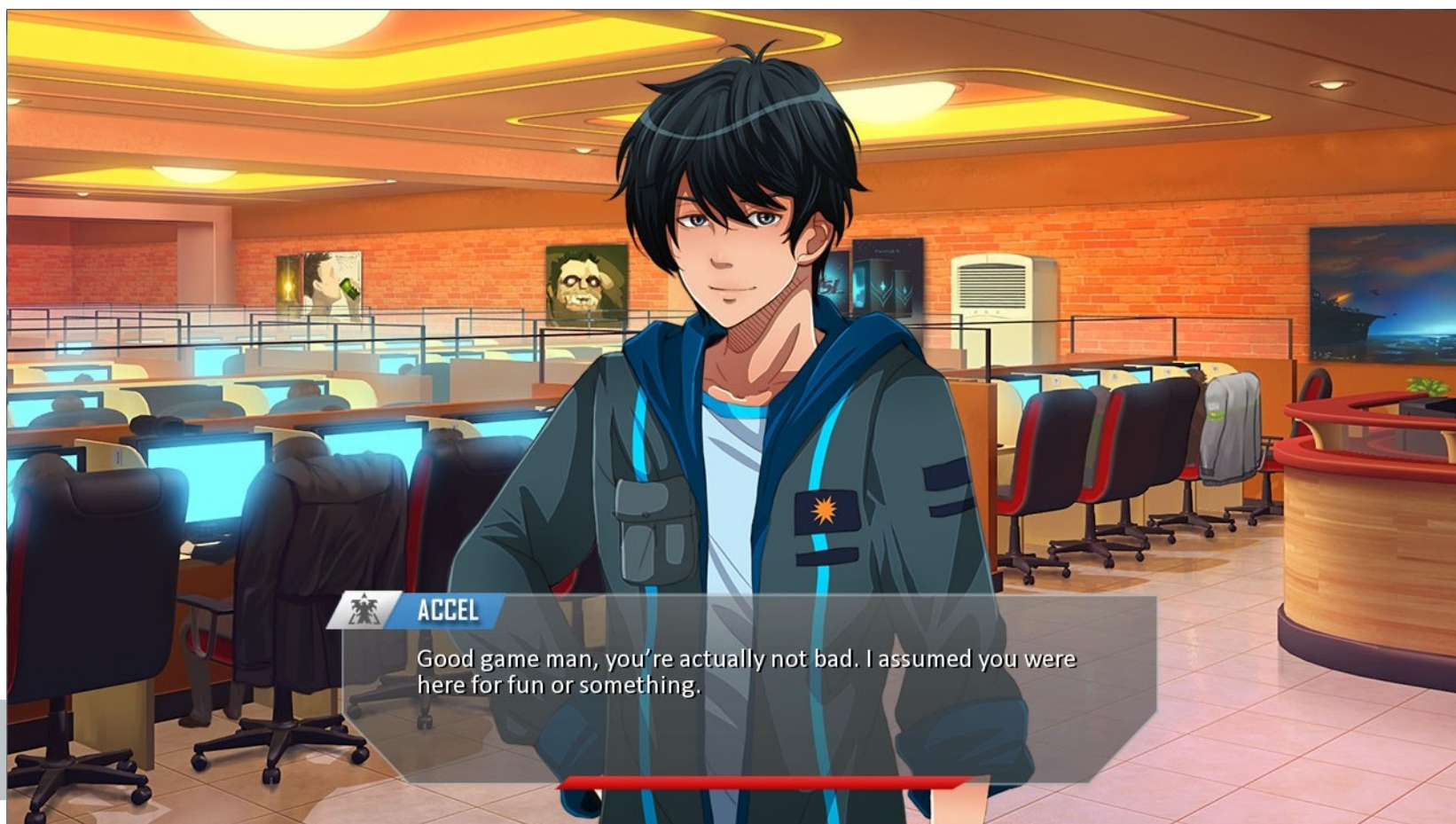
At the bottom, a palette (K) contains various programming constructs like 'do in order', 'count', 'while', 'for each in', 'if', 'do together', 'each in together', 'variable...', 'assign', and '//comment'. A 'Run...' button (G) is located at the top of the scene view.

Ren'Py

Dialogue-based adventures (Visual Novels)

Python-inspired simplified syntax (with indentation)

Runs in Python



Methods in

Others

Kodu: Design 3D games on Xbox (and PC)

Kodular: game editor

Construct: HTML5 game editor

Swift Playground: by Apple

MakeBlock: robots/microcontrollers + Scratch

Tynker: Scratch-inspired

... and many other game-editors