Construct 2

A game engine without the programming.

Construct 2 is a powerful tool

- Started as a prototyping program, but is now being used to make polished games.
- Has a GUI for level design and art.
- Uses programming logic without code.

Games made with Construct 2:

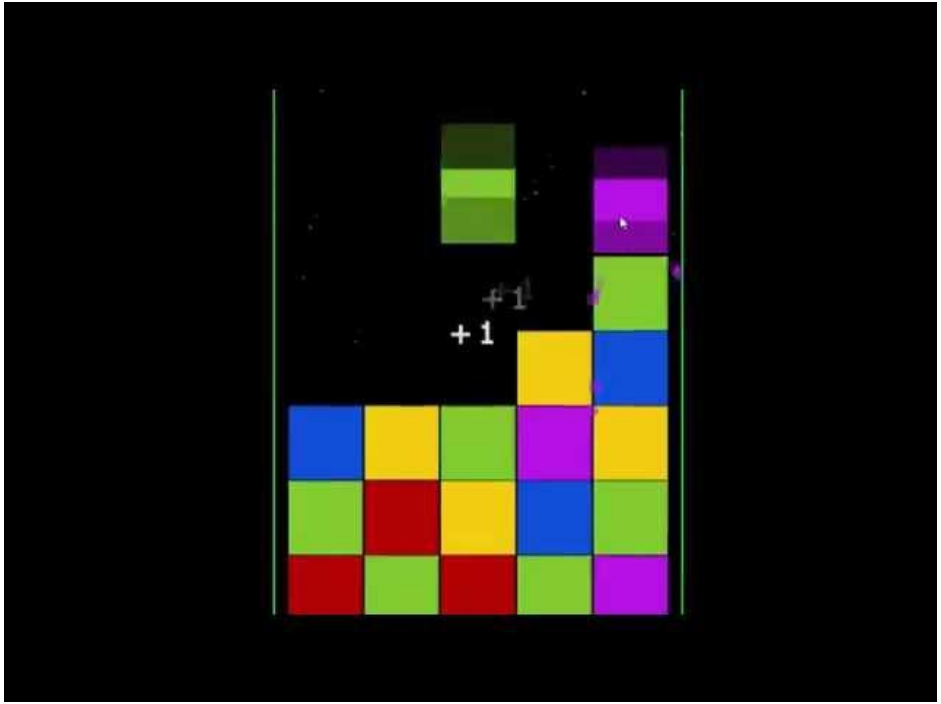
Prism Shell,

by Brooklyn Gamery

Games made with Construct 2:

Crush II,

By Arthur Ward Jr.



Games made with Construct 2:

The Next Penelope,

by Aurelien Regard

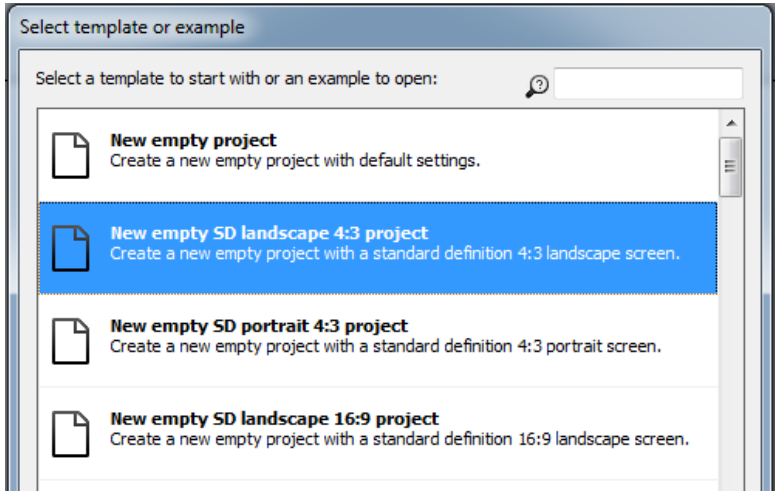
Today we will make a platforming game!

- Jump around platforms
- Collect rings (or some other awesome item)
- Don’t touch enemies!

Basic concepts of C2

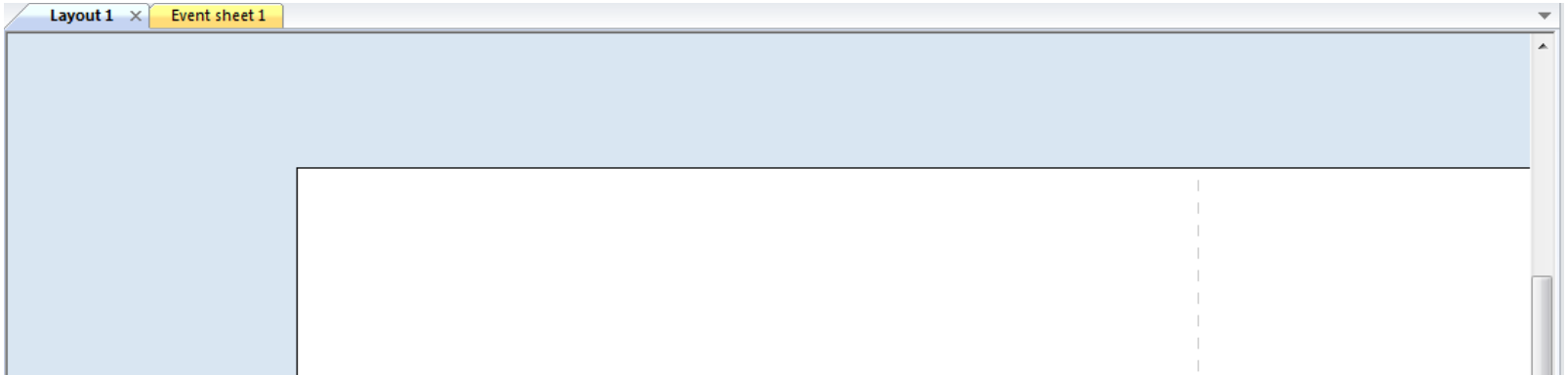
Projects

Construct comes with a bunch of premade project types. Make a new project.



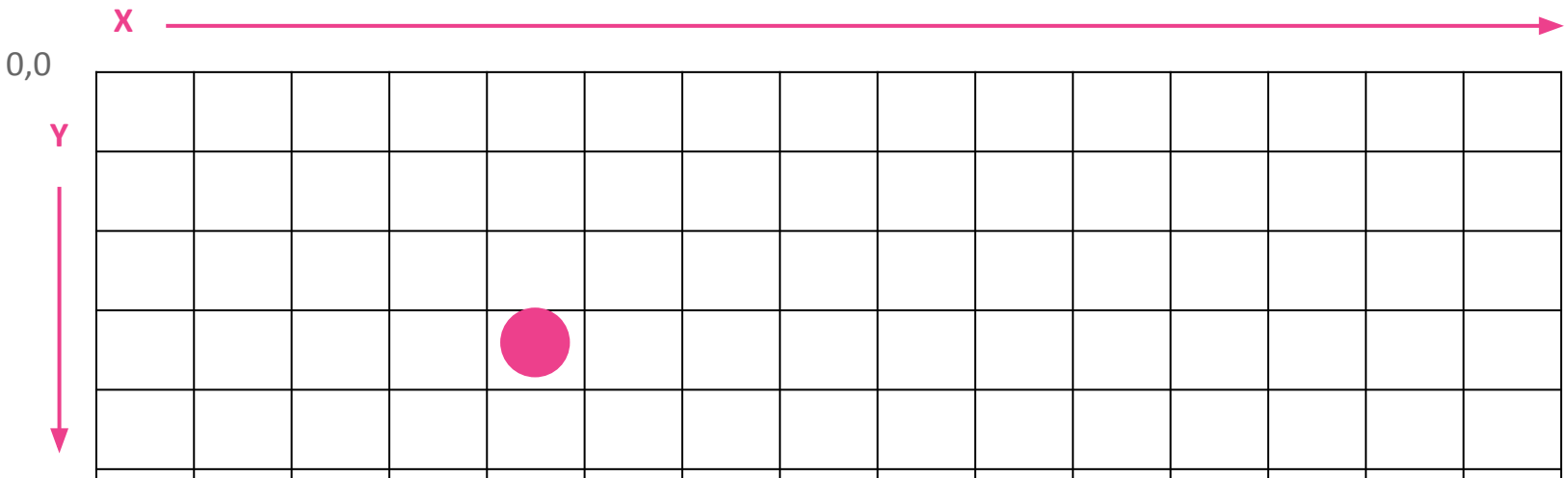
Layouts

- Arrange characters, backgrounds, etc. on layers and move them around freely.
- Each object needs to be on a layout once.



Positioning

- X is horizontal
- Y is vertical



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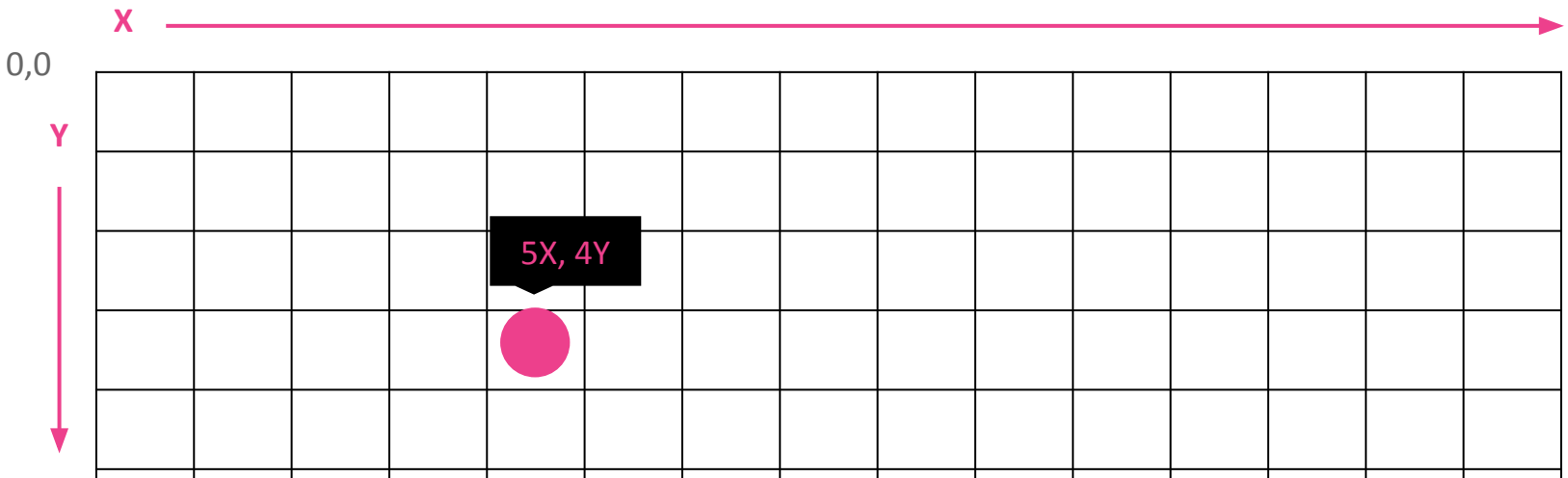
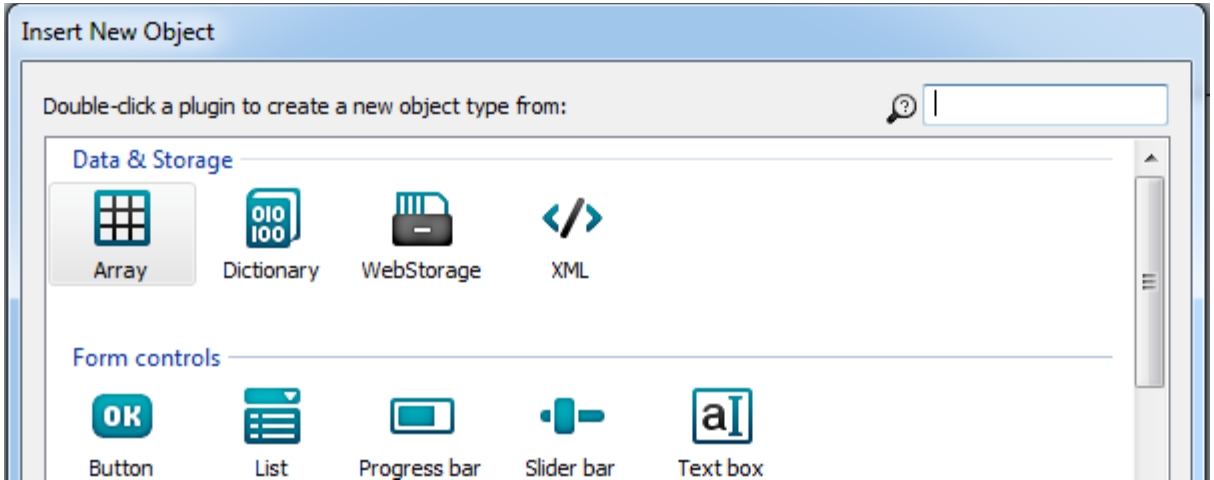


Objects

- You can create types of objects from plugins
- 3rd-party plugins can be downloaded & installed

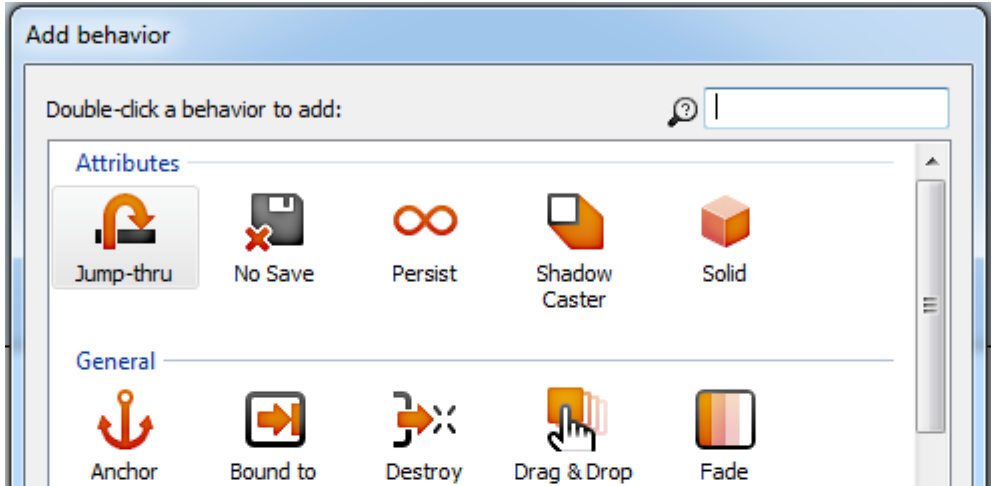


Challenge: make your game's objects

- Create a sprite that will be your player.
- Create a sprite to use for collectible items.
- Create a sprite to use for your enemies.
- Create a 9-patch that will be used for platforms and walls.
- Arrange your objects on the layout.

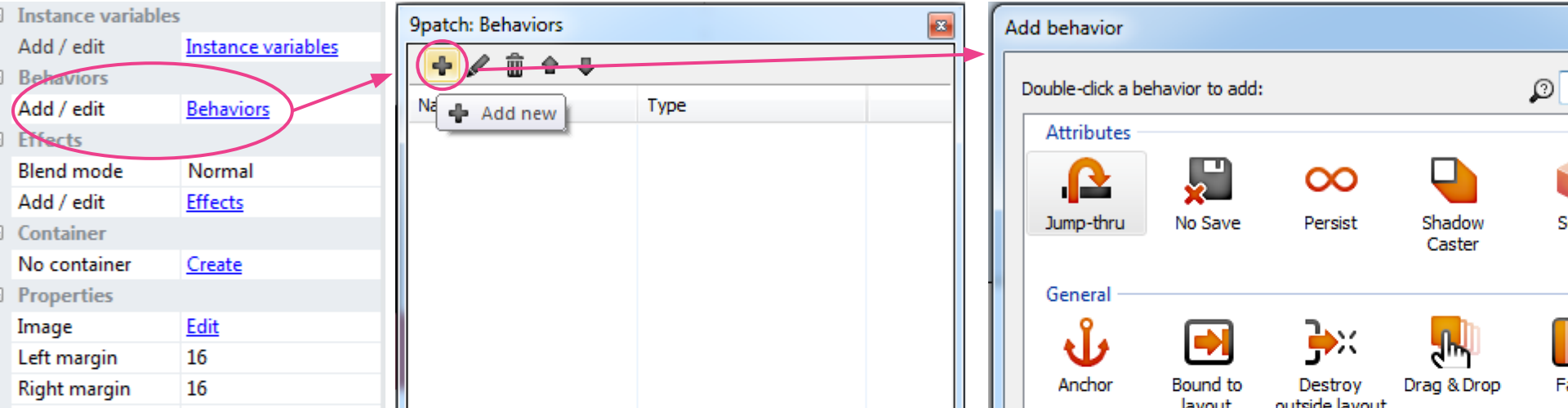
Behaviors

Behaviors define what objects can do.



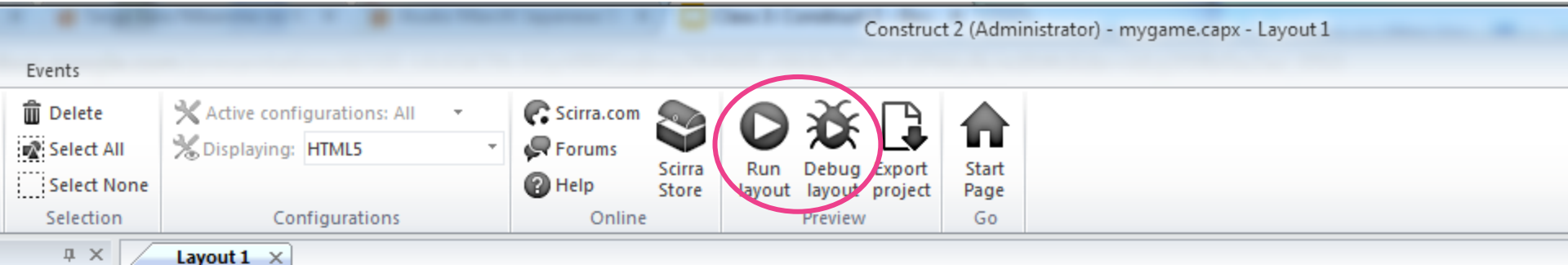
Challenge: give your objects behaviors

- Give your player Platform & ScrollTo behaviors.
- Give the walls and platforms the Solid behavior.



Now try running your game!

Try using your keyboard to move.



Event Sheets

Set up all kinds of actions and systems.

Layout 1 | Event sheet 1 | 2_Platform_Entrance | 1_Subway_Entrance | 00_Title Screen | 01_Scene1 | 000_Main_Controls

Global text **CurrentLayout** = ""
Global number **PlayerLocationX** = 135
Global number **PlayerLocationY** = 1080

1 **Encounter system**

Encounter system

2 System | On start of layout | System | Set **CurrentLayout** to *LayoutName*
SceneFa... | Move to layer **2**
SceneFa... | Set width to *LayoutWidth*
SceneFa... | Set height to *LayoutHeight*
SceneFa... | Set position to (*0*, *0*)
SceneFa... | Fade: start fade

Events Require Conditions

If a certain condition is true, something will happen.

In code:

```
if (x = 1) {
   console.log("hello!");
}
```

Question!

How do we get the player to look like it’s moving in a certain direction?

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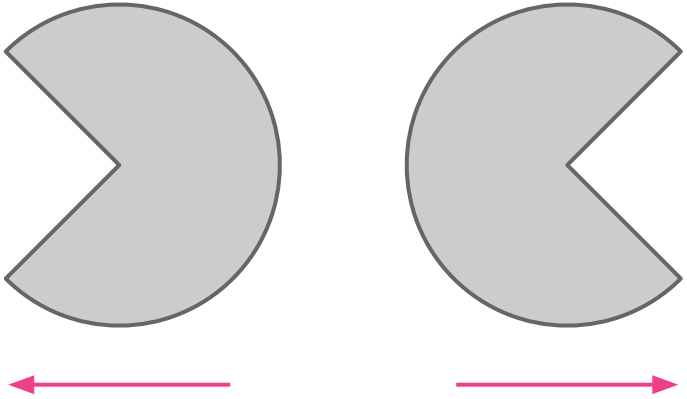
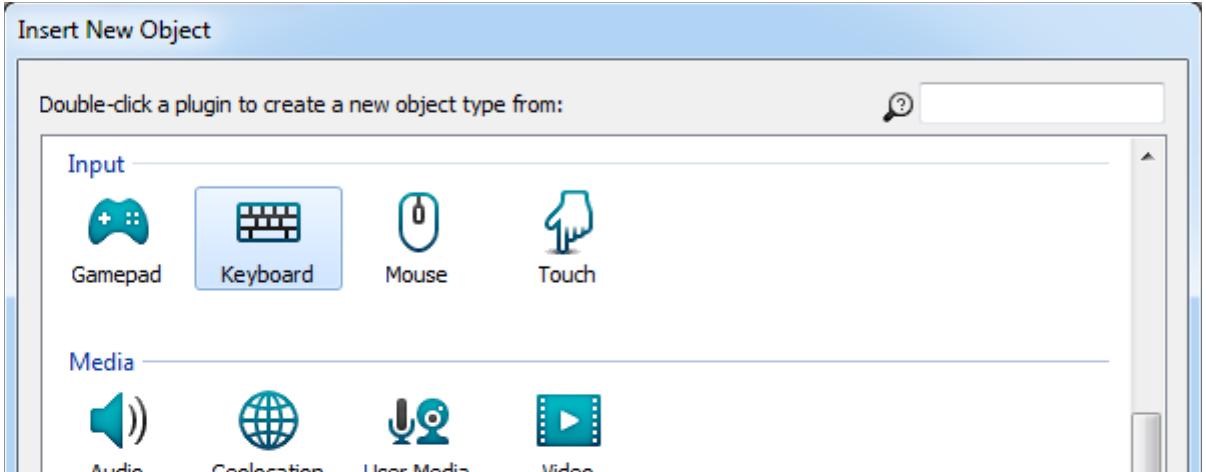
Two different ways:

1. Mirror the object
2. Change animations



Keyboard Input

Before we can use keyboard events, add the keyboard plugin as an object.



Challenge: Create your first events

Create an event for each set of pseudo-code:

```
when the left arrow key is pressed,
the player should look left.

when the right arrow key is pressed,
the player should look right.
```

Challenge: Create ghost movement

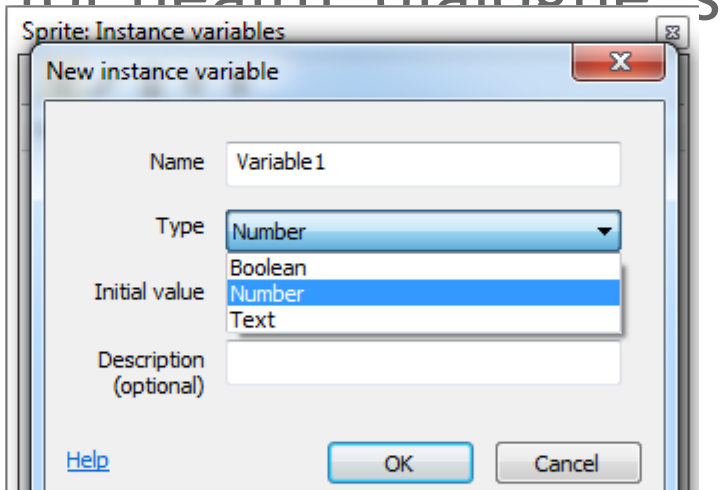
Create events for this pseudo-code:

```
each frame(tick),
move enemies in the direction of the
player's position.
```

Scoring and Health

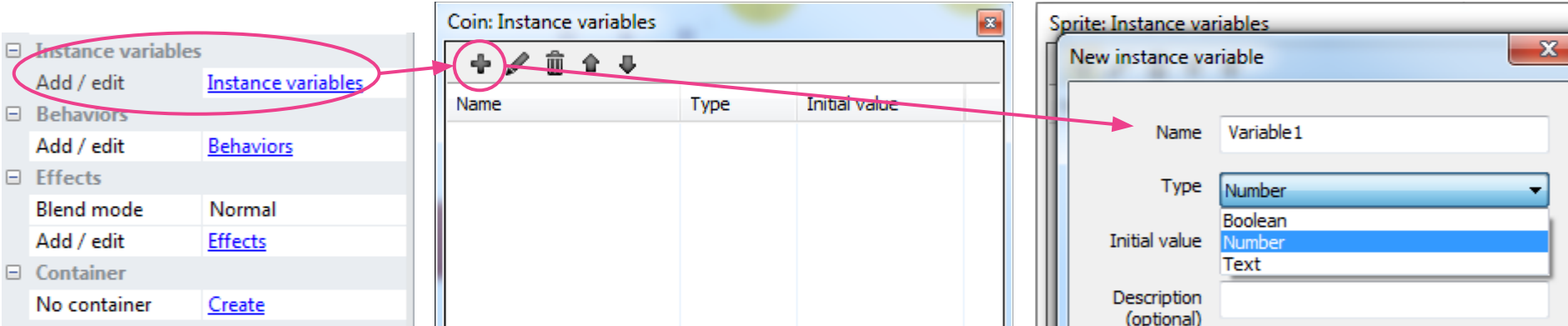
Variables

- Objects can have variables that store information
- Can be used for health, dialogue, score, etc.



Challenge: Set up variables

- Create a number variable for coins.
- Create a number variable for the player's health and set its initial value to 50.



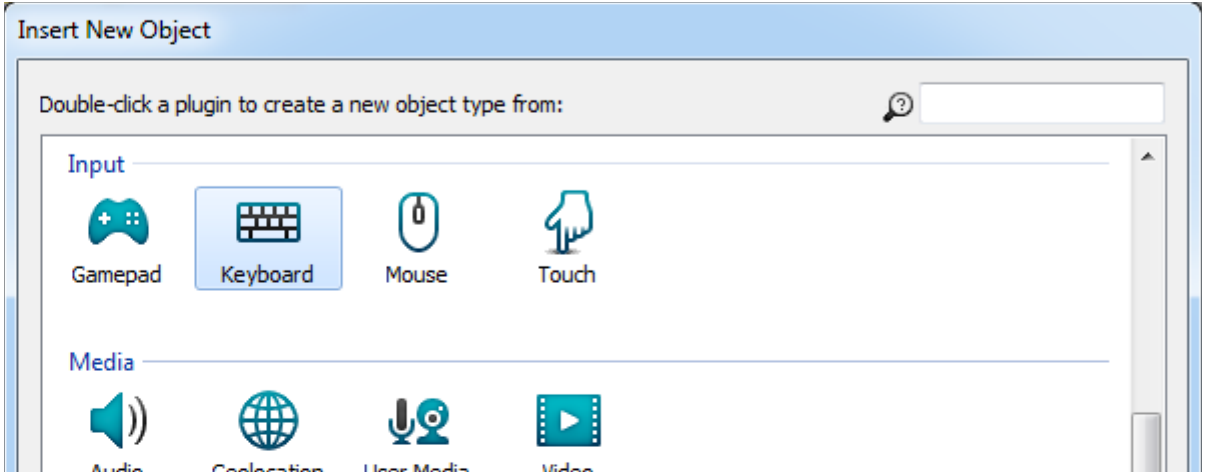
Challenge: Collision with coins

- Create an event for this pseudo-code:

```
on collision with coins,
coin count should increase by 1.
```

Using Text

Text can be used for a variety of things, including the user interface (UI).



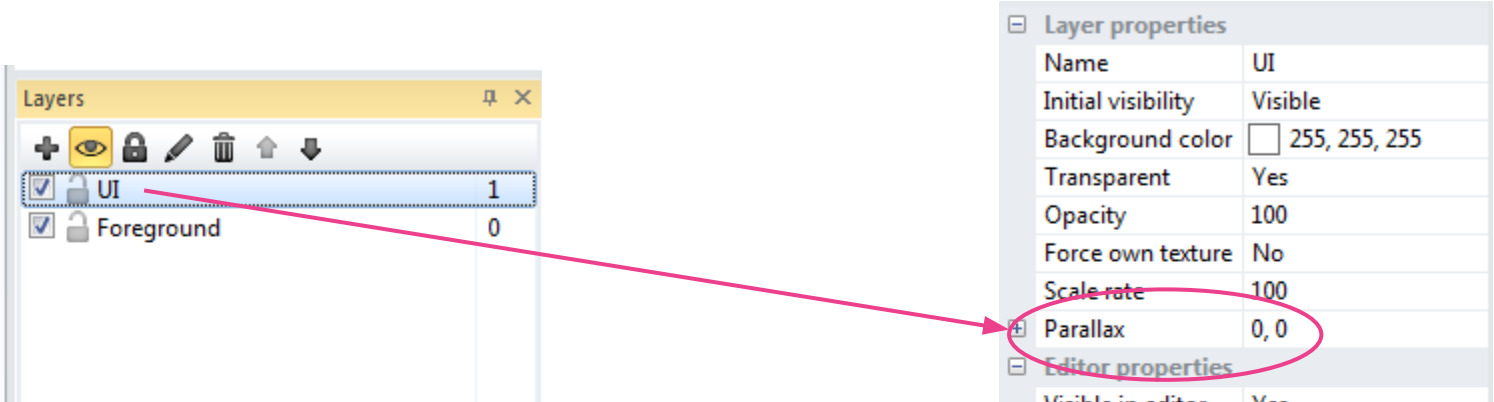
Challenge: Set up text

- Create a text object that will be used for coins.
- Create a text object that will be used for health.
- Give the text objects initial values
  - (I used “Coins: 0” and “Health: 50”).
- Place both objects on your layout and arrange them to your liking.

Setting up a UI layer

In order to get the text to stop moving out of view, create a new layer and set the parallax to 0,0.

Don’t forget to **move your UI onto the new layer**!

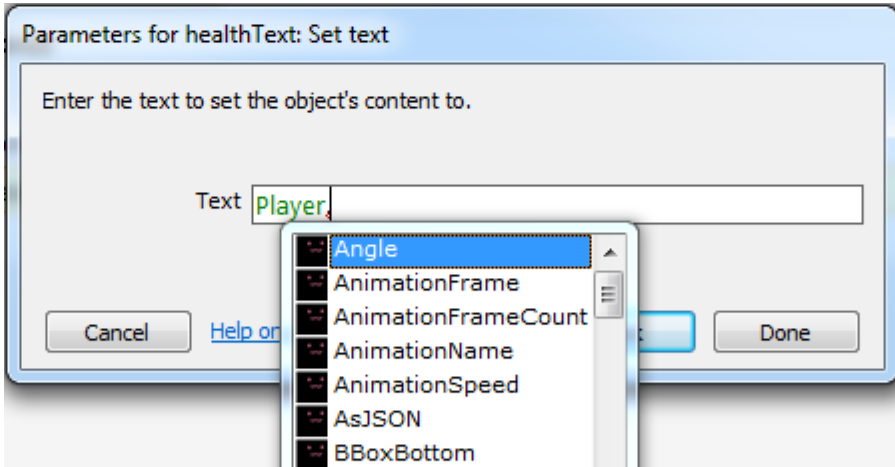


Referencing Variables

Access information about objects in addition to object variables using **dot notation**.

Examples:

```
Player.height
Player.width
Player.variableName
```



Combining strings and numbers

You can combine multiple types of data (strings, numbers, variables, etc.) by using the **&** symbol.

Examples:

```
"Layout width: " & LayoutWidth
"Position: " & Player.X & Player.Y
"My age is: " & 15
```

Doing math

You can do math using the following symbols:

```
+ (addition)
- (subtraction)
/ (division)
* (multiplication)
```

Challenge: Updating text

Create events for these sets of pseudo-code:

```
on collision with coins,
set coin text to the number of coins.
```

Making enemies work

Challenge: make enemies move

Experiment with enemy movement using the System's every tick condition.

- Can you make enemies move toward the player?
- Away from the player?
- What other ways can you make enemies move?

Challenge: collision with enemies

Once you've found a movement style for your enemies, create events for this pseudo-code:

```
on collision with enemies,
decrease player's health by 1,
then set health text to player's health.
```

Challenge for the week!

If you can, work on your game some more.

- Find and import art assets.
- Make a background.
- Make a start and end screen.
- Link the gameplay layout to the start and end screens using System and Keyboard events.

Thanks! Questions?

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