

pset0: Scratch

Tommy
MacWilliam

Scratch

Mario

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Tommy MacWilliam

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Announcements

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- ▶ Welcome to CS50!
- ▶ These happen every week!
 - ▶ can't make it? watch the video!

Today's Music

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- ▶ The White Panda
 - ▶ Infinite Dream
 - ▶ Stereo Hands
 - ▶ Stuntin' Like My Energy
 - ▶ Eminem Front

Scratch

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Actually Scratch

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Sprites

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- ▶ each object (e.g. cat) is a sprite
 - ▶ want 2 cats? make 2 sprites
- ▶ sprites have **scripts** to define their behavior and **costumes** to define their appearance

Creating Sprites

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- ▶ use existing image



- ▶ draw image



- ▶ random!



Stage

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- ▶ sprites are placed on the stage
 - ▶ stage also has **scripts** and **backgrounds**
 - ▶ have a script that doesn't really apply to a single sprite?
use the stage

Entry Point

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- ▶ **event:** green flag clicked to begin project
 - ▶ no limit on how many sprites can have the same piece

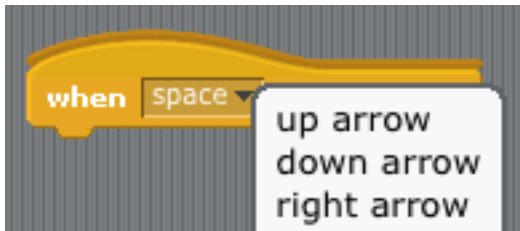
Events

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- ▶ respond to other events the same way

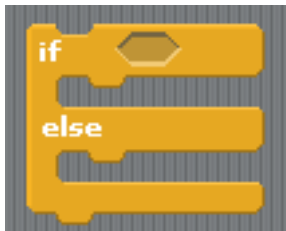
Conditionals

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- ▶ take separate paths depending on a **condition**

Conditions

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- ▶ compare values using =, <, >
 - ▶ combine comparisons with **and**, **or**, **not**

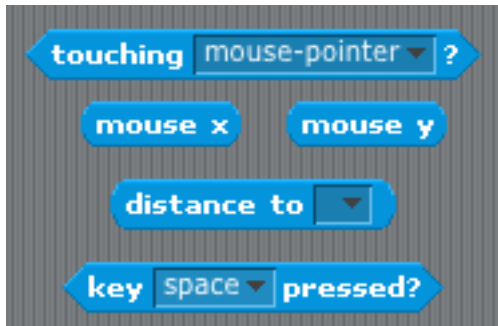
Sensing

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- ▶ used inside of conditions

Variables

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- ▶ store numbers or words
 - ▶ value can change
 - ▶ set to specific value, or increment/decrement

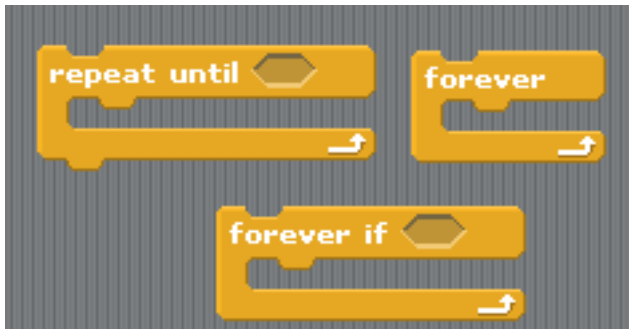
Loops

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- ▶ repeat something more than once
 - ▶ how many times? until **condition** is met

Loops

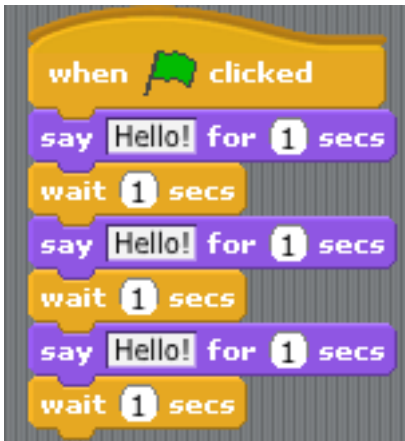
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- ▶ good idea?



Loops

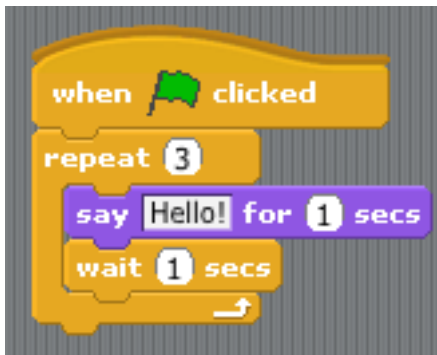
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- ▶ good idea!



Messages

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- ▶ communicate among sprites
 - ▶ one sprite sends a **message** to all other sprites
 - ▶ any number of sprites receive the message

Mario

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▶ example time!