Snap! XY Geometry, 3D, and Broadcasting

COR100 Snap! Programming Fall 2022

XY Geometry and Motion

- [X] Open a new project `Geometry`
- [X] To see the grid, change the background to `XY-grid`
- Every point on the screen has two coordinates, `x` and `y`
- Every sprite in Snap! has a *center point* which you can view and change in the paint editor
- [X] Open the `Paint editor` on the standard turtle sprite
- [X] Turn the turtle into a **solid red square** in the center
- [X] Go to `Scripts` and move the sprite to the exact position (0,0)
- [X] Move it to (-200,100)
- [X] Let it `glide` in `2 secs` to the center position (0,0)
- [X] Add to the last command by changing the `x` position by `-100`
- [X]

  Add to the last commands and let the square glide `5` times in `0.5 sec` between the two positions

- [X]

  Duplicate the last program and make the square jump up and down **smoothly** between the positions (0,0) and (0,10) ten times.

  Tip: smooth motion is a combo of `repeat` *and* `change`.

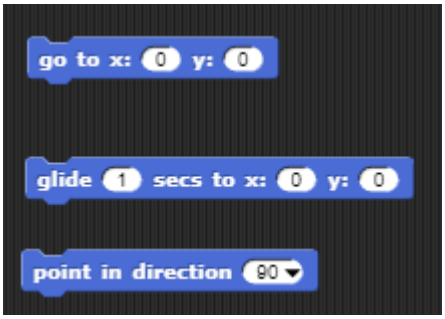
- [X]

  Add a command to the last program to `repeat` the jump `5` times - this is called a *nested loop*.

Absolute motion

- Absolute motion is independent on current position and direction
- Example: "Go to the Salty Dog"

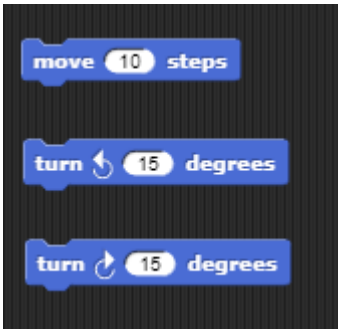
- Snap! commands that describe absolute motion:



Relative motion

- Relative motion depends on current position and direction
- Example: "Turn right then left"

- Snap! commands that describe relative motion:



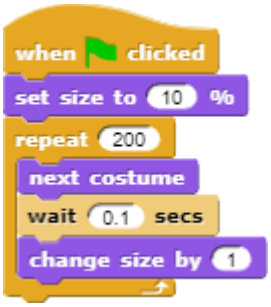
3-D effect using looping

- Sprite is fully 2-dimensional
- For 3D effects you need to create illusions
- Repetition and size change can do that
- [X] Create a new project and call it `3dim`
- [X]

  Load the costumes `dove1 a` and `dove1 b`


- [X] Load any outdoor or indoor background
- [ ]

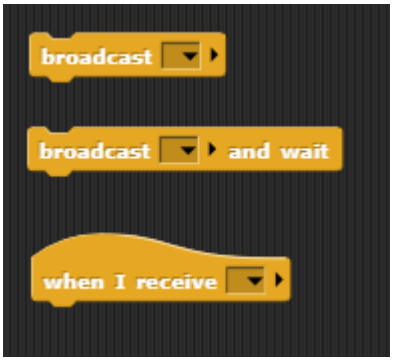
  Create and run the following script



Synchronize sprites with broadcasting

- Two sprites are not automatically synchronized
- We can synchronize manually or rely on *broadcasting*
- Broadcasting = sending message to a listener
- This is also the basis of OOP

- Snap! broadcasting commands:



- [ ] Create a new project `broadcasting`
- [ ]

  Create two sprites and give each one of these scripts:

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