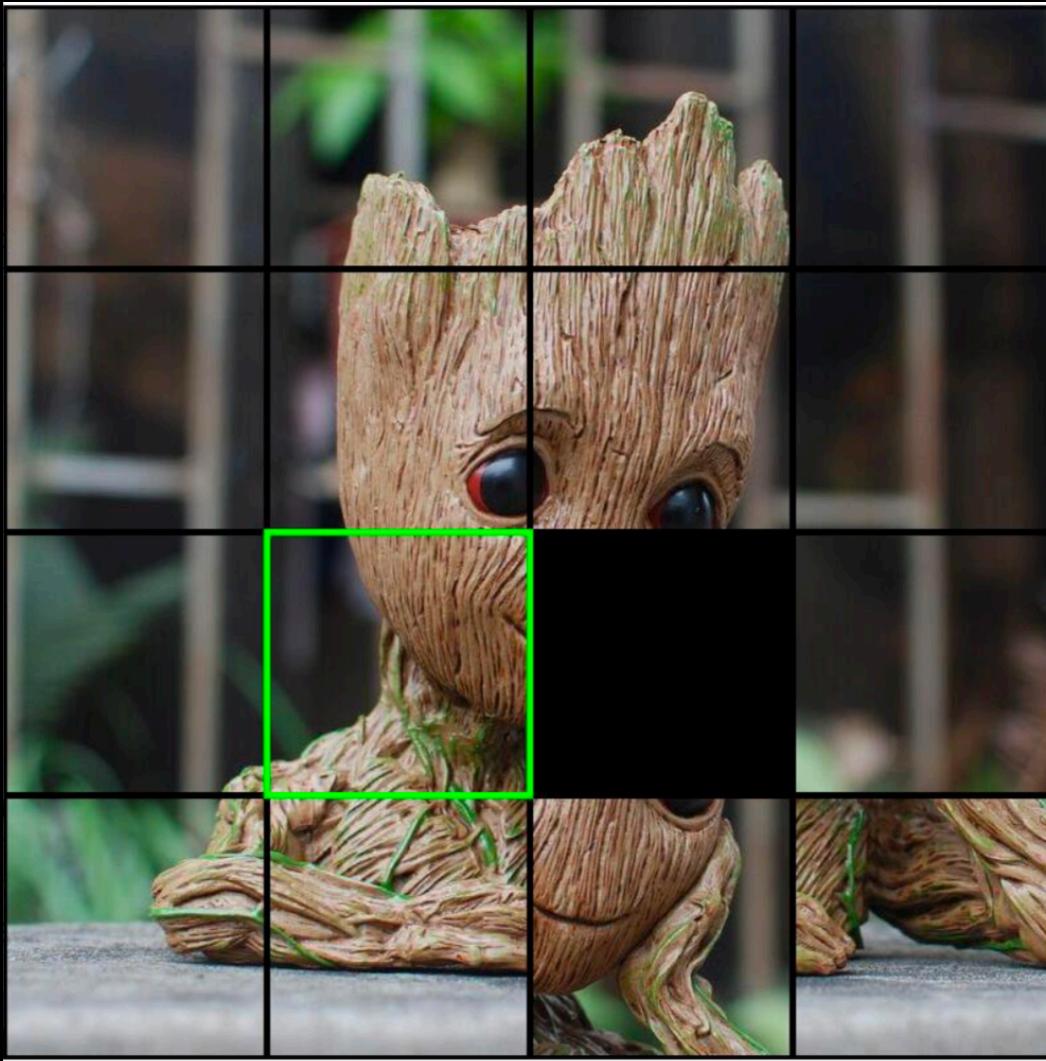


Intro to Computer Science

CS-UH 1001, Spring 2022

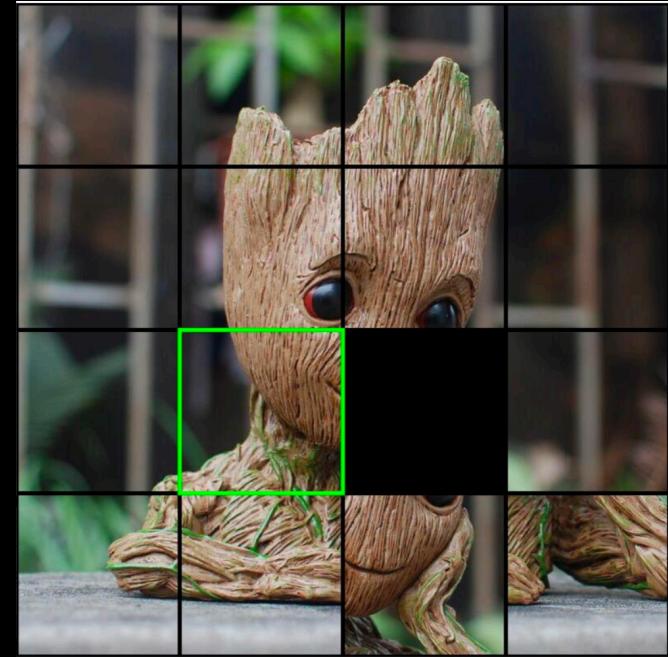
Lab: Sliding Puzzle

Lab: Sliding Puzzle



What do I need to represent

- What are the classes?
 - The Tile class
 - The row
 - The column
 - The image to load
 - The order to win
 - The Puzzle class
 - The set of tiles



How to represent these classes

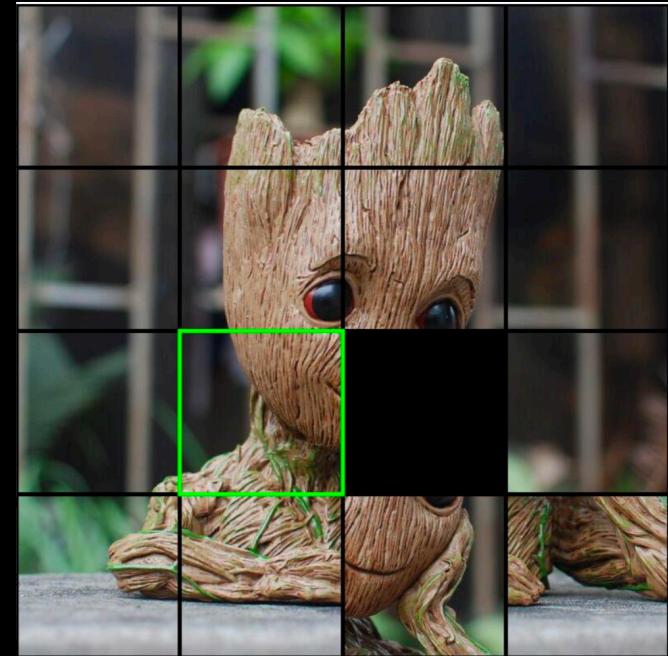
- What are the classes?

- The Tile class

- The row (**int**)
 - The column (**int**)
 - The image to load (**loadImage**)
 - The order to win (**int**)

- The Puzzle class

- The set of tiles (**a list**)



Determine the order of tiles

- Can you guess the formula to determine the order to win for each tile?



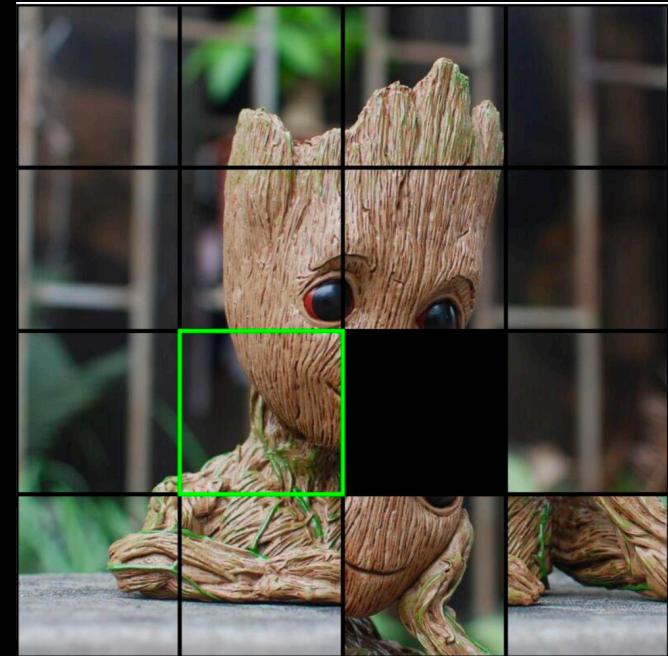
<p>Tile attributes:</p> <p>row = 0</p> <p>col = 0</p> <p>value = 0</p> <p>image = 0.png</p>	<p>Tile attributes:</p> <p>row = 0</p> <p>col = 1</p> <p>value = 1</p> <p>image = 1.png</p>	...	<p>Tile attributes:</p> <p>row = 0</p> <p>col = 3</p> <p>value = 3</p> <p>image = 3.png</p>
<p>Tile attributes:</p> <p>row = 1</p> <p>col = 0</p> <p>value = 4</p> <p>image = 4.png</p>
...
...	<p>Tile attributes:</p> <p>row = 3</p> <p>col = 3</p> <p>value = 15</p> <p>image = 15.png</p>



$value = row * \text{NUM_COLS} + col$

Determine the Images to Load

- Images are stored in a folder named **images**, and located in the same working directory.
- Each image is a **.png** named with its order.

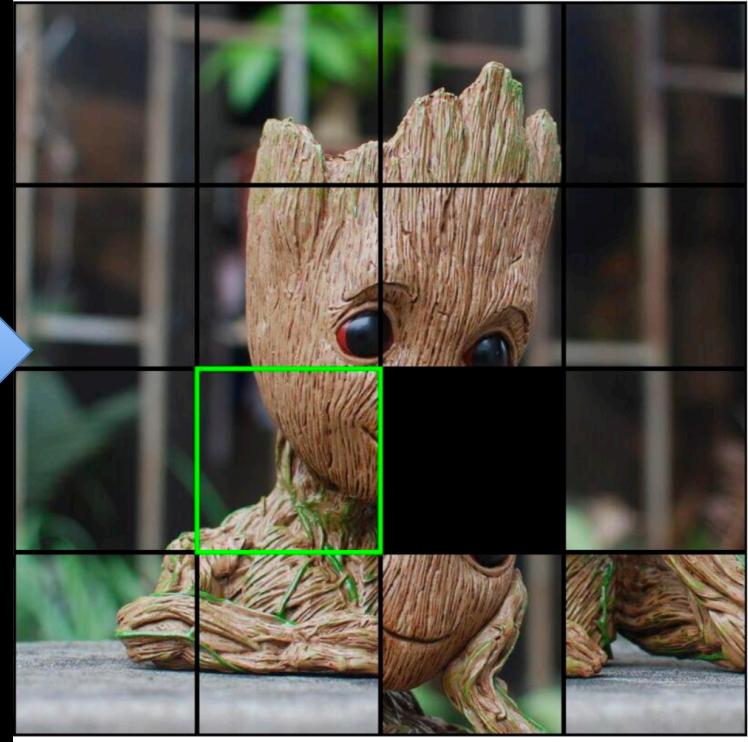
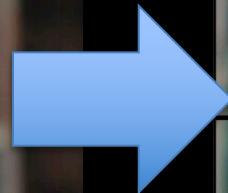
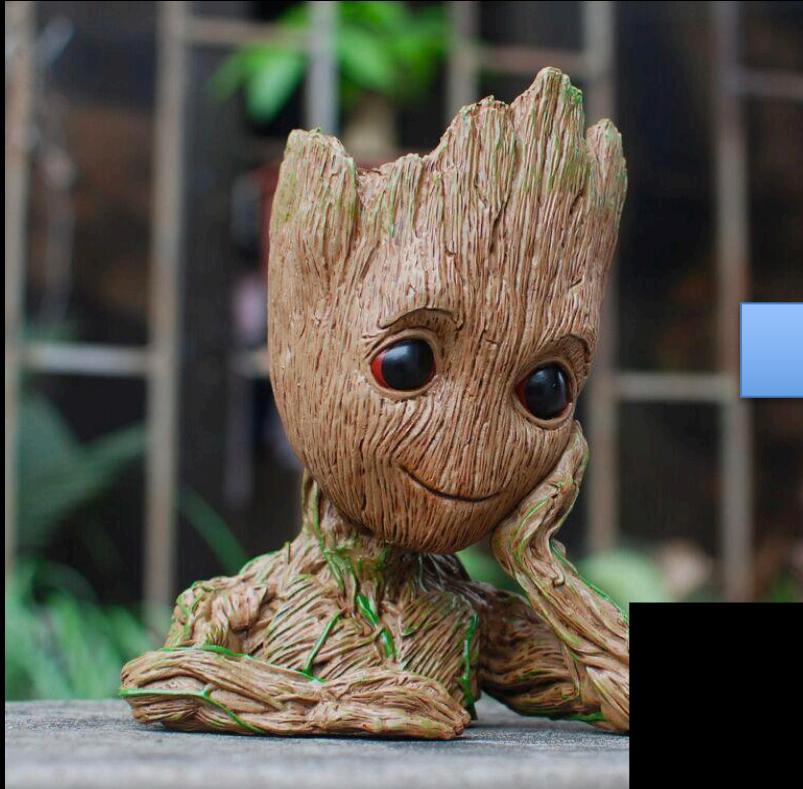


	200	400	600	800
200	<p>Tile attributes: row = 0 col = 0 value = 0 image = 0.png</p>	<p>Tile attributes: row = 0 col = 1 value = 1 image = 1.png</p>	...	<p>Tile attributes: row = 0 col = 3 value = 3 image = 3.png</p>
400	<p>Tile attributes: row = 1 col = 0 value = 4 image = 4.png</p>
600
800	 <p>...</p>		...	<p>Tile attributes: row = 3 col = 3 value = 15 image = 15.png</p>

Upper-left corner (column * TILE_HEIGHT, row * TILE_WIDTH)

Further Improvement

- Add a black border with width 5 around each image.



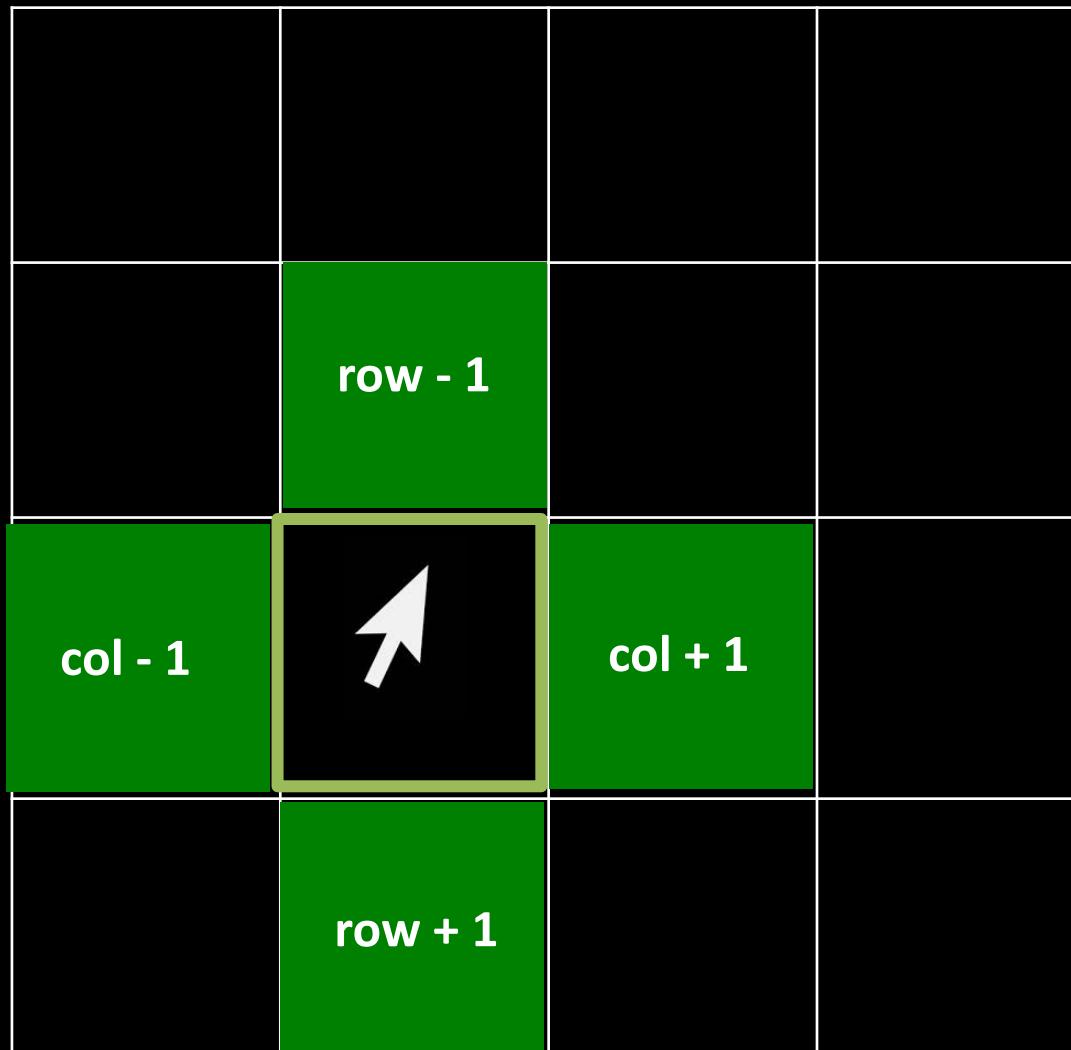
Further Improvement

- Add a black border with width 5 around each image.
- Add a green border when the mouse is hovered over a tile.

Further Improvement

- Add a black border with width 5 around each image. Add the following to the display method in the tile class:
 - noFill()
 - stroke(0,0,0)
 - strokeWeight(5)
 - rect(.....)
- Add a green border when the mouse is hovered over a tile. How to determine the tile using the mouse coordinates?

Check Empty Neighbor



Check Empty Neighbor

Swapping is
possible

