



# Warm Up Project Exercises



# Complete Python Bootcamp

- We're almost ready for you to begin creating a full, interactive Python program.
- For your upcoming milestone project you will be creating an interactive Tic Tac Toe game!



# Complete Python Bootcamp

- In order to “warm up” for this project, we’re going to code along with a few exercises in order for you to see how to use Python code to the following:
  - Grab user input
  - Manipulate a variable based on input
  - Return back adjusted variable



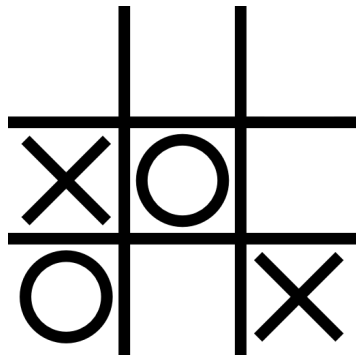
# Complete Python Bootcamp

Visual  
Representation



# Complete Python Bootcamp

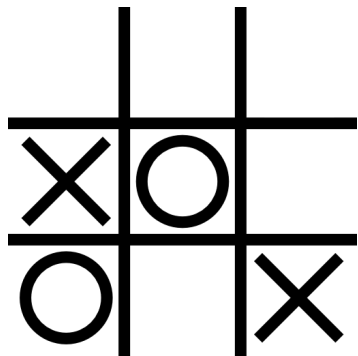
Visual  
Representation





# Complete Python Bootcamp

Visual  
Representation

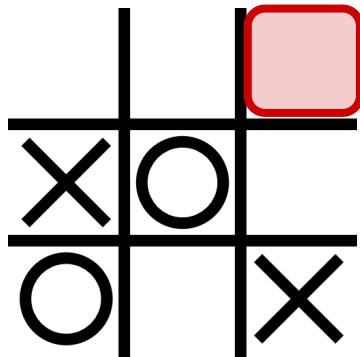


User Input



# Complete Python Bootcamp

Visual  
Representation

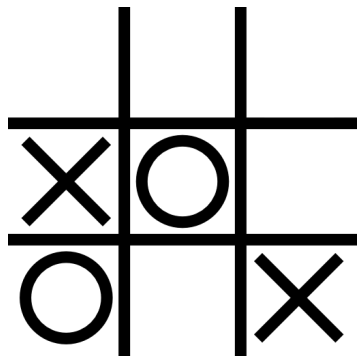


User Input



# Complete Python Bootcamp

Visual  
Representation



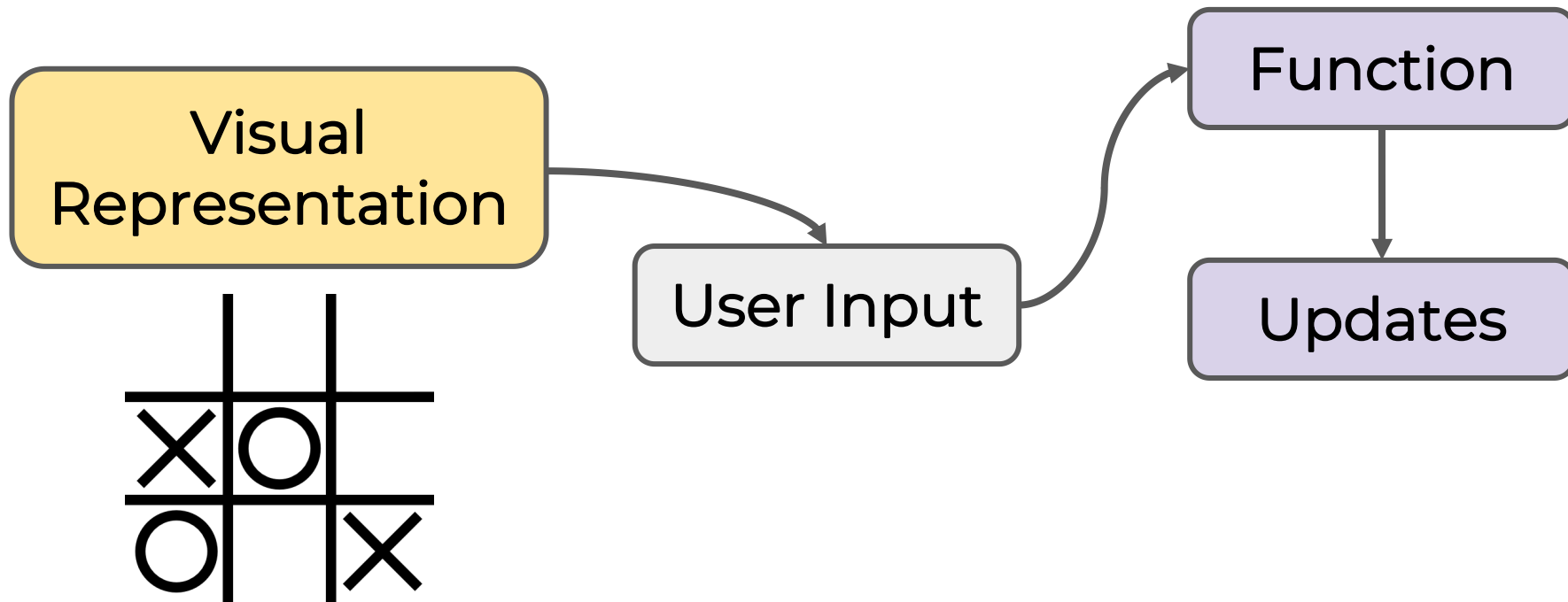
User Input

Function



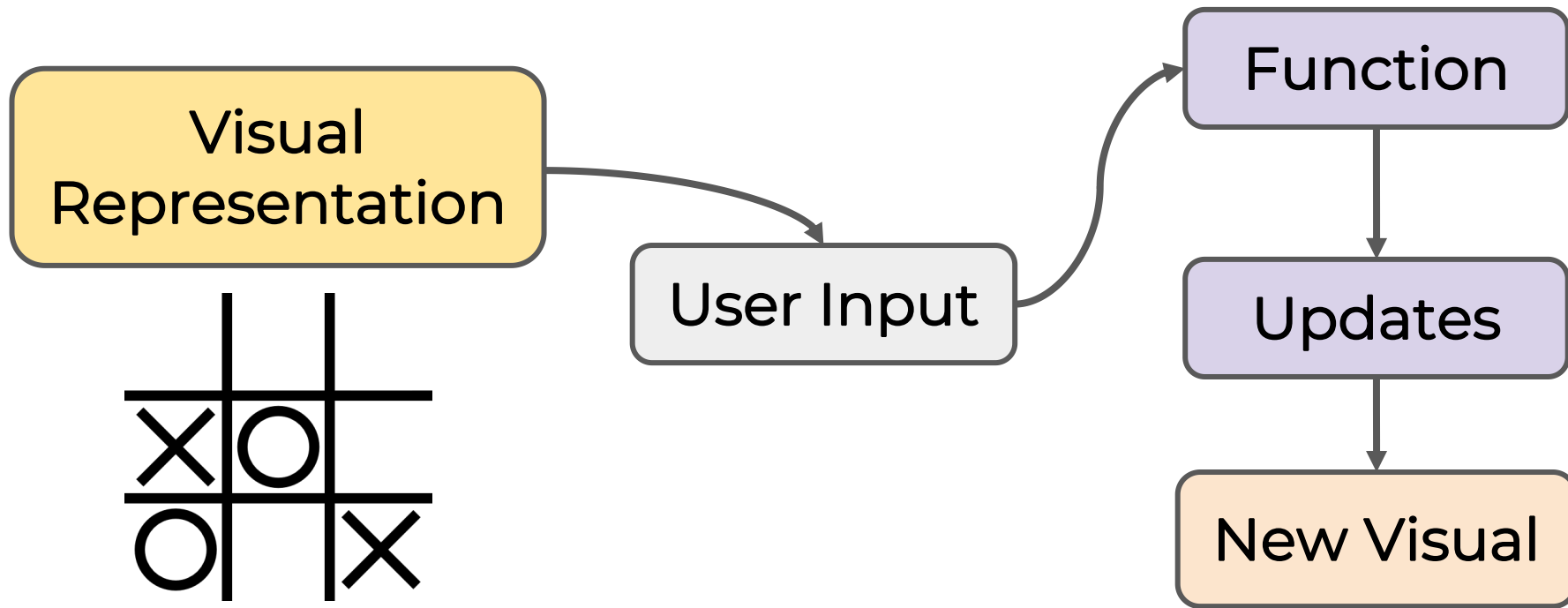


# Complete Python Bootcamp





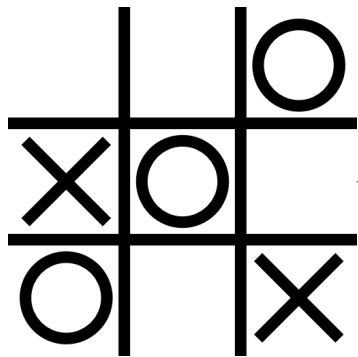
# Complete Python Bootcamp





# Complete Python Bootcamp

Updated Visual Representation



User Input

Function

Updates

New Visual



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- Most programs that are interactive work on this very simple idea.
  - Display something visual to the user
  - Let the user update through an interaction
  - Update variables in the program
  - Display updated visual



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- In the next series of short lectures, we will guide you through examples of how to perform these tasks with Python.
- Keep in mind, there are many different ways of performing the same task, so don't feel restricted by the examples we show here.



# Displaying Information



# Accepting User Input



# Validating User Input





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- We've seen how to use `input()` to interact with a user and how to convert the string data type into another type, such as an integer.
- Let's now explore how to further validate user input to avoid errors for invalid conversions.



# Simple User Interaction



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- To put everything together, let's create a simple interactive program.
- The program will
  - Display a list
  - Have a user choose an index position and an input value
  - Replace value at index position with user's chosen input value



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- Let's see what the finished game looks like, and then construct it ourselves using the functions we've already made!



# Milestone Project 1 Overview



# Complete Python Bootcamp

- By now you should have gone through the “warm-up” project, covering:
  - Displaying Information
  - Accepting and Validating Input
  - Simple User Interactions



# Complete Python Bootcamp

- You now know enough to create a real program!
- For your first milestone project you will create a Tic Tac Toe game for 2 human players.
- Let's describe what the game will be like...



# Complete Python Bootcamp

- 2 players should be able to play the game (both sitting at the same computer)
- The board should be printed out every time a player makes a move
- You should be able to accept input of the player position and then place a symbol on the board





# Complete Python Bootcamp

We will use the “numpad” to match numbers to the grid on a tic tac toe board:





# Complete Python Bootcamp

We will use the “numpad” to match numbers to the grid on a tic tac toe board:

7	8	9
4	5	6
1	2	3



# Complete Python Bootcamp

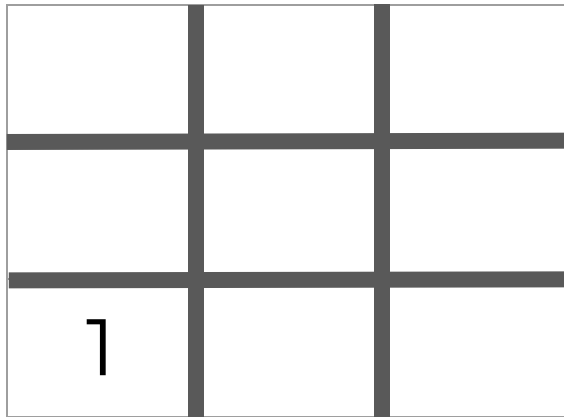
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# Complete Python Bootcamp

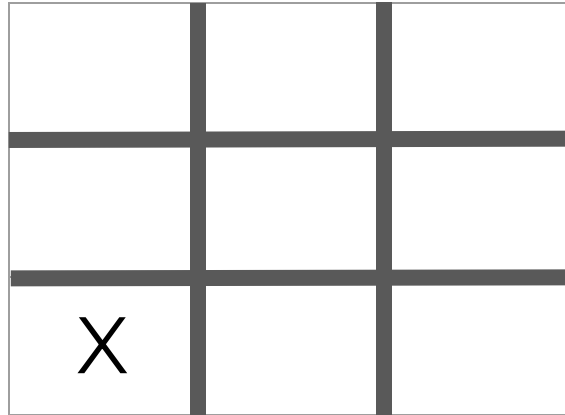
We will use the “numpad” to match numbers to the grid on a tic tac toe board:





# Complete Python Bootcamp

We will use the “numpad” to match numbers to the grid on a tic tac toe board:





# Complete Python Bootcamp

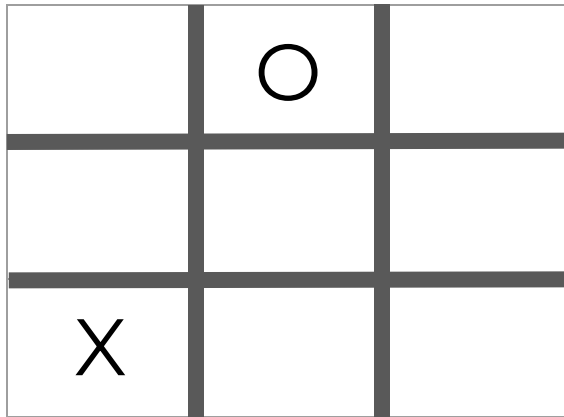
We will use the “numpad” to match numbers to the grid on a tic tac toe board:

	8	
X		



# Complete Python Bootcamp

We will use the “numpad” to match numbers to the grid on a tic tac toe board:





# Complete Python Bootcamp

- Creating your first full program is always a big leap, but you will come out the other end a much better programmer!
- We've set up a walkthrough notebook for you to help guide you along with the functions you will need to create.





# Complete Python Bootcamp

- Let's explore what the game will look like once it is done
- We'll also cover a few useful functions and go through the walkthrough notebook.
- Let's get started!



# Milestone Project 1

## Solutions for Workbook