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!

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- 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

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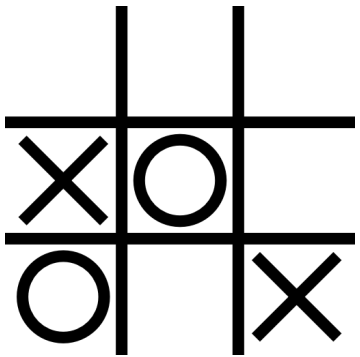
Visual Representation

Visual Representation



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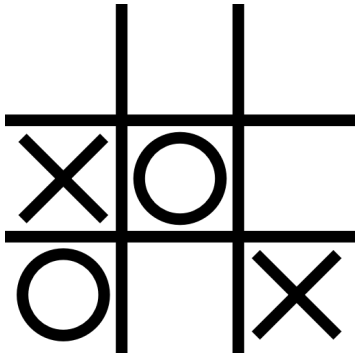
Visual Representation

User Input



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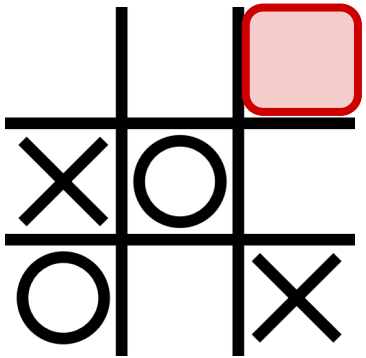
Visual Representation

User Input



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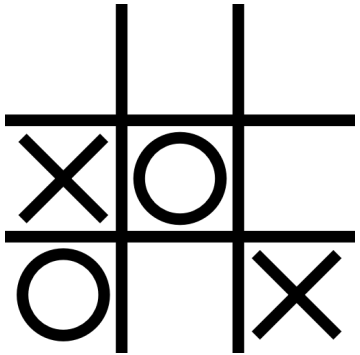
Visual Representation

User Input

Function



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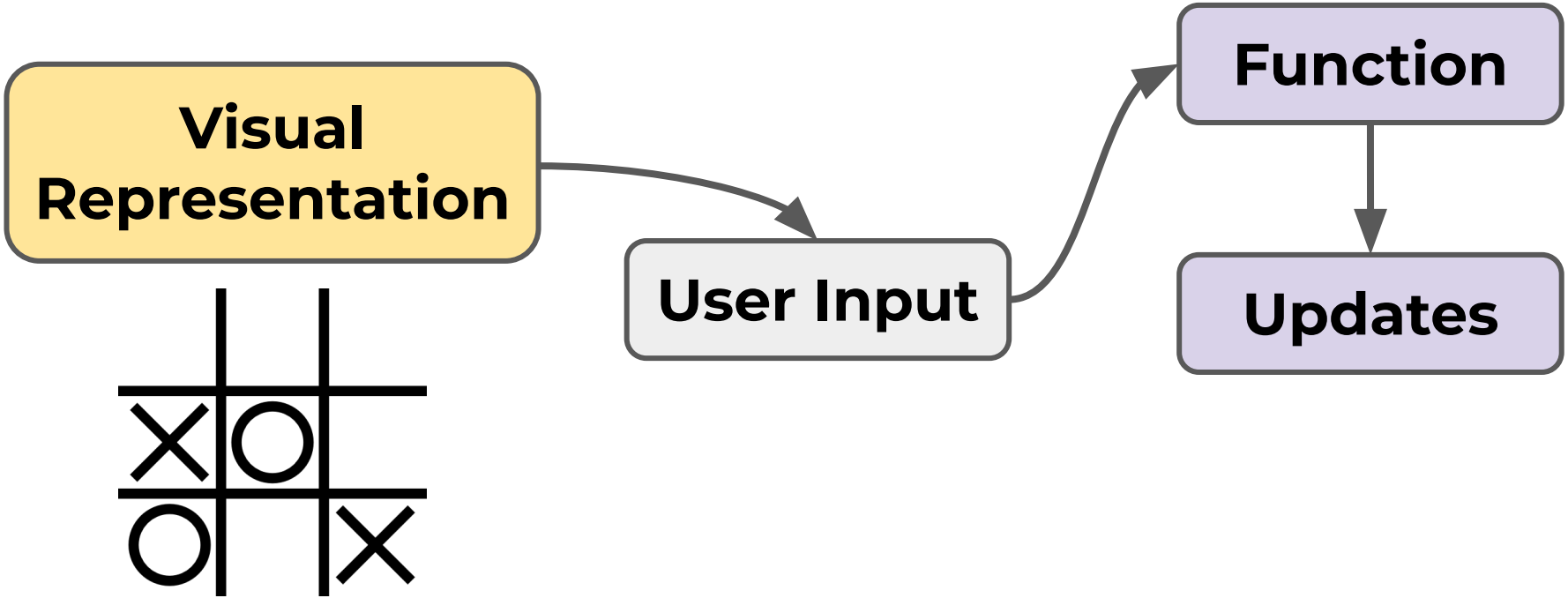

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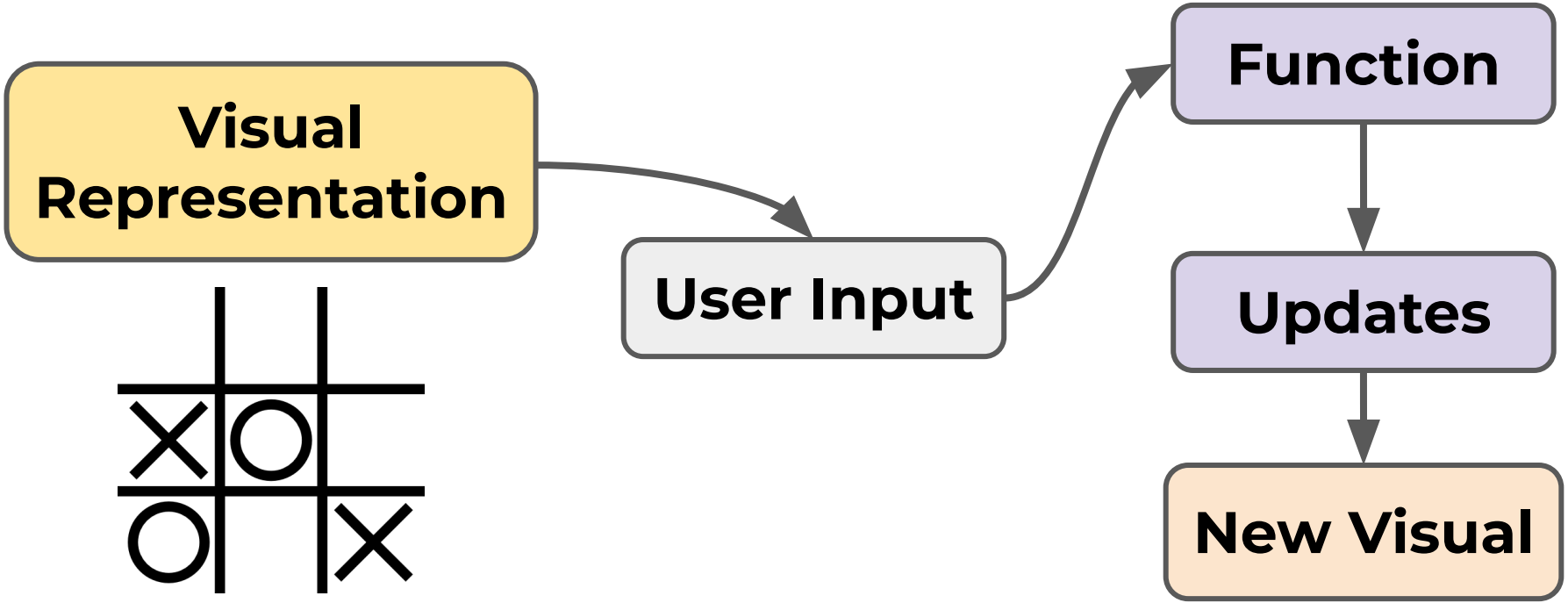

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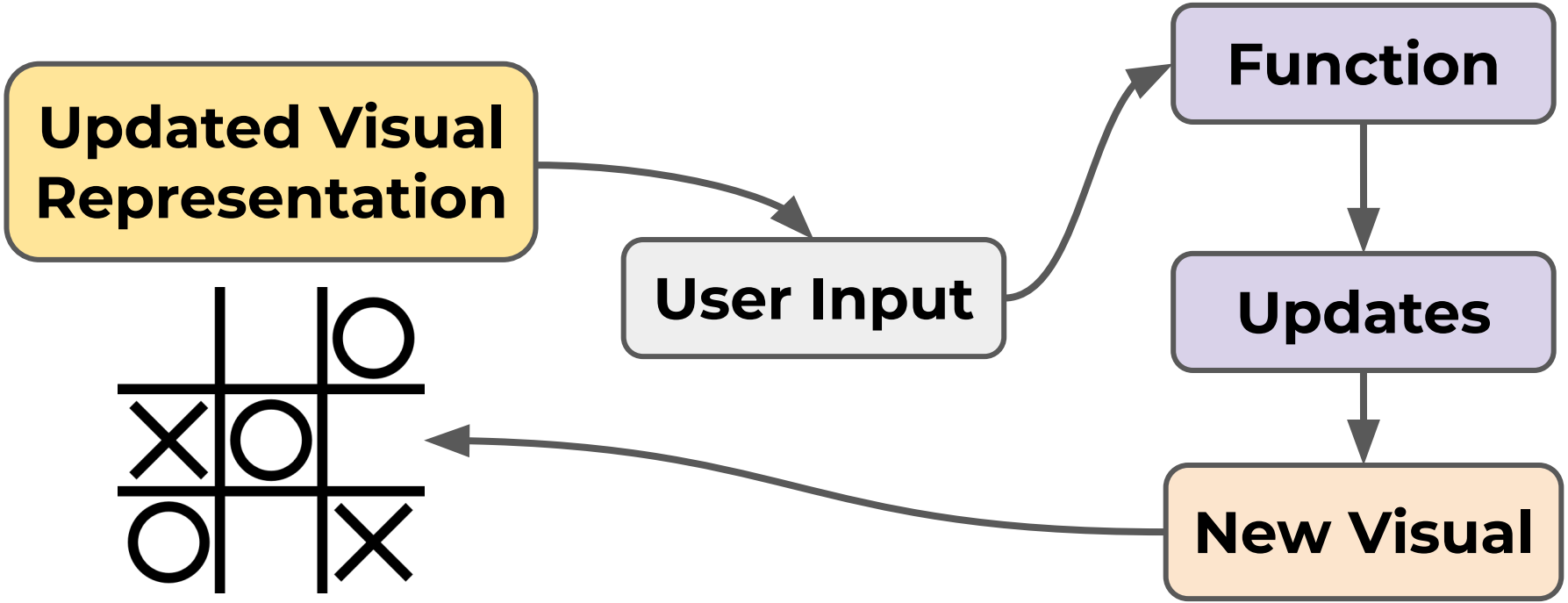

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- Most programs that are interactive work on this very simple idea.
    - Display something visual to the user
    - Let the user update through an interaction
    - Update variables in the program
    - Display updated visual

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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

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

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- 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...

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- 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

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

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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

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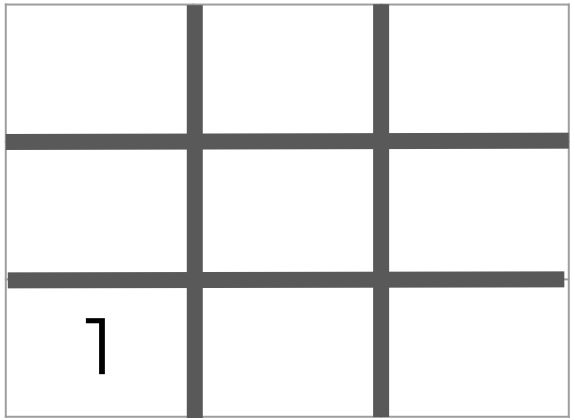

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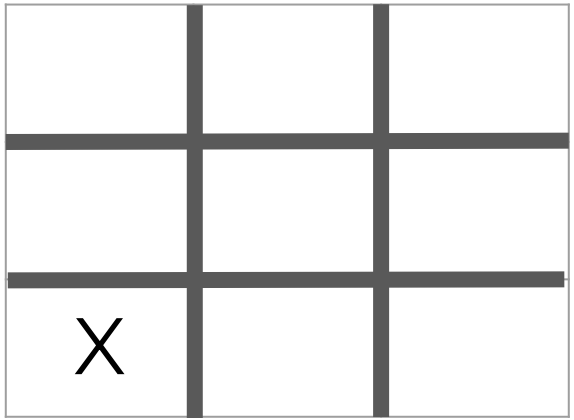

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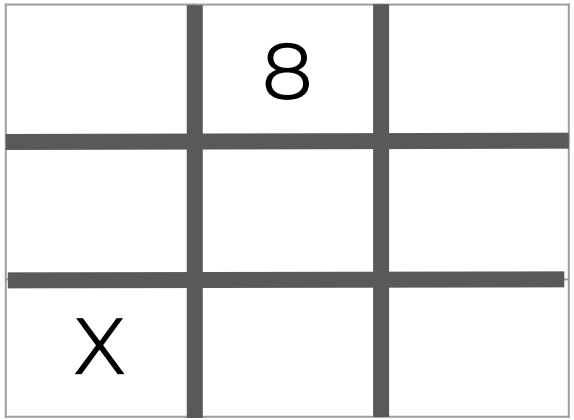

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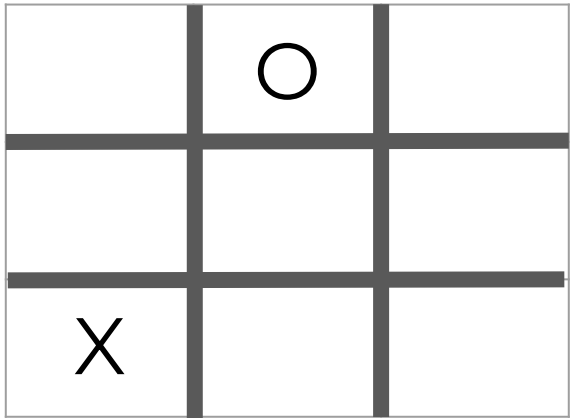

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- Creating your first full program is always a big leap, but you will come out the other end a much better programmer!
- We've set up a walkthrough notebook for you to help guide you along with the functions you will need to create.

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- 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

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