

Name: \_\_\_\_\_ Section: 1 2 3 4

Use this quiz to help make sure you understand the videos/reading. **Answer all questions.** Make additional notes as desired. **Not sure of an answer?** Ask your instructor to explain in class and revise as needed then.

Throughout, where you are asked to “circle your choice”, you can circle or underline it (whichever you prefer).

**Video: Tkinter, Part 1** [7:16 minutes]

1. Consider the code snippet shown to the right. When *main* runs:

```
def main():  
    window = tkinter.Tk()  
    window.mainloop()
```

- a. About how much time will the program take to complete the execution of the **first** of the two lines inside *main*, that is, the statement `window = tkinter.Tk()` ? (circle your choice)
- Less than 5 seconds
  - More than 5 seconds but less than a minute
  - More than a minute but less than an hour
  - More than an hour
  - As long as it takes the user to interact as desired with the window that appears and then close that window.
- b. About how much time will the program take to complete the execution of the **second** of the two lines inside *main*, that is, the statement `window.mainloop()` ? (circle your choice)
- Less than 5 seconds
  - More than 5 seconds but less than a minute
  - More than a minute but less than an hour
  - More than an hour
  - As long as it takes the user to interact as desired with the window that appears and then close that window.

2. Consider the code snippet to the right. If we commented out the two lines that invoke the *grid* method, what would be different when we run the revised code?

```
def main():  
    window = tkinter.Tk()  
  
    frame = ttk.Frame(window)  
    frame.grid()  
  
    button = ttk.Button(frame, text='Hello')  
    button.grid()  
  
    window.mainloop()
```

3. Implement the following function, per its specification. **Just a rough attempt is good enough! Do not spend more than 5 minutes on this problem.**

```
def show_ok_button_on_frame(window):  
    """  
    Displays a ttk.Frame on the given window (tkinter.Tk object).  
    On that frame, displays a ttk.Button that has 'OK' on it.  
    Precondition: The argument is a tkinter.Tk object.  
    """
```

4. Implement the following function, per its specification, assuming that the robot has a `stop` method. **Just a rough attempt is good enough! Do not spend more than 5 minutes on this problem.**

```
def stop_robot_when_button_pressed(button, robot):  
    """  
    Ensures that whenever the user presses the given tk.Button,  
    the program makes the given robot stop.  
    Preconditions: The first argument is a tk.Button  
                  and the second argument is a robot.  
    """
```