


Review Kahoots for Unit 3

Use this pic for Mission 6 Review questions 1-4:



LOCAL VARIABLES		
detected	[True, True, False, False, True]	<list>
n_sens	1	<int>
thresh	2500	<int>
val	1620	<int>

Mission 6 - Line Follower	
What is the value of detected[2]?	<ul style="list-style-type: none"> <li>a) True</li> <li><b>b) False</b></li> <li>c) 0</li> <li>d) 1</li> </ul>
What is the value of detected[n_sens]	<ul style="list-style-type: none"> <li><b>a) True</b></li> <li>b) False</li> <li>c) 0</li> <li>d) 1</li> </ul>
What is the final value of n_sens? <pre>n_sens = 0 while n_sens &lt; 5:     val = ls.read(count)     detected[count] = val &gt; thresh     n_sens = n_sens + 1 return detected</pre>	<ul style="list-style-type: none"> <li>a) 4</li> <li><b>b) 5</b></li> <li>c) [True, True, False, False, True]</li> <li>d) True</li> </ul>
For n_sens, val < thresh returns True. What type of line is it detecting?	<ul style="list-style-type: none"> <li><b>a) White line on dark ground</b></li> <li>b) Black line on light ground</li> <li>c) Not enough information</li> <li>d) Could be either one</li> </ul>
If the 'bot's sensors 1 and 2 are detecting a line, what is the value of "detected"?	<ul style="list-style-type: none"> <li>a) detected = [False, False, False, False, False]</li> <li>b) detected = [True, True, True, True, True]</li> <li><b>c) detected = [False, True, True, False, False]</b></li> <li>d) detected = [True, False, False, True, True]</li> </ul>
What is the data type: x = 5	<ul style="list-style-type: none"> <li><b>a) int</b></li> <li>b) float</li> <li>c) list</li> <li>d) tuple</li> </ul>
What is the data type: x = (0, 1, 1, 0, 0)	<ul style="list-style-type: none"> <li>a) int</li> <li>b) float</li> <li>c) list</li> <li><b>d) tuple</b></li> </ul>

<p>What is the data type: x = [True, True, True, False, False]</p>	<p>a) int b) float c) list d) tuple</p>
<p>What is the data type: x = 1.245</p>	<p>a) int b) float c) list d) tuple</p>
<p>What code accesses a single value from a list or tuple?</p>	<p>a) vals b) vals = (0, 1, 1, 0, 0) c) vals[3] d) vals(3)</p>
<p>What will be printed on the console?</p> <pre>vals = (1, 1, 1, 0, 0) if vals[1] or vals[2]:     print("detected") else:     print("not detected")</pre>	<p>a) An error occurs b) detected c) not detected d) detected followed by not detected</p>
<p>What does the highlighted code do?</p> <pre>vals = ls.check(thresh, is_reflective) leds.ls(vals)</pre>	<p>a) Uses the tuple "vals" to turn on or off line sensor LEDS b) Turns on the one LED at index "vals" c) Assigns a True value to "vals" for each LED that is currently on d) Causes an error</p>
<p>What is the value of x?</p> <pre>speeds = (45, -22, 87, 12.75) x = speeds[2]</pre>	<p>a) 45 b) -22 c) 87 d) 12.75</p>
<p>What is the value of x?</p> <pre>speeds = (45, -22, 87, 12.75) x = abs(speeds[1])</pre>	<p>a) 45 b) 22 c) -45 d) -22</p>
<p>What is the value of x?</p> <pre>speeds = (45, -22, 87, 12.75) x = round(speeds[3])</pre>	<p>a) 87 b) 12.75 c) 12 d) 13</p>

### Mission 7 - Hot Pursuit

<p>What is returned by the function prox.detect()</p>	<p>a) Either True or False b) A tuple of two Boolean values c) A tuple of 0 and 1 d) An integer between 0 and 4095</p>
<p>LEFT is assigned what value?</p>	<p>a) True b) 0 c) 1</p>

	d) False
What are the settings of the “power” parameter of prox.detect()?	<ul style="list-style-type: none"> <li>a) 1-8</li> <li>b) 0-7</li> <li>c) 1-100</li> <li>d) True or False</li> </ul>
What are the settings of the “threshold” parameter of prox.detect()?	<ul style="list-style-type: none"> <li>a) 1-8</li> <li>b) 0-7</li> <li>c) 1-100</li> <li>d) True or False</li> </ul>
What is the purpose of prox.range()?	<ul style="list-style-type: none"> <li>a) Determine if an object is in front of the ‘bot</li> <li>b) Move the ‘bot a specified distance</li> <li>c) Determine the lowest power needed to detect a reflection</li> <li>d) Determine the lowest threshold where a reflection is detected</li> </ul>
What does prox.range() return?	<ul style="list-style-type: none"> <li>a) A tuple with the values True or False</li> <li>b) A tuple with two integers, up to 100</li> <li>c) True or False</li> <li>d) The best range for both sensors</li> </ul>
If prox.range() doesn’t detect any reflection, what does it return?	<ul style="list-style-type: none"> <li>a) False</li> <li>b) 0</li> <li>c) (-1, -1)</li> <li>d) (False, False)</li> </ul>
What is the final value of det? <pre> det = 75 sensed[RIGHT] = 50 if sensed[RIGHT] &gt; 0:     det = min(det, sensed[RIGHT]) </pre>	<ul style="list-style-type: none"> <li>a) 75</li> <li>b) 50</li> <li>c) 0</li> <li>d) True</li> </ul>
What line of code is needed when updating a global variable in a function?	<ul style="list-style-type: none"> <li>a) global thresh</li> <li>b) local thresh</li> <li>c) thresh = 0</li> <li>d) update thresh</li> </ul>
What is the smallest value that can be assigned to “power”? <pre> power = 0 while power &lt; 8:     power = power + 1     cal_thresh()     if thresh &lt; 100:         break </pre>	<ul style="list-style-type: none"> <li>a) 0</li> <li>b) 1</li> <li>c) 8</li> <li>d) 100</li> </ul>
What is the highest value that can be assigned to “power”?	<ul style="list-style-type: none"> <li>a) 0</li> <li>b) 1</li> <li>c) 8</li> <li>d) 100</li> </ul>

<pre>power = 0 while power &lt; 8:     power = power + 1     cal_thresh()     if thresh &lt; 100:         break</pre>	
<p>When will the loop end?</p> <pre>power = 0 while power &lt; 8:     power = power + 1     cal_thresh()     if thresh &lt; 100:         break</pre>	<ul style="list-style-type: none"> <li>a) When power == 8</li> <li>b) When threshold &lt; 100</li> <li>c) When either power ==8 or threshold &lt; 100</li> <li>d) Won't end, infinite loop</li> </ul>
<p>What is the final value of go_motors?</p> <pre>go_motors = False go_motors = not go_motors</pre>	<ul style="list-style-type: none"> <li>a) False</li> <li>b) True</li> <li>c) No</li> <li>d) An error occurs</li> </ul>
<p>About how long does it take for the code to read prox.detect() 100 times?</p>	<ul style="list-style-type: none"> <li>a) 10 seconds</li> <li>b) 1 minute</li> <li>c) 100 seconds</li> <li>d) 1 second</li> </ul>
<p>What are the possible values for "turn_ratio"?</p>	<ul style="list-style-type: none"> <li>a) True and False</li> <li>b) 0-1</li> <li>c) All numbers between -1 and 1</li> <li>d) All numbers between 0-100</li> </ul>

### Unit 3 Vocabulary Review/Test (Missions 6-7: "The computer science definition of ...")


(A total of 15 terms introduced in the missions, use the ones you want—same terms for review/ test)

list	<ul style="list-style-type: none"> <li>a) A value that is an integer</li> <li>b) A sequence of indexed items you can change</li> <li>c) A sequence of indexed items that are immutable</li> <li>d) A value that is a decimal</li> </ul>
tuple	<ul style="list-style-type: none"> <li>a) A value that is an integer</li> <li>b) A sequence of indexed items you can change</li> <li>c) A sequence of indexed items that are immutable</li> <li>d) A value that is a decimal</li> </ul>
int	<ul style="list-style-type: none"> <li>a) A value that is an integer</li> <li>b) A sequence of indexed items you can change</li> <li>c) A sequence of indexed items that are immutable</li> <li>d) A value that is a decimal</li> </ul>

float	<ul style="list-style-type: none"> <li>a) A value that is an integer</li> <li>b) A sequence of indexed items you can change</li> <li>c) A sequence of indexed items that are immutable</li> <li>d) A value that is a decimal</li> </ul>
or	<ul style="list-style-type: none"> <li>a) A logical operator that inverts the Boolean operand</li> <li>b) Evaluates to True only if both conditions are True</li> <li>c) Evaluates to True if one or both conditions are True</li> <li>d) A named chunk of code that accomplishes a task</li> </ul>
not	<ul style="list-style-type: none"> <li>a) A logical operator that inverts the Boolean operand</li> <li>b) Evaluates to True only if both conditions are True</li> <li>c) Evaluates to True if one or both conditions are True</li> <li>d) A named chunk of code that accomplishes a task</li> </ul>
function	<ul style="list-style-type: none"> <li>a) A logical operator that inverts the Boolean operand</li> <li>b) Evaluates to True only if both conditions are True</li> <li>c) Evaluates to True if one or both conditions are True</li> <li>d) A named chunk of code that accomplishes a task</li> </ul>
Hard coded values	<ul style="list-style-type: none"> <li>a) Specific numbers used in code that should be constants</li> <li>b) Variables defined inside a function</li> <li>c) Variables defined outside a function in the main program</li> <li>d) A list of variables declared in a function definition that receive values</li> </ul>
parameters	<ul style="list-style-type: none"> <li>a) Specific numbers used in code that should be constants</li> <li>b) Variables defined inside a function</li> <li>c) Variables defined outside a function in the main program</li> <li>d) A list of variables declared in a function definition that receive values</li> </ul>
globals	<ul style="list-style-type: none"> <li>a) Specific numbers used in code that should be constants</li> <li>b) Variables defined inside a function</li> <li>c) Variables defined outside a function in the main program</li> <li>d) A list of variables declared in a function definition that receive values</li> </ul>
locals	<ul style="list-style-type: none"> <li>a) Specific numbers used in code that should be constants</li> <li>b) Variables defined inside a function</li> <li>c) Variables defined outside a function in the main program</li> <li>d) A list of variables declared in a function definition that receive values</li> </ul>
auto-calibrate	<ul style="list-style-type: none"> <li>a) The brightness of CodeBot's IR flashlight</li> <li>b) Set the sensors to adapt to their environment by setting parameters</li> <li>c) How much light is needed to detect an object (from 1 to 100)</li> <li>d) Infrared sensors that can detect nearby objects based on reflected light</li> </ul>
Proximity sensors	<ul style="list-style-type: none"> <li>a) The brightness of CodeBot's IR flashlight</li> <li>b) Set the sensors to adapt to its environment by setting parameters</li> <li>c) How much light is needed to detect an object (from 1 to 100)</li> <li>d) Infrared sensors that can detect nearby objects based on reflected light</li> </ul>
Detection sensitivity	<ul style="list-style-type: none"> <li>a) The brightness of CodeBot's IR flashlight</li> <li>b) Set the sensors to adapt to its environment by setting parameters</li> <li>c) How much light is needed for to detect an object (from 1 to 100)</li> <li>d) Infrared sensors that detect nearby objects from reflected light</li> </ul>

Emitter power level	<ul style="list-style-type: none"> <li>a) The brightness of CodeBot's IR flashlight</li> <li>b) Set the sensors to adapt to its environment by setting parameters</li> <li>c) How much light is needed for to detect an object (from 1 to 100)</li> <li>d) Infrared sensors that can detect nearby objects based on reflected light</li> </ul>
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Use this pic for Mission 6 Review question 1:




LOCAL VARIABLES		
detected	[True, True, False, False, True]	<list>
n_sens	1	<int>
thresh	2500	<int>
val	1620	<int>

Unit 3 Concepts and Coding Kahoot Review (Missions 6, 7) / (questions from 2 review kahoots)	
What is the value of detected[2]?	<ul style="list-style-type: none"> <li>a) True</li> <li>b) False</li> <li>c) 0</li> <li>d) 1</li> </ul>
What is the final value of n_sens? <pre> n_sens = 0 while n_sens &lt; 5:     val = ls.read(count)     detected[count] = val &gt; thresh     n_sens = n_sens + 1 return detected           </pre>	<ul style="list-style-type: none"> <li>a) 4</li> <li>b) 5</li> <li>c) [True, True, False, False, True]</li> <li>d) True</li> </ul>
If the 'bot's sensors 1 and 2 are detecting a line, what is the value of "detected"?	<ul style="list-style-type: none"> <li>a) detected = [False, False, False, False, False]</li> <li>b) detected = [True, True, True, True, True]</li> <li>c) detected = [False, True, True, False, False]</li> <li>d) detected = [True, False, False, True, True]</li> </ul>
What is the data type: x = 5	<ul style="list-style-type: none"> <li>a) int</li> <li>b) float</li> <li>c) list</li> <li>d) tuple</li> </ul>
What is the data type: x = (0, 1, 1, 0, 0)	<ul style="list-style-type: none"> <li>e) int</li> <li>f) float</li> <li>g) list</li> <li>h) tuple</li> </ul>
What is the data type: x = [True, True, True, False, False]	<ul style="list-style-type: none"> <li>a) int</li> <li>b) float</li> <li>c) list</li> <li>d) tuple</li> </ul>
What is the data type:	<ul style="list-style-type: none"> <li>e) int</li> </ul>

<p>x = 1.245</p>	<p>f) float g) list h) tuple</p>
<p>What code accesses a single value from a list or tuple?</p>	<p>a) vals b) vals = (0, 1, 1, 0, 0) c) vals[3] d) vals(3)</p>
<p>What will be printed on the console?</p> <pre>vals = (1, 1, 1, 0, 0) if vals[1] or vals[2]:     print("detected") else:     print("not detected")</pre>	<p>a) An error occurs b) detected c) not detected d) detected followed by not detected</p>
<p>What does the highlighted code do?</p> <pre>vals = ls.check(thresh, is_reflective) leds.ls(vals)</pre>	<p>a) Uses the tuple "vals" to turn on or off line sensor LEDS b) Turns on the one LED at index "vals" c) Assigns a True value to "vals" for each LED that is currently on d) Causes an error</p>
<p>What is the value of x?</p> <pre>speeds = (45, -22, 87, 12.75) x = speeds[2]</pre>	<p>a) 45 b) -22 c) 87 d) 12.75</p>
<p>What is the value of x?</p> <pre>speeds = (45, -22, 87, 12.75) x = abs(speeds[1])</pre>	<p>a) 45 b) 22 c) -45 d) -22</p>
<p>What is the value of x?</p> <pre>speeds = (45, -22, 87, 12.75) x = round(speeds[3])</pre>	<p>a) 87 b) 12.75 c) 12 d) 13</p>
<p>What is returned by the function prox.detect()</p>	<p>a) Either True or False b) A tuple of two Boolean values c) A tuple of 0 and 1 d) An integer between 0 and 4095</p>
<p>LEFT is assigned what value?</p>	<p>a) True b) 0 c) 1 d) False</p>
<p>What is the purpose of prox.range()?</p>	<p>a) Determine if an object is in front of the 'bot b) Move the 'bot a specified distance c) Determine the lowest power needed to detect a reflection d) Determine the lowest threshold to detect a reflection</p>
<p>What is the final value of det?</p>	<p>a) 75 b) 50</p>

<pre>det = 75 sensed[RIGHT] = 50 if sensed[RIGHT] &gt; 0:     det = min(det, sensed[RIGHT])</pre>	<p>c) 0 d) True</p>
<p>What line of code is needed when updating a global variable in a function?</p>	<p>a) global thresh b) local thresh c) thresh = 0 d) update thresh</p>
<p>What is the highest value that can be assigned to "power"?</p> <pre>power = 0 while power &lt; 8:     power = power + 1     cal_thresh()     if thresh &lt; 100:         break</pre>	<p>a) 0 b) 1 c) 8 d) 100</p>
<p>What is the final value of go_motors?</p> <pre>go_motors = False go_motors = not go_motors</pre>	<p>a) False b) True c) No d) An error occurs</p>

Use this pic for Unit 3 Concepts and Coding Test Question 1:



LOCAL VARIABLES		
	Index: 0 1 2 3 4	
detected	[True, True, False, False, True]	<list>
n_sens	1	<int>
thresh	2500	<int>
val	1620	<int>

Unit 3 Concepts and Coding Test (Missions 6, 7) / (review questions with modifications)	
<p>What is the value of detected[1]</p>	<p>a) True b) False c) 0 d) 1</p>
<p>What is the final value of n_count?</p> <pre>n_count = 0 while n_count &lt; 8:     n_count = n_count + 1     leds.user_num(n_count, True)</pre>	<p>a) 0 b) 1 c) 7 d) 8</p>



<p>If the 'bots sensors 2 and 3 are detecting a line, what is the value of "detected"?</p> <pre>n_count = 0 while n_count &lt; 5:     val = ls.read(n_count)     detected[n_count] = val &gt; thresh     n_count = n_count + 1 return detected</pre>	<p>a) detected = [0, 1, 2, 3, 4]  b) detected = [False, True, True, False, False]  c) detected = [False, False, True, True, False]  d) detected = [0, 0, 1, 1, 1]</p>
<p>What is the data type of: x = 0.15</p>	<p>a) int  b) float  c) list  d) tuple</p>
<p>What is the data type of: x = [0, 1, 1, 0, 0]</p>	<p>a) int  b) float  c) list  d) tuple</p>
<p>What is the data type of: x = 0</p>	<p>a) int  b) float  c) list  d) tuple</p>
<p>What is the data type of: x = (True, True)</p>	<p>a) int  b) float  c) list  d) tuple</p>
<p>What code accesses a single value from a list or tuple?</p>	<p>a) vals  b) vals(1)  c) vals[1]  d) vals = (0, 1)</p>
<p>What will be printed on the console?</p> <pre>vals = (True, False, False, False, True) if vals[1] or vals[2]:     print("detected") else:     print("not detected")</pre>	<p>a) Detected  b) Not detected  c) Detected followed by not detected  d) An error occurs</p>
<p>What does the highlighted code do?</p> <pre>vals = ls.check(thresh, is_reflective) leds.ls(vals)</pre>	<p>a) Turns on the one LED at index "vals"  b) Uses the tuple "vals" to turn on or off line sensor LEDs  c) Assigns a True value to "vals" for each LED that is on  d) Causes an error</p>
<p>What is the value of x?</p> <pre>speeds = (25, 10, -58, 14.6) x = abs(speeds[1])</pre>	<p>a) 25  b) -25  c) 10  d) -10</p>
<p>What is the value of x?</p> <pre>speeds = (25, 10, -58, 14.6) x = abs(speeds[2])</pre>	<p>a) 25  b) 10  c) 58  d) 14.6</p>

<p>What is the value of x?</p> <pre>speeds = (25, 10, -58, 14.6) x = round(speeds[3])</pre>	<p>a) 58 b) 14.6 c) 14 d) 15</p>
<p>What is returned by the function “prox.detect()”?</p>	<p>a) A tuple of 0 or 1 b) True or False c) A tuple of two Boolean values d) An integer between 0 and 4095</p>
<p>RIGHT is assigned what value?</p>	<p>a) 0 b) 1 c) True d) False</p>
<p>What is the purpose of “prox.range()”?</p>	<p>a) Determine the lowest threshold needed to detect a reflection b) Determine the lowest power needed to detect a reflection c) Determine if an object is in front of the CodeBot d) Move the CodeBot a specified distance</p>
<p>What is the final value of “det”?</p> <pre>det = 50 sensed[RIGHT] = 60 if sensed[RIGHT] &gt; 0:     det = min(det, sensed[RIGHT])</pre>	<p>a) 50 b) 60 c) 0 d) True</p>
<p>What line of code is needed when updating a global variable in a function?</p>	<p>a) local power b) global power c) power = True d) power global</p>
<p>What is the lowest value that can be assigned to “power” when the while loop ends?</p> <pre>power = 0 while power &lt; 8:     power = power + 1     cal_thres()     if thresh &lt; 100:         break</pre>	<p>a) 0 b) 1 c) 8 d) 100</p>
<p>What is the final value of “go_motors”?</p> <pre>go_motors = True go_motors = not go_motors</pre>	<p>a) True b) False c) No d) An error occurs</p>