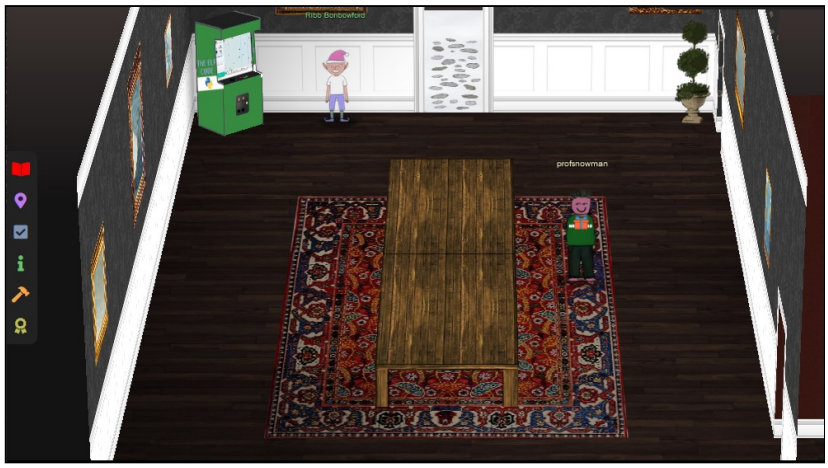
KringleCon 4: Calling Birds!

Dining Room



1. Click to talk to `Ribb Bonbowford`

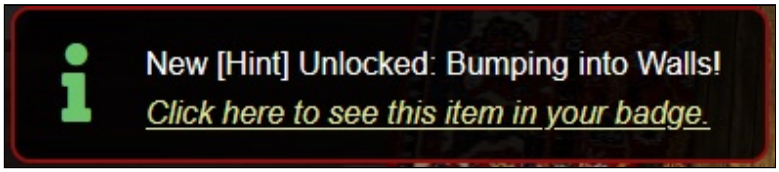
```
Hello, I'm Ribb Bonbowford. Nice to meet you!

Are you new to programming? It's a handy skill for anyone in cyber security.

This here machine lets you control an Elf using Python 3. It’s pretty fun, but I’m having trouble getting beyond Level 8.

Tell you what… if you help me get past Level 8, I’ll share some of my SQLi tips with you. You may find them handy sometime around the North Pole this season.

Most of the information you'll need is provided during the game, but I'll give you a few more pointers, if you want them.

Not sure what a lever requires? Click it in the Current Level Objectives panel.
```

2. Click to talk to `Ribb Bonbowford`

```
You can move the elf with commands like elf.moveLeft(5), elf.moveTo({"x":2,"y":2}), or elf.moveTo(lever0.position).
```

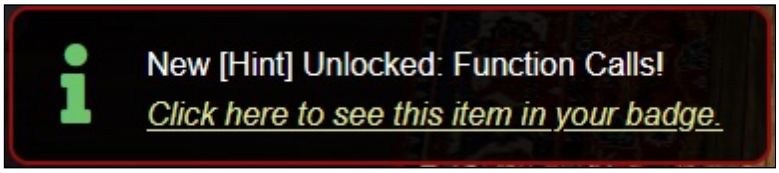
3. Click to talk to `Ribb Bonbowford`

> Looping through long movements? Don't be afraid to moveUp(99) or whatever. You elf will stop at any obstacle.



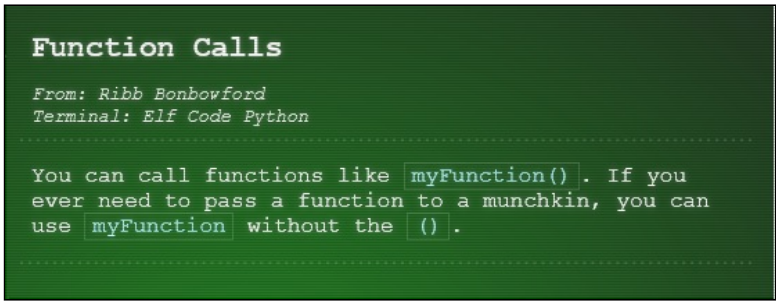
4. Click to talk to `Ribb Bonbowford`

> You can call functions like myFunction(). If you ever need to pass a function to a munchkin, you can use myFunction without the ().

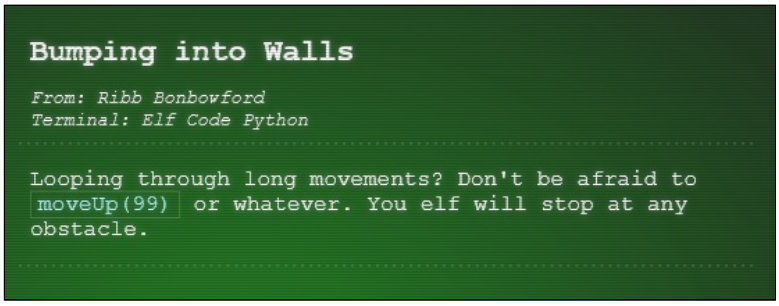


5. Click the `i` (Hints) icon

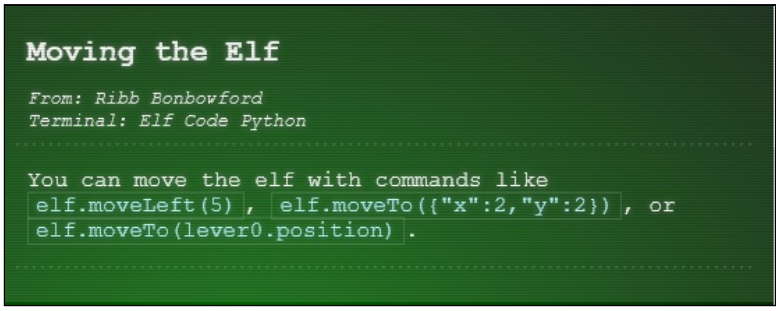
6. Click `Function Calls`



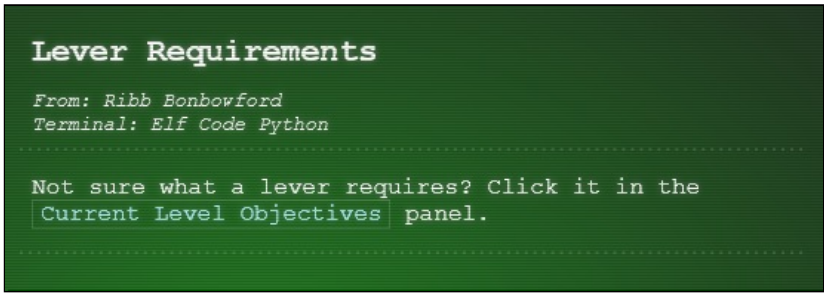
7. Click `Bumping into Walls`



8. Click `Moving the Elf`

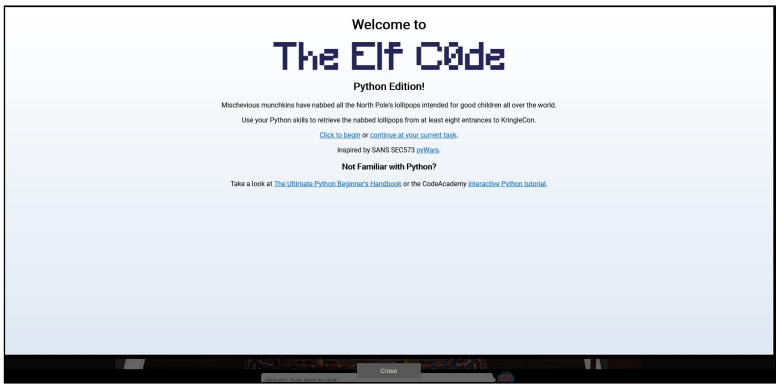


9. Click `Lever Requirements`

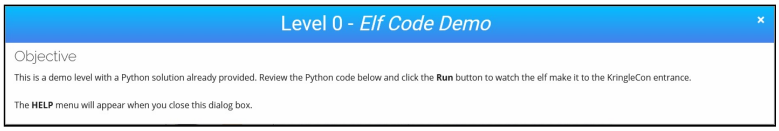


11. Click `[Exit]`

12. Click `The Elf C0de` machine

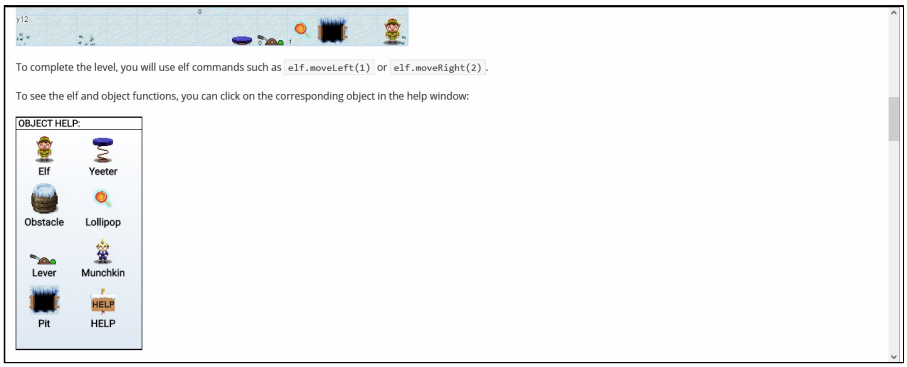


13. Click `Click to begin`

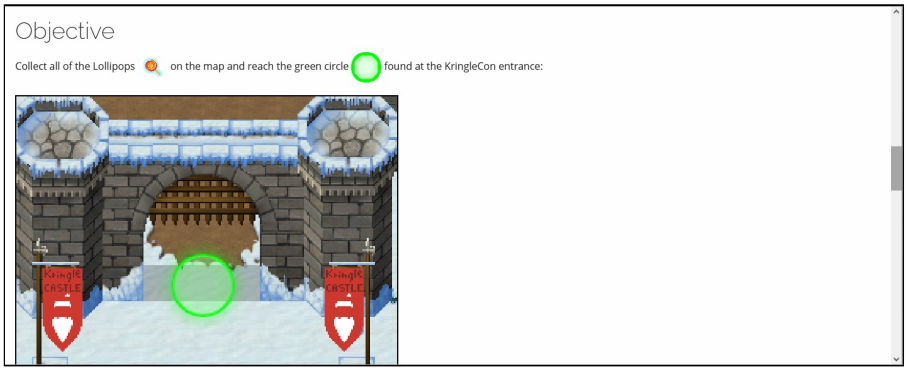


14. Close the `Level 0 - Elf Code Demo` window

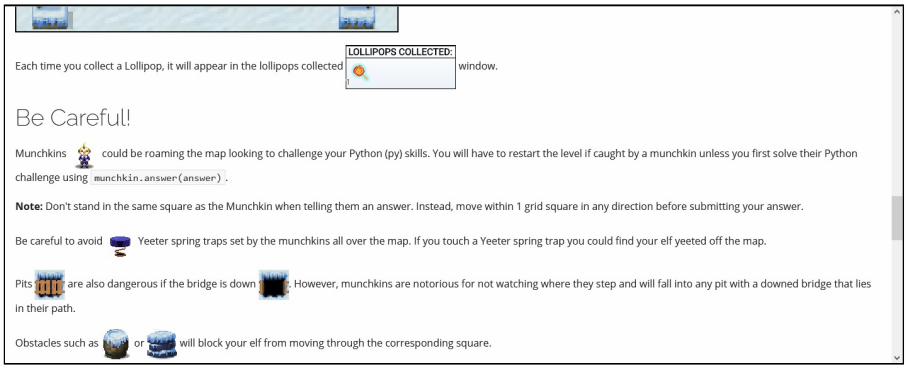
15. Scroll Down the window



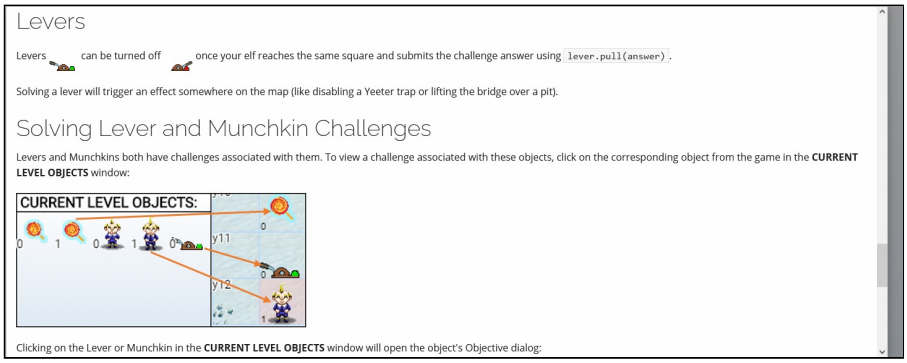
16. Scroll Down the window



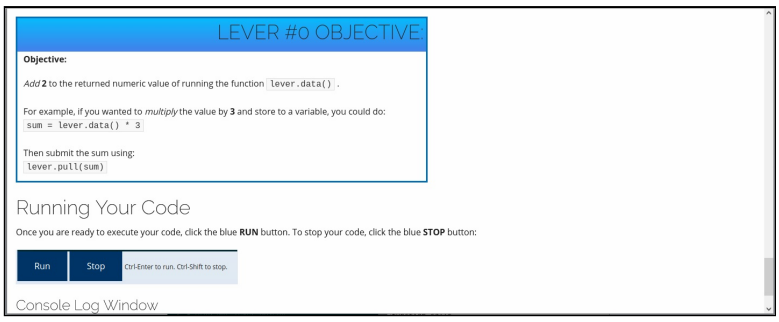
17. Scroll Down the window



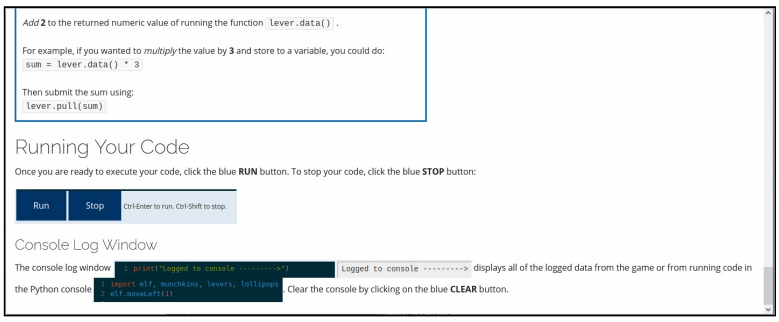
18. Scroll Down the window



19. Scroll Down the window

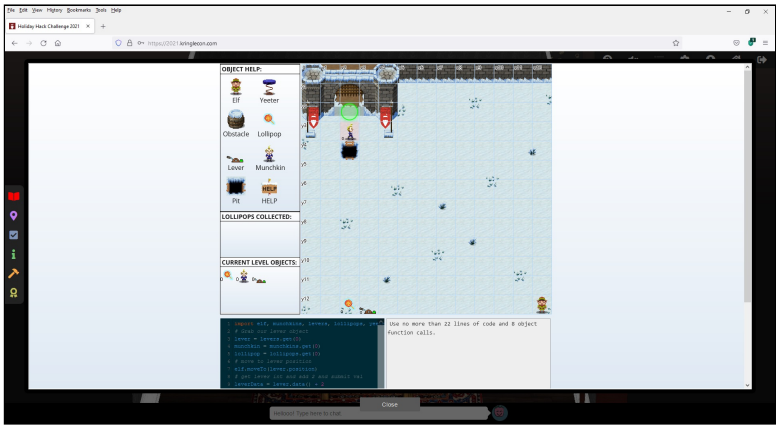


20. Scroll Down the window

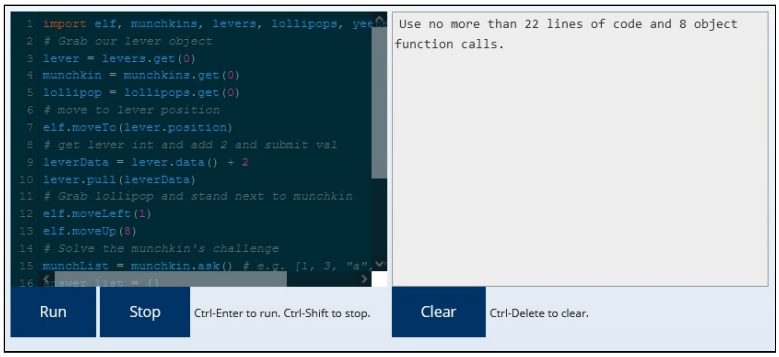


21. Scroll to the Top of the window

22. Close the The Elf C0de window

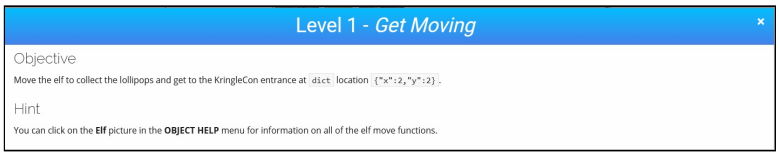


23. Scroll Down the window

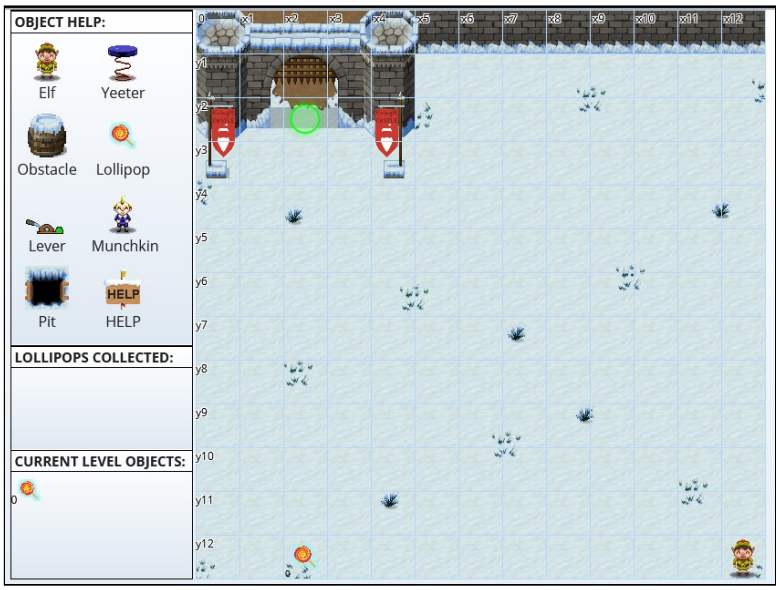


24. Scroll to the `Top` of the window and then press `CTRL + ENTER` to execute the code

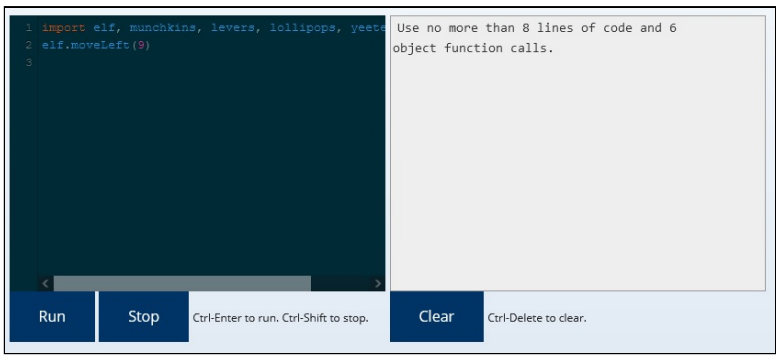
25. Click the `Sign`



26. Close the `Level 1 - Get Moving` window



27. Scroll Down the window

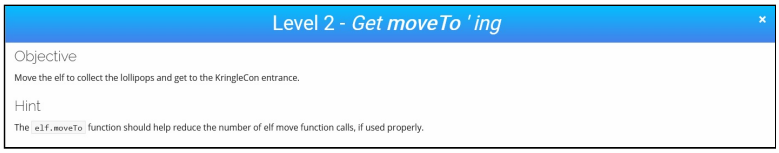


28. Modify the contents of the code window to

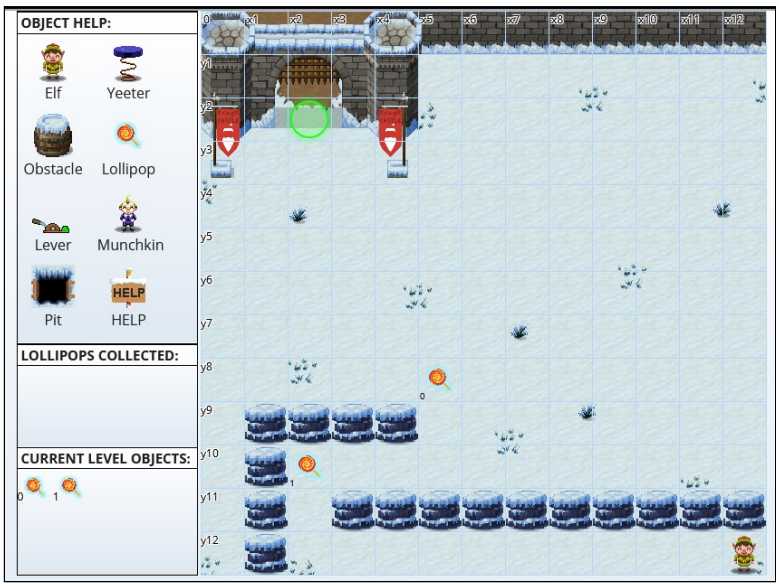
```
import elf, munchkins, levers, lollipops, yeeters, pits
elf.moveLeft(10)
elf.moveTo({"x":2,"y":2})
```

29. Scroll to the Top of the window and then press CTRL + ENTER to execute the code

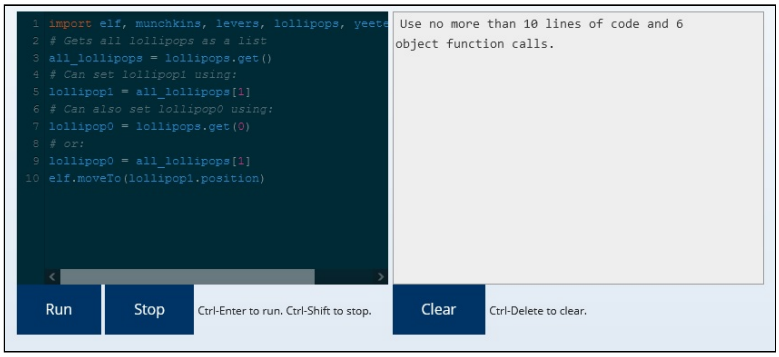
30. Click the Sign



31. Close the `Level 2 - Get moveTo ' ing` window



32. Scroll `Down` the window

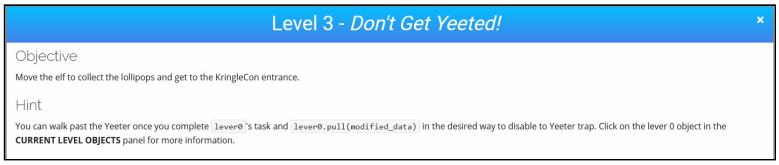


33. Modify the contents of the code window to

```
import elf, munchkins, levers, lollipops, yeeters, pits
lollipop1 = lollipops.get(1)
lollipop0 = lollipops.get(0)
elf.moveTo(lollipop1.position)
elf.moveTo(lollipop0.position)
elf.moveTo({"x":2,"y":2})
```

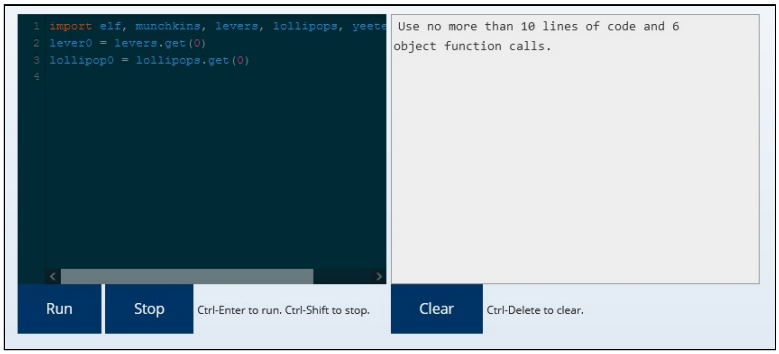
34. Scroll to the `Top` of the window and then press `CTRL + ENTER` to execute the code

35. Click the `Sign`

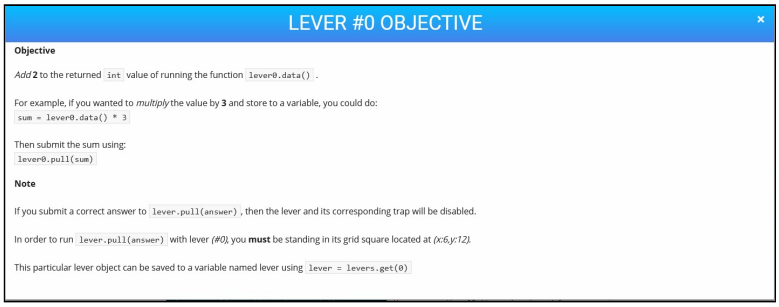


36. Close the `Level 3 - Don't Get Yeeted!` window

37. Scroll `Down` the window



38. Click `lever0`



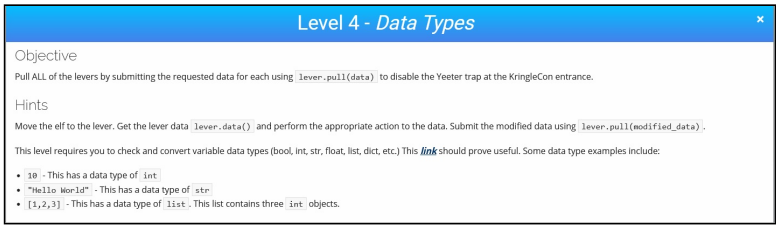
39. Close the `LEVER #0 OBJECTIVE` window

40. Modify the contents of the code window to

```
import elf, munchkins, levers, lollipops, yeeters, pits
lever0 = levers.get(0)
lollipop0 = lollipops.get(0)
elf.moveTo(lever0.position)
leverData = lever0.data() + 2
lever0.pull(leverData)
elf.moveTo(lollipop0.position)
elf.moveTo({"x":2,"y":2})
```

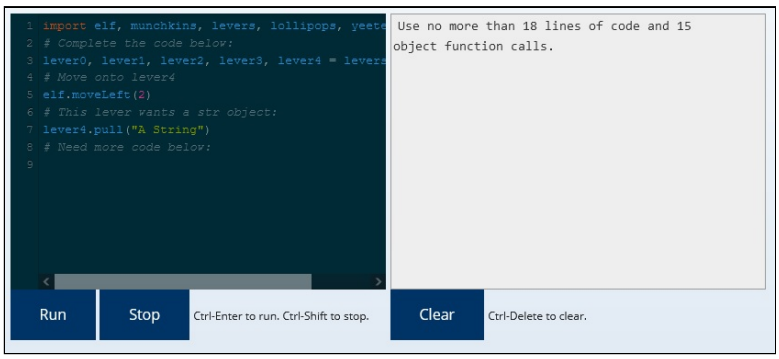
41. Scroll to the `Top` of the window and then press `CTRL + ENTER` to execute the code

42. Click the `Sign`

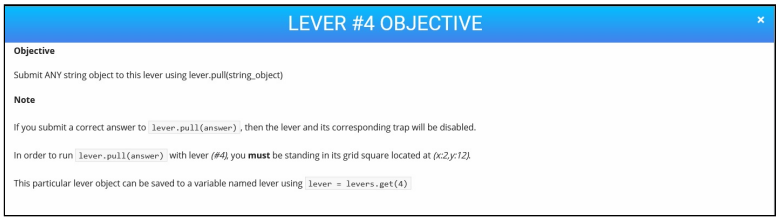


43. Close the `Level 4 - Data Types` window

44. Scroll `Down` the window

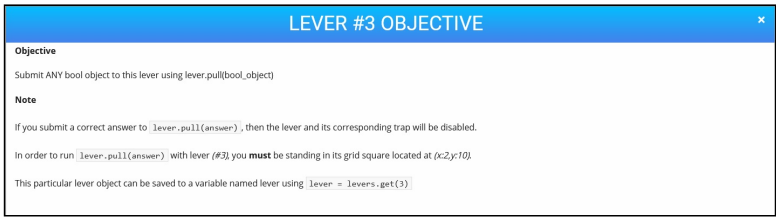


45. Click `lever4`



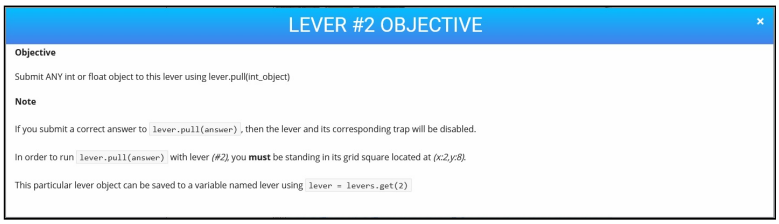
46. Close the `LEVER #4 OBJECTIVE` window

47. Click `lever3`



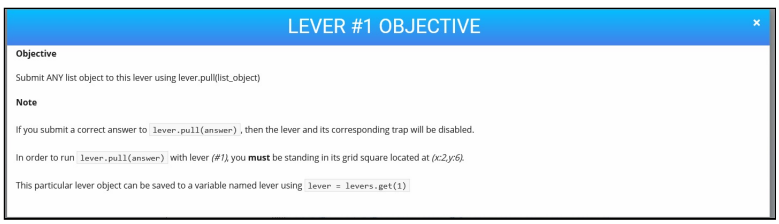
48. Close the `LEVER #3 OBJECTIVE` window

49. Click `lever2`



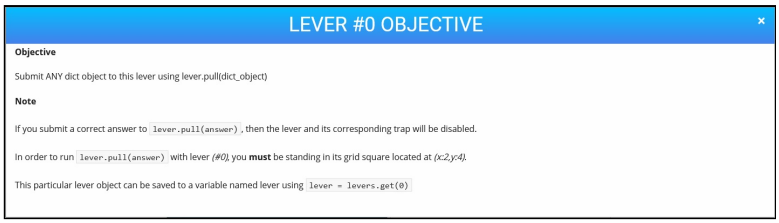
50. Close the `LEVER #2 OBJECTIVE` window

51. Click `lever1`



52. Close the `LEVER #1 OBJECTIVE` window

53. Click `lever0`



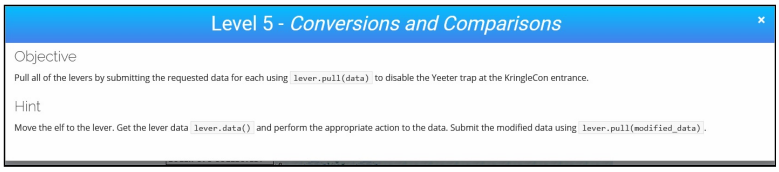
54. Close the `LEVER #0 OBJECTIVE` window

55. Modify the contents of the code window to

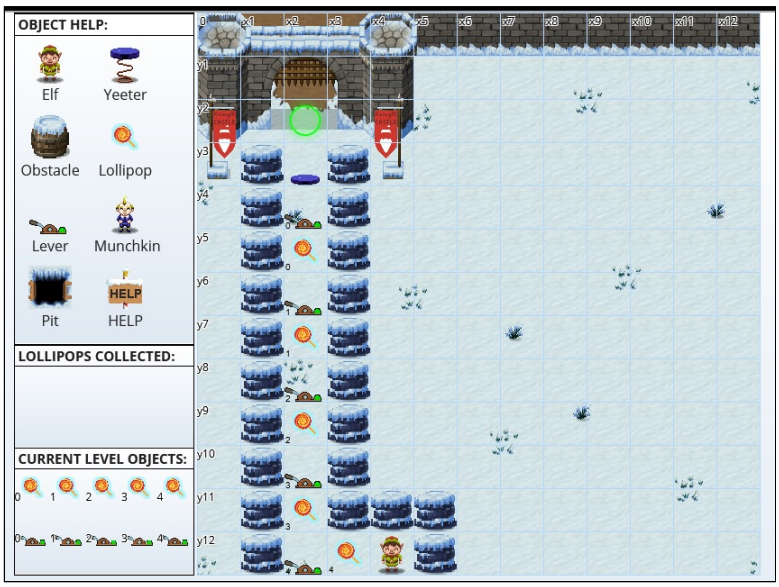
```
import elf, munchkins, levers, lollipops, yeeters, pits
lever0, lever1, lever2, lever3, lever4 = levers.get()
elf.moveLeft(2)
lever4.pull("A String")
elf.moveUp(2)
lever3.pull(True)
elf.moveUp(2)
lever2.pull(10.5)
elf.moveUp(2)
lever1.pull([1, 3, "a", "b", 4])
elf.moveUp(2)
lever0.pull({"x":2,"y":2})
elf.moveUp(2)
```

56. Scroll to the `Top` of the window and then press `CTRL + ENTER` to execute the code

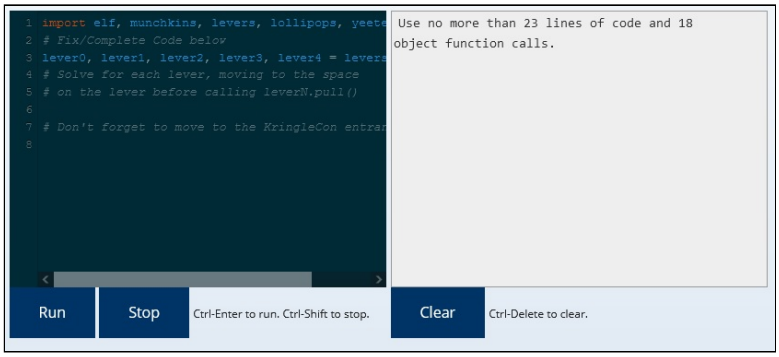
57. Click the `Sign`



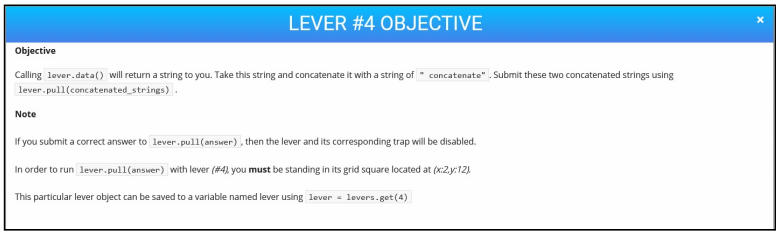
58. Close the `Level 5 - Conversions and Comparisons` window



59. Scroll `Down` the window

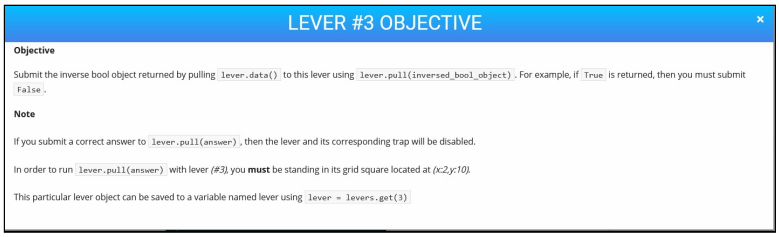


60. Click `lever4`



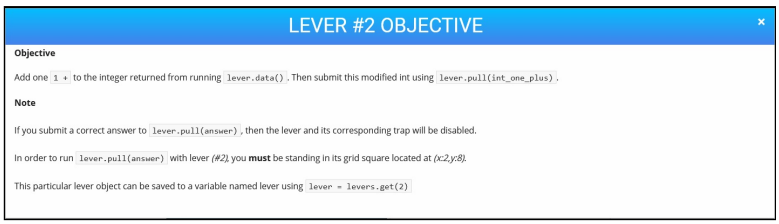
61. Close the `LEVER #4 OBJECTIVE` window

62. Click `lever3`



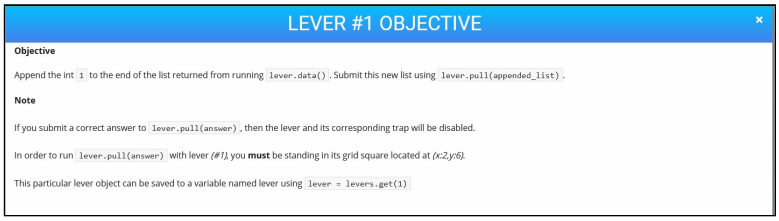
63. Close the `LEVER #3 OBJECTIVE` window

64. Click `lever2`



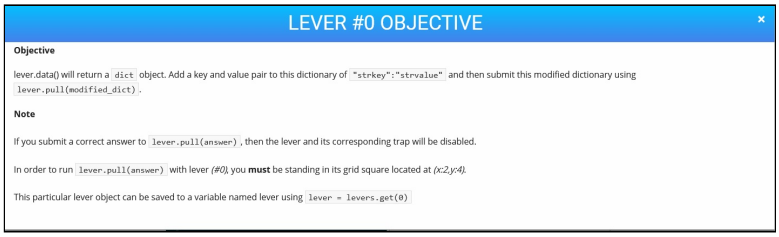
65. Close the `LEVER #2 OBJECTIVE` window

66. Click `lever1`



67. Close the `LEVER #1 OBJECTIVE` window

68. Click `lever0`



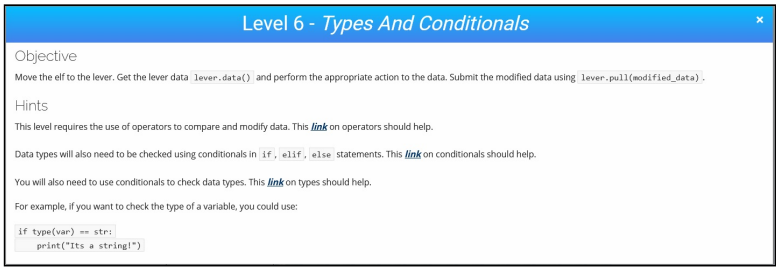
69. Close the `LEVER #0 OBJECTIVE` window

70. Modify the contents of the code window to

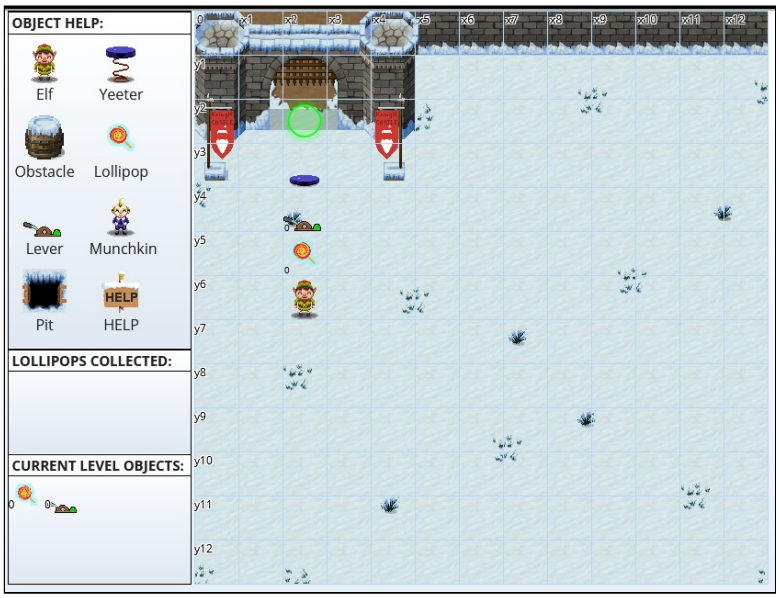
```
import elf, munchkins, levers, lollipops, yeeters, pits
lever0, lever1, lever2, lever3, lever4 = levers.get()
elf.moveLeft(2)
lever4.pull(lever4.data() + " concatenate")
elf.moveUp(2)
lever3.pull(not lever3.data())
elf.moveUp(2)
lever2.pull(lever2.data() + 1)
elf.moveUp(2)
leverData = lever1.data()
leverData.append(1)
lever1.pull(leverData)
elf.moveUp(2)
leverData = lever0.data()
leverData.update({"strkey":"strvalue"})
lever0.pull(leverData)
elf.moveUp(2)
```

71. Scroll to the `Top` of the window and then press `CTRL + ENTER` to execute the code

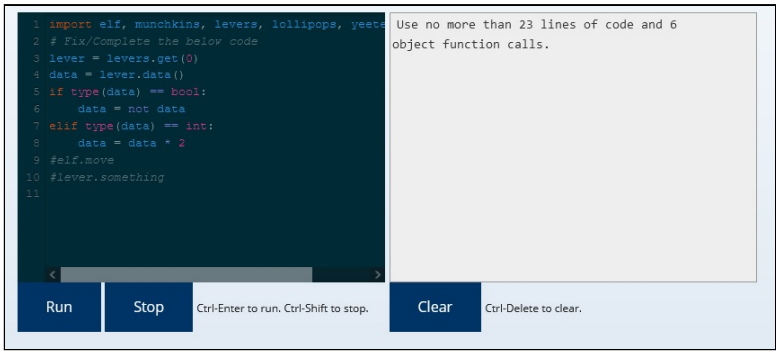
72. Click the `Sign`



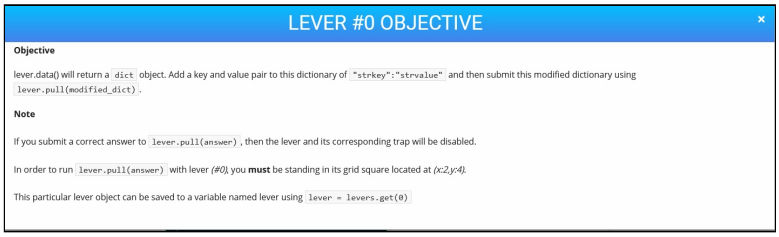
73. Close the `Level 6 - Types and Conditionals` window



74. Scroll `Down` the window



75. Click `lever0`



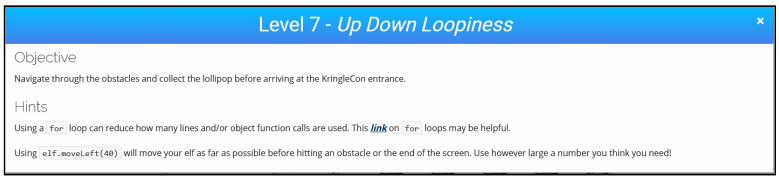
76. Close the `LEVER #0 OBJECTIVE` window

77. Modify the contents of the code window to

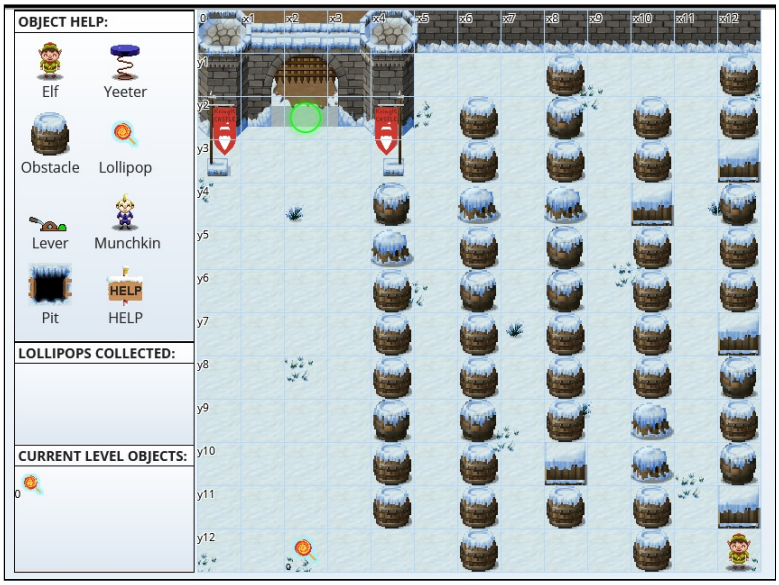
```
import elf, munchkins, levers, lollipops, yeeters, pits
lever = levers.get(0)
data = lever.data()
f type(data) == bool:
     data = not data
elif type(data) == int:
    data = data * 2
elif type(data) == list:
    for i in range(len(data)):
        data[i] = data[i] + 1
elif type(data) == str:
    data = data + data
elif type(data) == dict:
    data['a'] += 1

elf.moveUp(2)
lever.pull(data)
elf.moveUp(2)
```

78. Scroll to the `Top` of the window and then press `CTRL + ENTER` to execute the code

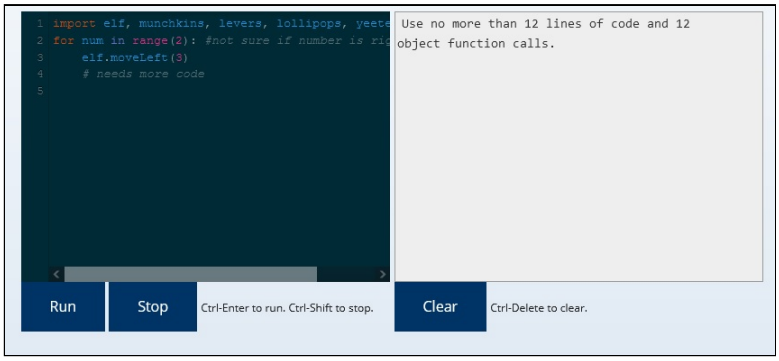
79. Click the `Sign`



80. Close the `Level 7 - Up Down Loopiness` window



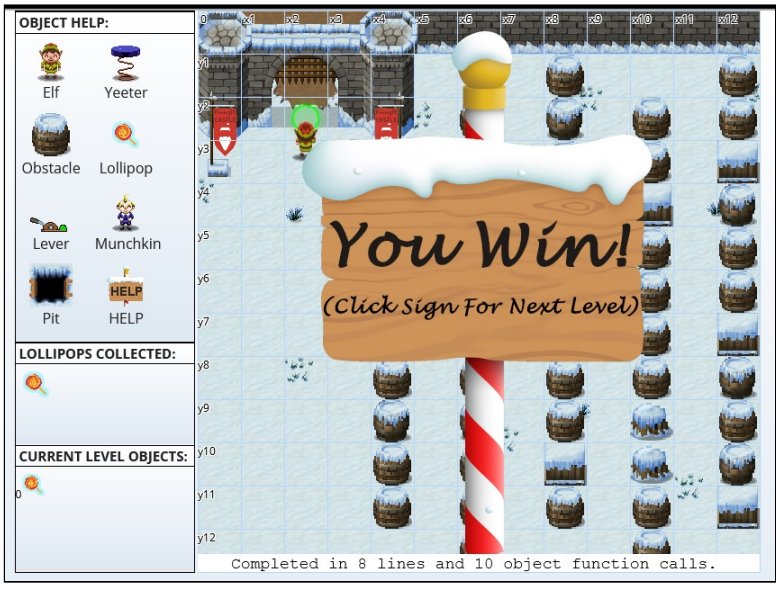
81. Scroll Down the window



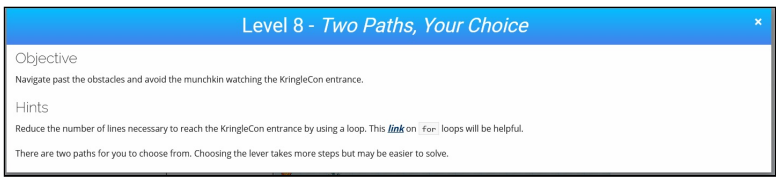
82. Modify the contents of the code window to

```
import elf, munchkins, levers, lollipops, yeeters, pits
for i in range(2):
    elf.moveLeft(3)
    elf.moveUp(12)
    elf.moveLeft(3)
    elf.moveDown(12)
elf.moveLeft(3)
elf.moveUp(12)
```

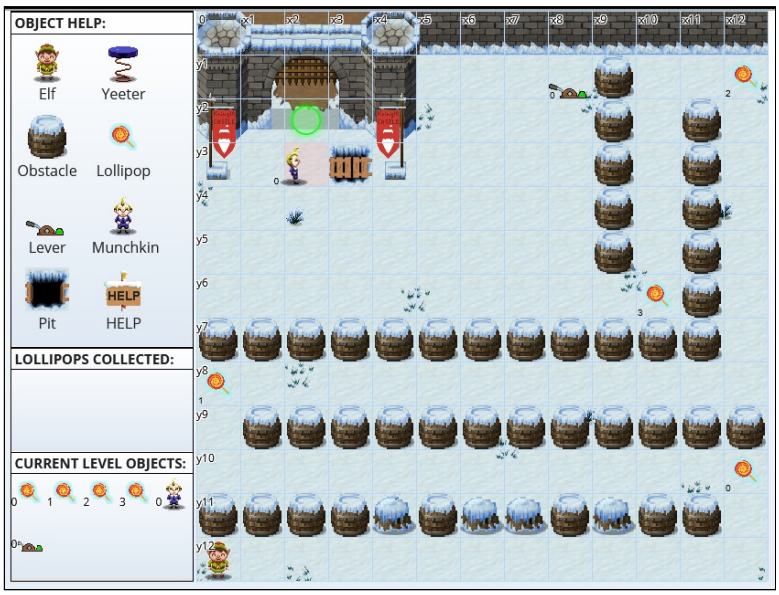
83. Scroll to the Top of the window and then press CTRL + ENTER to execute the code



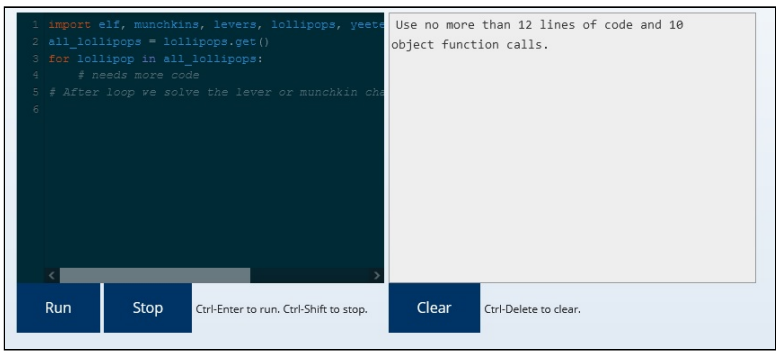
84. Click the Sign



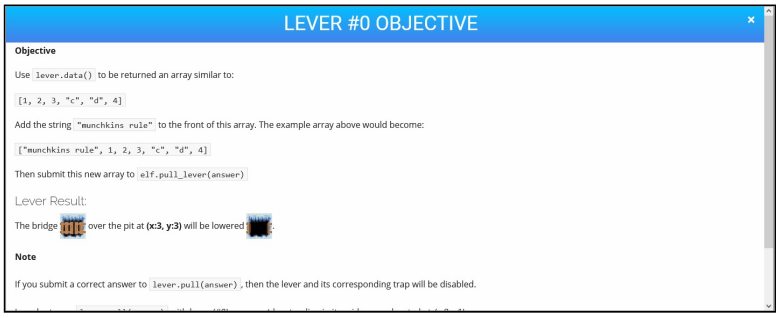
85. Close the `Level 8 - Two Paths, Your Choice` window



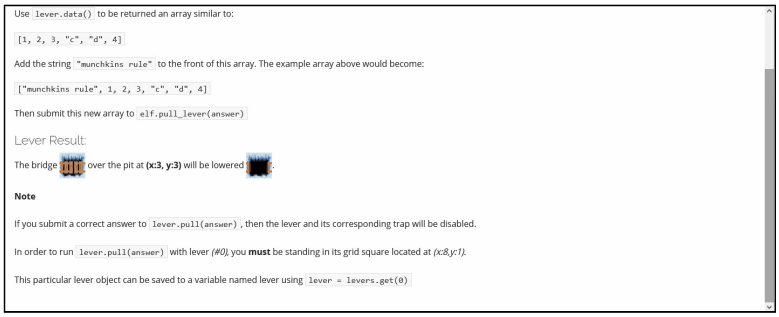
86. Scroll `Down` the window



87. Click `lever0`

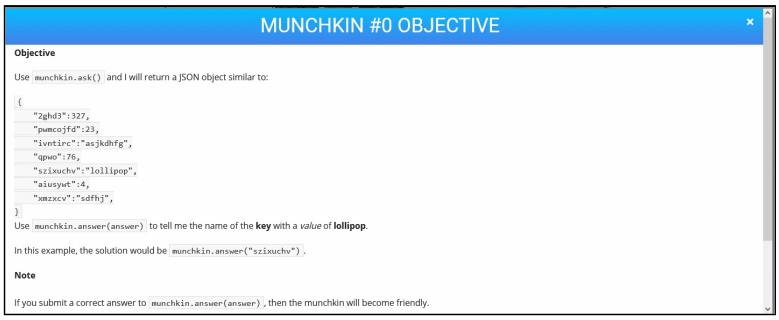


88. Scroll `Down` the window

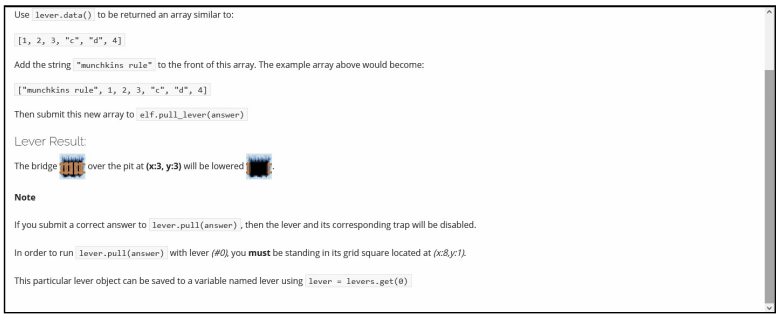


89. Scroll to the `Top` of the window and then close the `LEVER #0 OBJECTIVE` window

90. Click `munchkin0`



91. Scroll `Down` the window

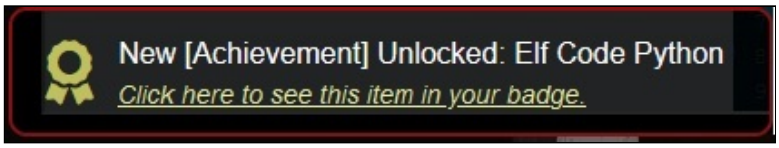


92. Scroll to the `Top` of the window and then close the `MUNCHKIN #0 OBJECTIVE` window

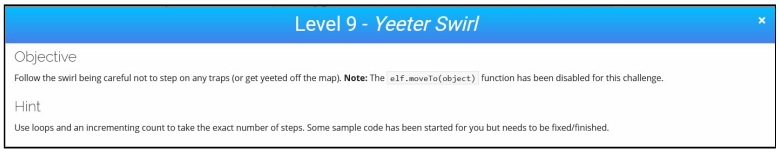
93. Modify the contents of the code window to

```
import elf, munchkins, levers, lollipops, yeeters, pits
all_lollipops = lollipops.get()
for lollipop in all_lollipops:
    elf.moveTo(lollipop.position)
lever = levers.get(0)
elf.moveTo(lever.position)
leverData = lever.data()
lever.pull(["munchkins rule"] + leverData)
elf.moveDown(3)
elf.moveTo({"x":2,"y":2})
```

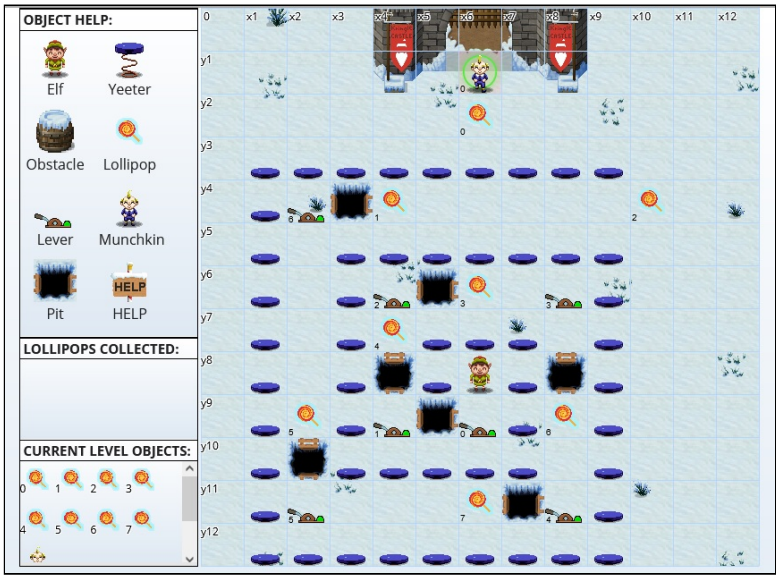
94. Scroll to the `Top` of the window and then press `CTRL + ENTER` to execute the code



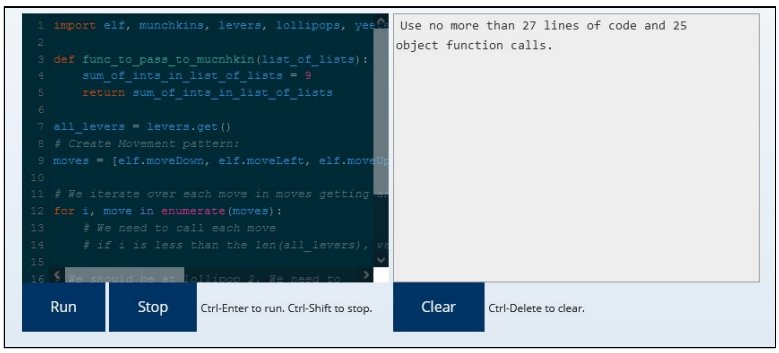
95. Click the `Sign`



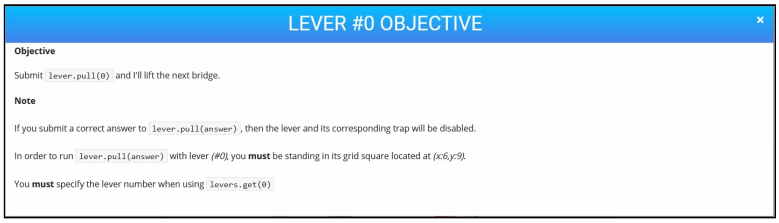
96. Close the `Level 9 - Yeeter Swirl` window



97. Scroll `Down` the window

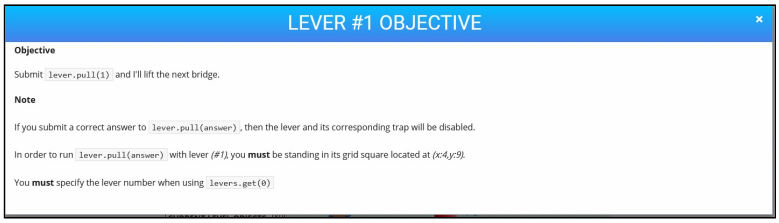


98. Click `lever0`



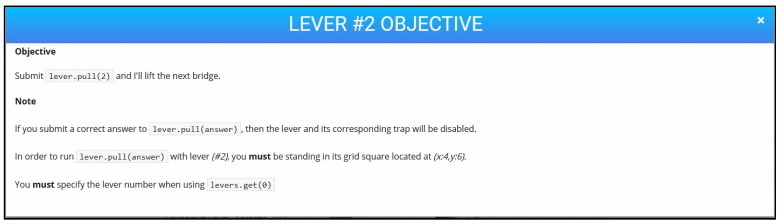
99. Close the `LEVER #0 OBJECTIVE` window

100. Click `lever1`



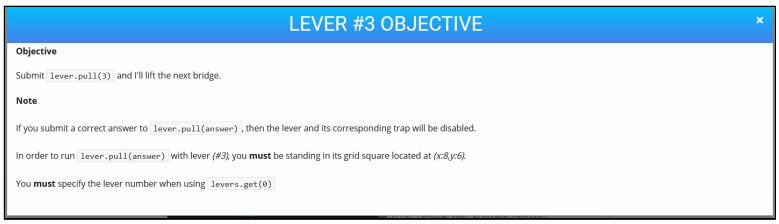
101. Close the `LEVER #1 OBJECTIVE` window

102. Click `lever2`



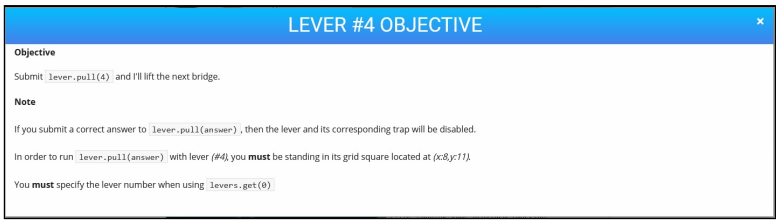
103. Close the `LEVER #2 OBJECTIVE` window

104. Click `lever3`



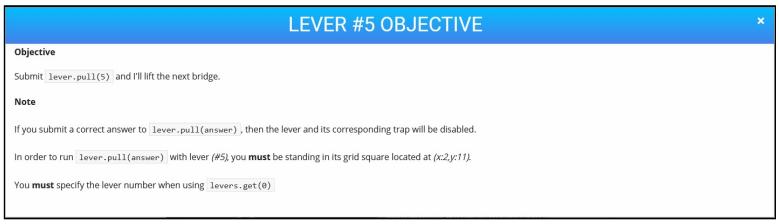
105. Close the `LEVER #3 OBJECTIVE` window

106. Click `lever4`



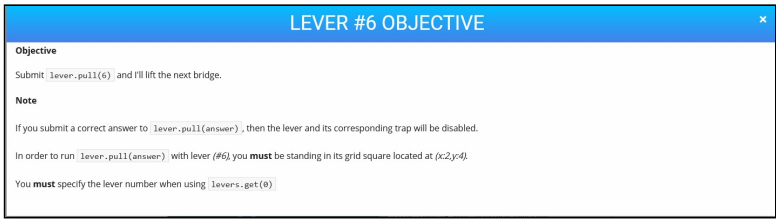
107. Close the `LEVER #4 OBJECTIVE` window

108. Click `lever5`



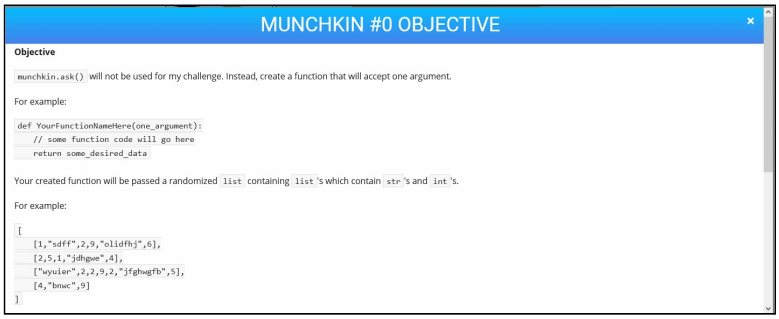
109. Close the `LEVER #5 OBJECTIVE` window

110. Click `lever6`

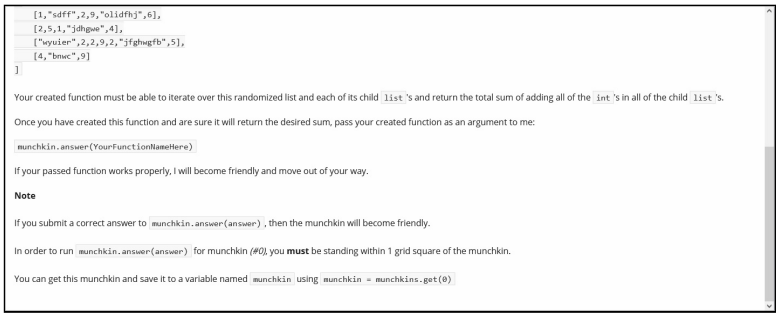


111. Close the `LEVER #6 OBJECTIVE` window

112. Click `munchkin0`



113. Scroll `Down` the window



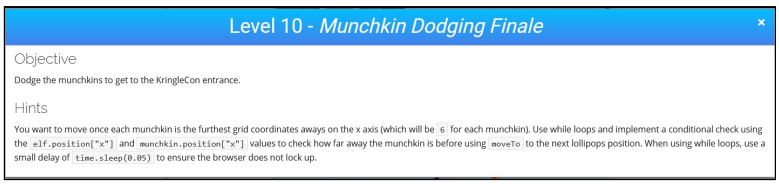
114. Scroll to the `Top` of the window and then close the `MUNCHKIN #0 OBJECTIVE` window

115. Modify the contents of the code window to

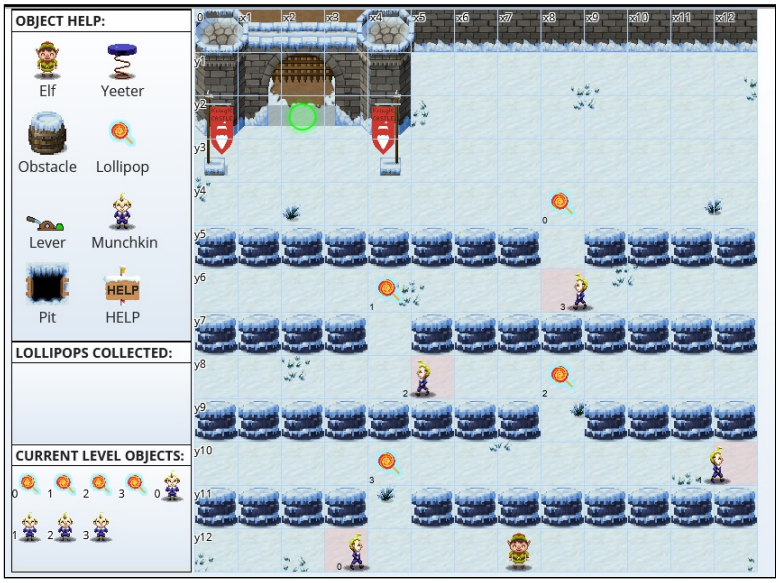
```
import elf, munchkins, levers, lollipops, yeeters, pits

def sum(list_of_lists):
    total = 0
    for i in range(len(list_of_lists)):
        for j in range(len(list_of_lists[i])):
            if type(list_of_lists[i][j]) == int:
               total = total + list_of_lists[i][j]
    return total

munchkin = munchkins.get(0)
all_levers = levers.get()
for i in range(7):
    if i == 0 or i == 4:
        elf.moveDown(i + 1)
    elif i == 1 or i == 5:
        elf.moveLeft(i + 1)
    elif i == 2 or i == 6:
        elf.moveUp(i + 1)
    elif i == 3:
        elf.moveRight(i + 1)
    all_levers[i].pull(i)
elf.moveRight(8)
elf.moveUp(2)
elf.moveLeft(4)
munchkin.answer(sum)
elf.moveUp(1)
```

116. Scroll to the `Top` of the window and then press `CTRL + ENTER` to execute the code

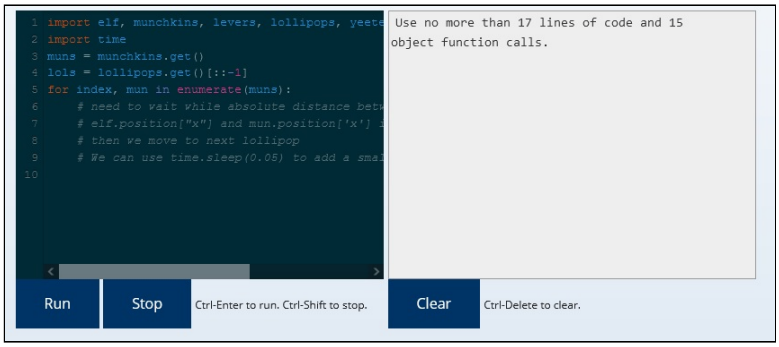
117. Click the `Sign`



118. Close the `Level 10 - Munchkin Dodging Finale` window



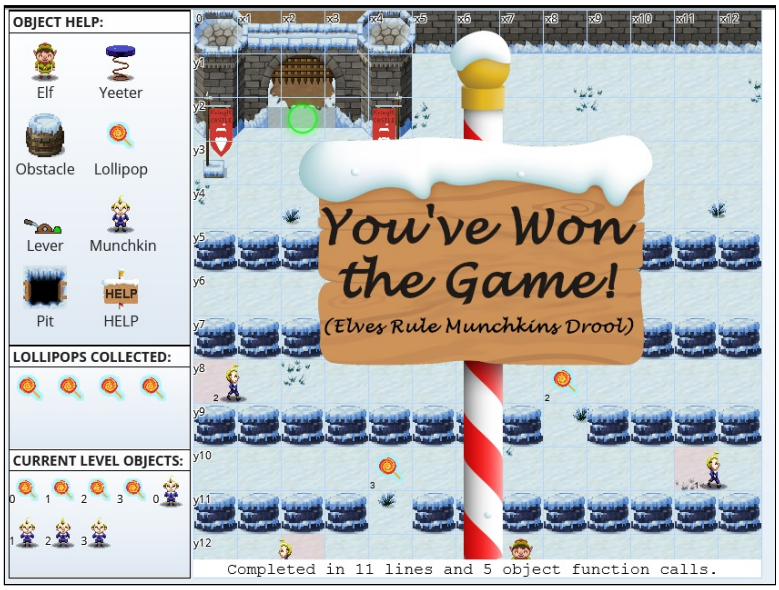
119. Scroll `Down` the window



120. Modify the contents of the code window to

```
import elf, munchkins, levers, lollipops, yeeters, pits
import time
muns = munchkins.get()
lols = lollipops.get()[::-1]
for index, mun in enumerate(muns):
    while abs(elf.position["x"] - mun.position['x']) < 6:
       time.sleep(0.05)

    elf.moveTo(lols[index].position)

elf.moveTo({"x":2,"y":2})
```

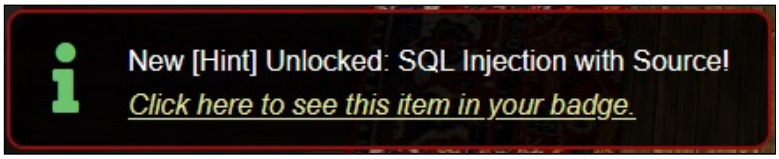
121. Scroll to the `Top` of the window and then press `CTRL + ENTER` to execute the code



122. Click the `Close` button

123. Click to talk to `Ribb Bonbowford`

```
Gosh, with skills like that, I'll bet you could help figure out what's really going on next
door...

And, as I promised, let me tell you what I know about SQL injection.

I hear that having source code for vulnerability discovery dramatically changes the vulnerability
discovery process.

I imagine it changes how you approach an assessment too.

When you have the source code, API documentation becomes tremendously valuable.
```

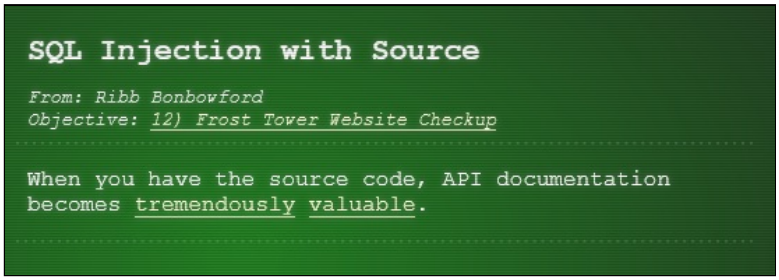


124. Click to talk to `Ribb Bonbowford`

```
Who knows? Maybe you'll even find more than one vulnerability in the code.

Wow - even the bonus levels! That's amazing!
```

125. Click the `i` (Hints) icon

126. Click `SQL Injection with Source`



127. Click `[Exit]`

128. Move `Up` and enter the `Courtyard`