

Add Conditionals in While Loop

The screenshot shows a web browser with multiple tabs. The active tab is 'Add conditionals | Python'. The browser address bar shows 'campus.datacamp.com/courses/intermediate-python/loops/ex=4'. The page content includes an 'Exercise' section titled 'Add conditionals' with a description: 'The while loop that corrects the offset is a good start, but what if offset is negative? You can try to run the following code where offset is initialized to -6.' Below this is a code block with the following Python code:

```
# Initialize offset
offset = -6

# Code the while loop
while offset != 0:
    print("correcting...")
    offset = offset - 1
    print(offset)
```

Below the code block, there is a warning: 'but your session will be disconnected. The while loop will never stop running, because offset will be further decreased on every run. offset != 0 will never become False and the while loop continues forever. Fix things by putting an if-else statement inside the while loop. If your code is still taking too long to run, you probably made a mistake!' Below this is an 'Instructions' section with a '100 XP' badge. The instructions are:

- Inside the while loop, complete the if-else statement:
 - If offset is greater than zero, you should decrease offset by 1.
 - Else, you should increase offset by 1.
- If you've coded things correctly, hitting Submit Answer should work this time.

Below the instructions, there is a note: 'If your code is still taking too long to run (or your session is expiring), you probably made a mistake. Check your code and make sure that the statement offset != 0 will eventually evaluate to False!' Below this is a 'Take Hint (-30 XP)' button. To the right of the instructions is a code editor with the following Python code:

```
1 # Initialize offset
2 offset = -6
3
4 # Code the while loop
5 while offset != 0:
6     print("correcting...")
7     if ____:
8         ____
9     else:
10        ____
11    print(offset)
```

Below the code editor is a 'Python Shell' section with a 'Restart Session' button. The bottom of the screenshot shows a Windows taskbar with various icons and a system tray showing the date and time as 22:46 on 20/11/2024.

****Question:****

The `while` loop that corrects the `offset` is a good start, but what if `offset` is negative? You can try to run the following code where `offset` is initialized to `-6`:

```
python
offset = -6
while offset != 0:
    print("correcting...")
    offset = offset - 1
    print(offset)
```

But your session will be disconnected. The `while` loop will never stop running, because `offset` will be further decreased on every run. `offset != 0` will never become `False`, and the `while` loop continues forever.

****Instructions:****

Fix things by putting an `if-else` statement inside the `while` loop. Complete the `if-else` statement:

- If `offset` is greater than zero, you should decrease `offset` by 1.

- Else, you should increase `offset` by 1.

If you've coded things correctly, hitting `Submit Answer` should work this time. Make sure that the statement `offset != 0` will eventually evaluate to `False`.

****Answer:****

Here is the Python code that solves the problem:

```
# Initialize offset
offset = -6

# Code the while loop
while offset != 0:
    print("correcting...")
    if offset > 0:
        offset = offset - 1
    else:
        offset = offset + 1
    print(offset)
```

****Explanation:****

1. ****Initialization****: The variable `offset` is initialized to `-6`.
2. ****While loop condition****: The `while` loop runs as long as `offset` is not equal to `0`.
3. ****If-else inside the loop****:
 - If `offset > 0`, the value of `offset` is decreased by `1`.
 - If `offset <= 0`, the value of `offset` is increased by `1`.
4. ****Print statements****: The message `correcting...` is printed during each iteration, followed by the updated value of `offset`.
5. ****Loop termination****: The `offset` value is incremented or decremented during each iteration, eventually reaching `0`. When `offset == 0`, the loop condition `offset != 0` evaluates to `False`, and the loop terminates.