

## What the Hack: Variables | Episode 3 Challenge Solutions

*Finish testing your knowledge? Take a look at some solutions to the challenges!*

### Challenge 1: Number comparison and decision making

```
#Write a program that asks the user a number between 1 and 10,  
#And print out if the number is greater or less, or equal to 5.  
#(hint: you need to compare the number that the user inputs to 5 using what we  
just learned today!)  
#(remember, when you take in an input, it is in a string. Review the previous  
video if you need a refresher on how to convert variables into different types)  
  
#we ask for a number from the user of our program using the input() function  
#we can display a message when we ask for some input from the user, by enclosing  
the message with quotation marks, either ' single quotation marks or "" duoble  
quotation marks  
#like what's mentioned in the hint, the content of the input that we get from the  
input() function is initially a string. The goal of our program in this challenge  
is to compare numbers, so we need to convert the input from a string to either a  
float or an integer using the float() or the int() function.  
number = float(input("Please enter a number between 1 and 10: "))  
#we will convert the input to a float from a string, to allow our user to enter a  
number with decimal places. If we use the float() function, a decimal point  
between the numbers will be recognized and the number can be converted to a float  
properly.  
  
#number = int(input('Please enter a number between 1 and 10: '))  
#if we use int(), the user cannot enter a number with decimal places, because a  
string with a dot will not be converted to an integer  
  
#now that we have a number that we will compare with 5, we need to make decisions  
about what to say or display to the user depending on the result of our  
comparison.  
#we will be using if else statements that we learned in Episode 3!  
#remember, the conditions that we have in the if else statement will evaluate to  
either true or false (the boolean values)  
  
#if a condition is evaluated to false, the code below that clause of our if else  
will not be executed, and the program will move on to evaluate the next clause in  
our if else statement.  
#if a condition is evaluated to true, then the code below that clause of our if  
else statemtn will be executed, and anything else after that will be skipped  
  
#here, if the number that the user entered is less than 5, then the condition  
number < 5 will evaluate to true, and the print function underneath this if  
clause will be executed  
if number < 5:  
#and we will display the message to let the user know that the number that they  
entered is less than 5
```

```
print("Your number is less than 5")
```

#if the number from the user isn't less than 5, the condition here will evaluate to false, and our program will move on to the next clause of the if else statement.

#here, if the number that the user entered is greater than 5, then the condition `number > 5` will evaluate to true, and the print function underneath this if clause will be executed

```
elif number > 5:
```

#and we will display the message to let the user know that the number that they entered is greater than 5

```
print("Your number is greater than 5")
```

#if the number from the user isn't greater than 5, the condition here will evaluate to false, and our program will move on to the next clause of the if else statement.

#here, if our number is neither greater than nor less than 5, then the number that our user entered will be 5.

#if we reach this part of the if else statement, it means that the first two conditions are both evaluated to false, meaning that the number is neither greater than nor less than 5, and the only option that we have left is that the number is equal to 5

#thus, we can end our if else statement with an else statement, without the need of putting our third condition.

```
else:
```

#and we will display the message to let the user know that the number that they entered is 5

```
print("Your number is 5")
```