

# Lesson 4

## Python: Conditional Statements

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Conditionals [6]

1. Define Control Flow

2. \_\_\_\_\_ are statements that run only when \_\_\_\_\_.

3. What is the "gist" of conditional statements?

4. Conditionals tell a computer \_\_\_\_\_ if a certain condition is \_\_\_\_\_. What happens when the condition is False?

5. Compare pseudocode to Python code.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Letter Grade Generator: Script

```
##Conditionals Benchmark
##Python Lesson #4

##Title:         Letter Grade Generator
##Description:   Python program that utilizes chained
##              conditional statements to output a
##              student's Letter Grade when the input
##              is their class average

average = float(input("What is your current class average?\n"))

if (average >= 90):
    print("You earned an A!")
if (average >= 80):
    print("You earned a B!")
if (average >= 70):
    print("You earned a C!")
if (average >= 60):
    print("You earned a D!")
if (average < 60):
    print("Sorry, you earned an F.")
```



5. Debug and rewrite the code so that it produces the proper outputs. Provide your corrections by writing your code below. (Hint: after you make code changes, run the code by testing at least three inputs). Explain WHY you made those changes.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Investigation and Programming

### Directions:

Your role as an assistant computer programmer means that you must learn to be proficient in many types of programming and coding. For this assignment you will have to continue learning Python by applying and extending your prior knowledge. Because you are in training, you will be working on several modules and continue to build upon your skills. You will work on various skills in Python and submit them to the head computer programmer to make sure your codes are both sufficient and efficient. For this task, you will learn and utilize conditional statements in Python by designing your own program.

### Prompt:

The Weather Channel wants to incorporate providing custom messages to its users. They want the message to include the user's location, current temperature (in celsius), current precipitation, and a special warning. The special warning is unique to you, as the programmer. The Weather Channel hired you to write a Python code that can be programmed into their computer system so their users can log-in and receive their customized message.

This involves using the input function, a formula to convert temperature, the datetime module, and if/ elif/ else statements. As the assistant computer programmer, you are asking the Weather Channel for information about the weather for a specific area (using the input function) and reporting this information to the public with special warnings (using the print function).

They provided the following rules:

1. Use input() to receive the user's location
2. Use input() to receive the temperature as degrees in Fahrenheit
3. Use input() to ask whether it is raining, snowing or neither (receive: R for raining, S for snowing and N for neither).
4. Convert the Fahrenheit temperature into degrees Celsius
5. Report the results using print(). This includes the following: the location, temperature in Fahrenheit, temperature in Celsius, and whether it is snowing or raining. Show the temperatures rounded to one decimal place.
6. Add a special warning! This means use print() to say "Take your umbrella!" if it is raining, or "Dress warm, it's cold!" if the temperature is below 30 degrees Fahrenheit. Be creative with these!
7. Add the current date to the output, and show the number of hours until the first day of summer -- June 21, 2019.
8. Use IF blocks to give an appropriate warning when it is raining, when it is snowing, and when it is really cold outside.

## Example Outputs:

### Example One:

```
Where are you located?
New York
What is the current temperature in Fahrenheit?
43
Is it currently raining, snowing, or no precipitation?
Place R for raining, S for snowing, or N for neither.
R
*****
In New York, the current temperature is 43.0 degrees Fahrenheit
In degrees Celsius, the temperature is 6.1.

Dress warm because it's pretty chilly!
Don't forget your umbrella!

Today's date is: 04.18.2019
We have 1526.0 hours until summer!
*****
```

### Example Two:

```
Where are you located?
New York
What is the current temperature in Fahrenheit?
25
Is it currently raining, snowing, or no precipitation?
Place R for raining, S for snowing, or N for neither.
S
*****
In New York, the current temperature is 25.0 degrees Fahrenheit
In degrees Celsius, the temperature is -3.9.

Dress warm it feels like Alaska out there!
Don't forget your scarf and gloves!

Today's date is: 04.18.2019
We have 1526.0 hours until summer!
*****
```

### Example Three:

```
Where are you located?
New York
What is the current temperature in Fahrenheit?
78
Is it currently raining, snowing, or no precipitation?
Place R for raining, S for snowing, or N for neither.
N
*****
In New York, the current temperature is 78.0 degrees Fahrenheit
In degrees Celsius, the temperature is 25.6.

It's pretty warm out there!

Today's date is: 04.18.2019
We have 1526.0 hours until summer!
*****
```

## Helpful Information:

Since we have not yet used the datetime module or talked about formatting, provided below is a SKELETON of what your code should be. Feel free to copy and paste or type this skeleton into the script mode of IDLE. You are responsible for filling in the necessary information to fully answer the prompt, i.e. replace the highlighted sections below.

```
##Name
```

```
##Weather Channel
```

```
##Imports
```

```
import os
```

```
import datetime as dt
```

```
import math
```

```
##Variable Declaration
```

```
now = dt.datetime.now()
```

```
date = now.strftime('%m.%d.%Y')
```

```
summer = dt.datetime(2019,6,21) - now
```

```
hours = round((summer.days*24) + ((summer.seconds)/(60*60)),0)
```

```
##Inputs
```

```
location = (create input for the user's location)
```

```
temperature = (create input for the current Fahrenheit temperature)
```

```
precipitation = (create input asking about precipitation)
```

```
##Celsius Conversion
```

```
Celsius = round(((temperature-32)*(5/9)),1)
```

```
##Output Temperature Statements
```

```
print("In %s, the current temperature is %.1f degrees Fahrenheit" %(location, temperature))
```

```
print("In degrees Celsius, the temperature is %.1f.\n" %(celsius))
```

```
##Chained Conditionals & Output Messages (This is the section where you write IF / ELIF / ELSE blocks to print your special messages. Remember, you need a message per precipitation condition AND also per temperature division. You get to decide how many temperature divisions that you want to use.)
```

```
##Output Date Statements
```

```
print("Today's date is: %s" %(date))
```

```
print("We have %.1f hours until summer!" %(hours))
```