



Hello,
World!

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EMT1111: Logic and Problem Solving | Spring 2016 | Dr. Mendoza

LESSON 7 (Homework): Complex Boolean Expressions

Temperature with a function ([temperature2.py](#))

Write a Python program to **ask the user for** the weather, specifically, **the current temperature in Fahrenheit** degrees. The program should define **a function `getOpinion`** that, **depending on the temperature** entered passed as parameter **`temp`**, the function should display one of the following messages:

- *“Not too bad out there”*, if the temperature is 50 or more
- *“You might want to wear a jacket today”*, otherwise

Temperature.py

```
weather = int(input("What is the current weather  
temperature? "))  
  
if weather >= 50:  
    print("Not too bad out there.")  
else:  
    print("You might want to wear a jacket today.")
```

Temperature.py

```
def getOpinion(temp):  
    if temp >= 50:  
        print("Not too bad out there.")  
    else:  
        print("You might want to wear a jacket today.")  
  
weather = int(input("What is the current weather  
temperature? "))  
  
getOpinion(weather)
```

Complex Boolean expressions

Complex Conditionals

You can use **and** and **or** to join several logical expressions together as shown in the table below.

Expression	Meaning
$(a < b) \text{ or } (c < d)$	The whole expression is true if a is less than b or c is less than d.
$(a < b) \text{ and } (c < d)$	The whole expression is true if a is less than b AND ALSO c is less than d.
$\text{not } a < b$	Only true if a is actually greater than or equal to b. The logical expression <code>not a < b</code> is the same as <code>a >= b</code> .

or means that **if either of the expressions is true**, the whole expression is **true**.

and means that **only if both expressions are true**, the whole expression is **true**.

not **negates** the logical value that follows it

Homework Assignment: Isosceles (isosceles.py)

An **isosceles triangle** has 2 equal sides. An **equilateral triangle**, a triangle with all sides of the same size, is a special case of isosceles triangle.

Write a function **isIsosceles(x, y, z)** that accepts the 3 sides of a triangle as inputs. The function should print **“Your triangle is isosceles”** if it is an **isosceles triangle** or **“No, your triangle is not isosceles”** otherwise.

Your Python program should ask the user to enter numeric values of each side of a triangle and call the **isIsosceles** function.

Example1:

```
>>> Enter the length of the first side -> 5
>>> Enter the length of the second side -> 7
>>> Enter the length of the third side -> 6
>>> No, your triangle is not isosceles
```

Example2:

```
>>> Enter the length of the first side -> 5
>>> Enter the length of the second side -> 5
>>> Enter the length of the third side -> 6
>>> Your triangle is isosceles
```

Homework Assignment: *fitness* (*standard.py*)

Define a function **fitness(a, b, c)** to determine and print the **standard** achieved by a participant taking a **physical fitness test**.

The **standard** is determined based on the individual and total scores for 3 stations a, b, and c.

Your main program should ask the user for the scores on each station and call the function to print the corresponding standard result.

Gold	Silver	Pass	Fail
Min. of 4 points for each station, and min. total of 13	Min. of 3 points for each station, and min. total of 10	Min. of 2 points for each station, and min. total of 7	Less than 2 points for any station or total < 7

Example1:

```
>>> Enter your score on the first station -> 5
>>> Enter your score on the second station-> 7
>>> Enter your score on the third station-> 3
>>> Your standard result is: Silver
```

Example2:

```
>>> Enter your score on the first station -> 5
>>> Enter your score on the second station-> 7
>>> Enter your score on the third station-> 4
>>> Your standard result is: Gold
```