LAB #02 - CONDITIONALS

> ### Lab Overview
>
> These lab questions will help develop your understanding of conditional statements and some of the applications where conditionals are used.

Question #1 - Sort three numbers

Write a program that asks for three numbers from the user, and prints out the three numbers in ascending order.

Example Run:
Number #1? **9**
Number #1? **3**
Number #1? **5**
Result = 3 5 9

> **Note:** *You cannot use the `max()` or `min()` functions*

Your Answer:

```
# Student Name: Michael Houghton
# Student Number: 1035718

# Add answer below this line

number1 = int(input("Number #1? "))
number2 = int(input("Number #2? "))
number3 = int(input("Number #3? "))

numbers = [number1, number2, number3]

numbers.sort()

print("Result =", numbers[0], numbers[1], numbers [2])
```

```
Number #1? 8
Number #2? 2
Number #3? 4
Result = 2 4 8
```

Question #2 - BMI Calculator + Range

We will take the BMI question from Tutorial #1 and extend its functionality.

> **Old Tutorial 1 Question**
>
> Create a program that calculates a user's BMI. To do this, you will need to take in the users:
>
> 1. name
> 2. height (in meters; e.g., 1.8)

> 3. weight (in kg; e.g., 60)
>
> and then insert the values into the equation: $BMI = \frac{weight}{height^2}$
>
> (Note: You can square the height by either multiplying by itself, or using `height**2`)
>
> The output is expected to be similar to:
> ```
> Hi Luke, your BMI is 23.0
> ```

Your job is to update this program so it also shows the range that the calculated BMI falls within.

Example Run:
Weight? **180**
Height? **80**
BMI = 24.7
The given BMI is classified as: Healthy

> **Note:** *The ranges haven't been given to you - you need to do a bit of research and add a reference to the site you used in the program comments.*

Your Answer:

```
# Student Name: Michael Houghton
# Student Number: 1035718
# BMI Ranges Reference URL: https://www.health.nsw.gov.au/heal/Pages/bmi.aspx#:~:text=Normal%20weight%3A%20BMI%20of%2018.5,BMI%20of%203(

# Add answer below this line

name = input("Name? ")
height = float(input("Height? "))
weight = int(input("Weight? "))

BMI = weight / height**2

print("BMI =", BMI)

if BMI < 18.5:
  print("The given BMI is classified as: Underweight")
elif BMI < 24.9:
  print("The given BMI is classified as: Healthy Weight")
elif BMI < 29.9:
  print("The given BMI is classified as: Overweight")
else: print("The given BMI is classified as: Obese")
```

```
Name? Michael
Height? 1.8
Weight? 70
BMI = 21.604938271604937
The given BMI is classified as: Healthy Weight
```

Question #3 - Movie tickets

Create a program that calculates the cost of a ticket at the movies. The program asks the person's age. If they are under 18, they get a child's ticket at $10.00, and adults pay $20.00. However, if a person is over 65, they are asked if they have a concession card, and if so, then receive a $15.00 ticket.

Example Run #1:
Age? **15**
Ticket = $10.00

Example Run #2:

Age? **30**

Ticket = $20.00

Example Run #3:

Age? **70**

Concession Card? **Yes**

Ticket = $15.00

Example Run #4:

Age? **70**

Concession Card? **No**

Ticket = $20.00

Your Answer:

```
# Student Name: Michael Houghton
# Student Number: 1035718

# Add answer below this line

age = int(input("Age? "))

if age < 18:
  print("Ticket = $10")
elif age < 65:
  print("Ticket = $20")
else:
  concession = input("Concession Card? ")
  if concession == "Yes":
    print("Ticket = $15")
  else:
    print("Ticket = $20")
```

```
Age? 66
Concession Card? Yes
Ticket = $15
```

Submission

When you believe you have the program correctly working, please run the program and enter valid details for each program so that the output is apparent.

When you are ready to submit please

- go to `File -> Print -> Print PDF` and then upload and submit in the LMS.
- save your file to GitHub via: `File -> Save a copy in GitHub`