1. What is Boolean? Write down 3 different expression that results a Boolean type (i.e. 5 == 6)

-> **Answer:**

- Boolean is named after the British mathematician, Geogre Boole, who first formulated Boolean algebra - some rules for reasoning about and combining these values. This is the basis of all modern computer logic.

+ A Boolean value is either True or False. (the capitalization must be exactly as shown in Python)

+ A Boolean expression is an expression that evaluates to produce a result which is a Boolean value

- Example of expression that results a Boolean type:

+ 1994 > 1999 -> False
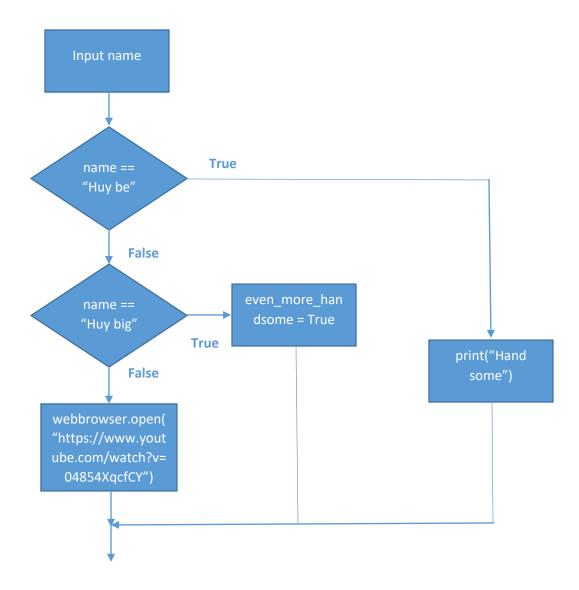
+ 23 == (10 + 13) -> True

+ middle_name = "Thanh "

middle_name + "Long" == "Thanh Long" -> True

2. What is a flow chart? Draw flow chart for the following code snippet: (you can draw on a paper, take a picture of it)

if name == "Huy be":

   print("Hand some")

elif name == "Huy big":

   even_more_handsome = True

else:

   webbrowser.open("https://www.youtube.com/watch?v=04854XqcfCY")

-> **Answer:**

- A flowchart is a type of diagram that represents an algorithm, workflow or process, showing the steps as boxes of various kinds, and their order by connecting them with arrows. This diagrammatic representation illustrates a solution model to a given problem. Flowcharts are used in analyzing, designing, documenting or managing a process or program in various fields.

- Draw flowchart:

```
            ┌─────────────────┐
            │   Input name    │
            └────────┬────────┘
                     │
                     ▼
                ╱─────────╲        True
               ╱  name ==  ╲───────────────────────────┐
               ╲ "Huy be"  ╱                            │
                ╲─────────╱                             │
                     │ False                            │
                     ▼                                  │
                ╱─────────╲      ┌──────────────────┐   │
               ╱  name ==  ╲────▶│ even_more_han    │   │
               ╲ "Huy big" ╱ True│ dsome = True     │   │
                ╲─────────╱      └─────────┬────────┘   ▼
                     │ False                │    ┌──────────────┐
                     ▼                      │    │ print("Hand  │
       ┌───────────────────────┐           │    │   some")     │
       │ webbrowser.open(       │           │    └──────┬───────┘
       │ "https://www.yout      │           │           │
       │ ube.com/watch?v=       │           │           │
       │ 04854XqcfCY")          │           │           │
       └───────────┬───────────┘           │           │
                   │◀──────────────────────┴───────────┘
                   ▼
```

3. What is nested conditionals? Write a piece of code that uses nested conditionals

-> Answer:

      - Nested conditionals is: One conditional has another conditional is nested within its own or one conditional can be nested within another which is called nested conditional.

      - Example:

```
username = input("Username: ")
if username.lower() == "c4e":
    password = input("Password: ")
    if password == "codethechange":
        print("Welcome, c4e")
    else:
        print("Password is incorrect")
```

```python
else:
    print("You are not superuser")
```