

Python Conditional Statements

1. Tracing

Determine what will be printed when each of the following code snippets are executed. Trace each snippet by hand, then check your answer by stepping through the code using the Thonny debugger. (Link: [if_examples.py](#))

```
hat = "fedora"

if hat == "fedora":
    print("A")
else:
    print("B")

print("C")
```

```
x = 10

if x < 100:
    print("A")
if x < 50:
    print("B")
print("C")
```

```
if .1 + .1 + .1 == .3:
    print("yeah!")
else:
    print("nay.")
```

```
x = 10

if x < 100:
    print("A")
elif x < 50:
    print("B")
else:
    print("C")

print("D")
```

```
x = 10
hat = "fez"

if x > 100 or hat == "fez":
    print("A")
    if x < 50:
        print("B")
    else:
        print("C")
else:
    print("D")
    if hat == "fedora":
        print("E")
print("F")
```

```
a = -1
b = 2
if (a and b) > 0:
    print("both greater!")
else:
    print("one less.")
```

```
x = 1.0
y = 0.0
b1 = x > 0 and y > 0
b2 = not x <= 0 or y <= 0
b3 = not (x <= 0 or y <= 0)
print(b1, b2, b3)
```

2. Identify the logic error in the following code:

```
# Return outerwear suggestion based on the temperature.
if temp < 10:
    print("parka")
elif temp < 50:
    print("jacket")
elif temp < 100:
    print("none needed")
```

3. Style Issues

Each of the programs below are logically correct, but contain at least one significant style problem. Rewrite each.

```
# Seniors get discounted Bagels on Wednesdays
wednesday = input("Wednesday? (y/n): ") == "y"
age = int(input("Age: "))

if wednesday == True and age > 65:
    print("Discount")
else:
    print("No discount")
```

```
age = int(input("Age: "))
height = float(input("Height: "))
if age > 9:
    if height > 4.5:
        if height < 6.0:
            print("OK!")
        else:
            print("No ride.")
    else:
        print("No ride.")
else:
    print("No ride.")
```

```
# Healthy patients have a pulse.
pulse = int(input("Pulse: "))
if pulse <= 0:
    print("Not good.")
elif pulse > 0:
    print("Good.")
```