Chaining and Nesting Conditions

Chained conditionals: if, elif, else

```python
if x < 2:
    print("small")
elif x < 10:
    print("Medium")
else:
    print("Large")
```
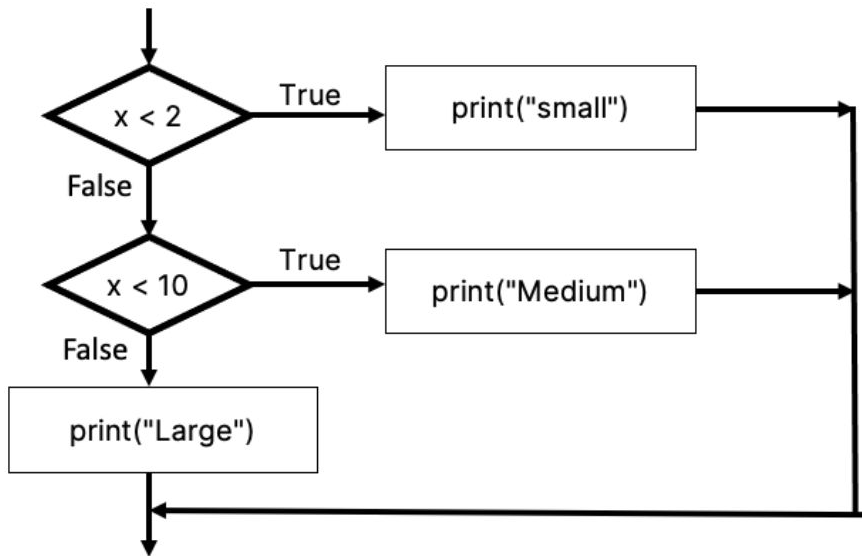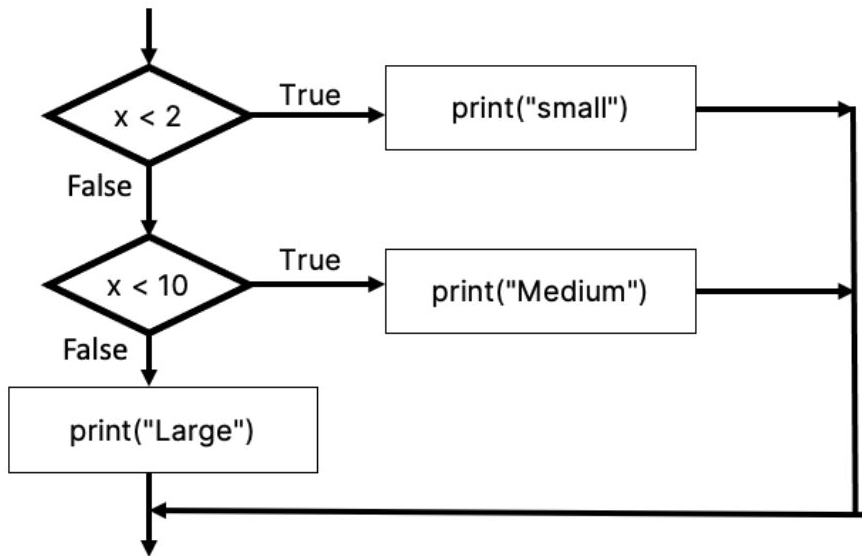

elif (short for else if):
follows if block, can have more than one, optional,
execute if all previous conditions are false

Chained conditionals: if, elif, else

```python
if x < 2:
    print("small")
elif x < 10:
    print("Medium")
else:
    print("Large")
```
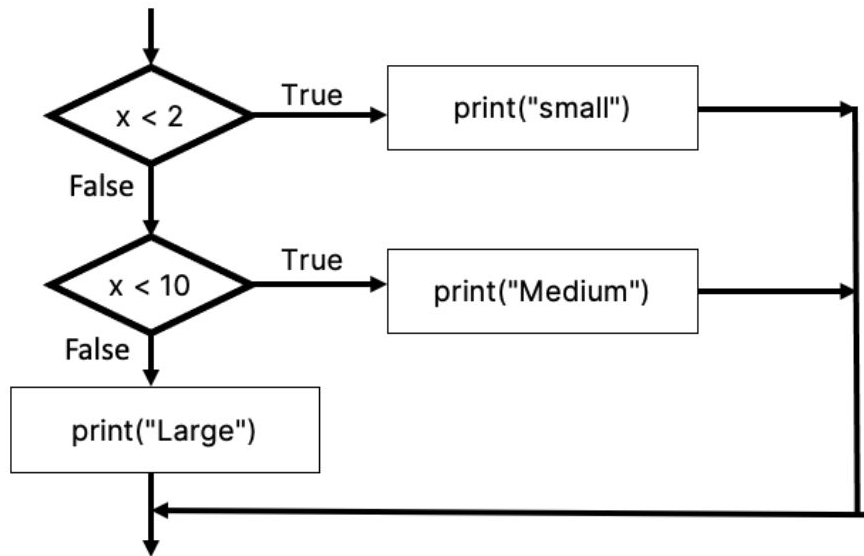

else:
can follow if or elif, can only have one at end of chain, optional,
execute if all conditions are false

Chained conditionals: if, elif, else

```python
if x < 2:
    print("small")
elif x < 10:
    print("Medium")
else:
    print("Large")
```
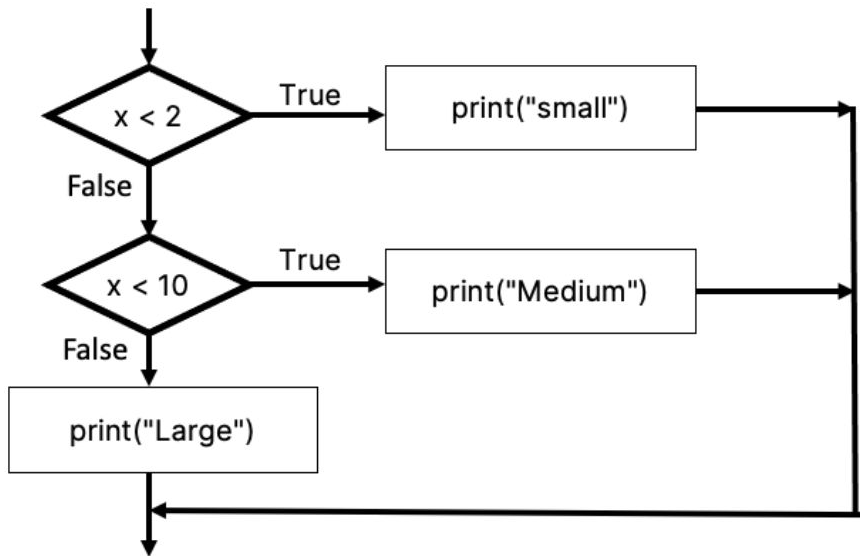

Question:
If the value of x is 5,
what would be printed on the screen if we ran this code?

Chained conditionals: if, elif, else

```python
if x < 2:
    print("small")
elif x < 10:
    print("Medium")
else:
    print("Large")
```
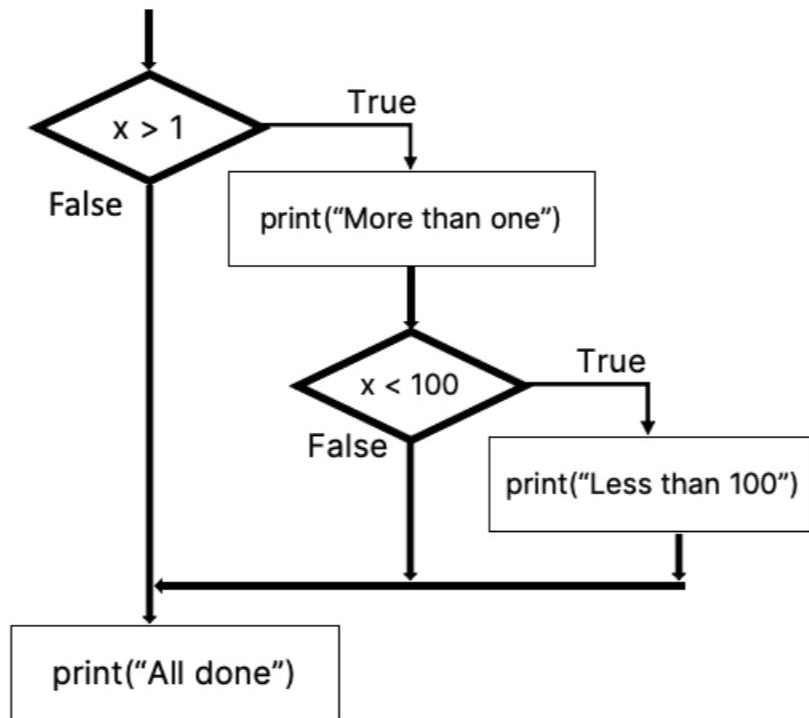

Answer:
Medium

Nested conditions

```python
if x > 1:
    print("More than one")
    if x < 100:
        print("Less than 100")
print("All done")
```
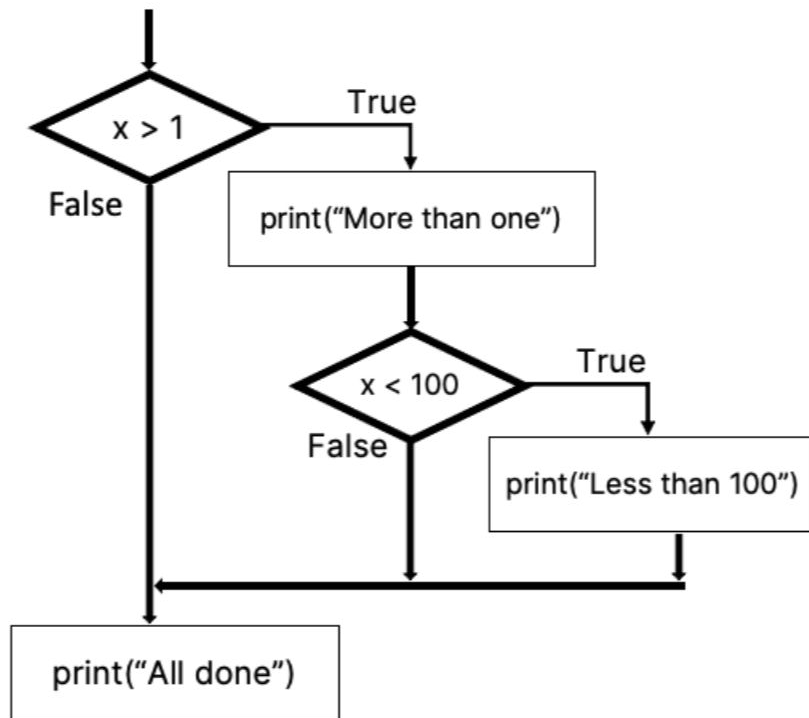
Conditional statements
can be nested

Nested conditions

```python
if x > 1:
    print("More than one")
    if x < 100:
        print("Less than 100")
print("All done")
```

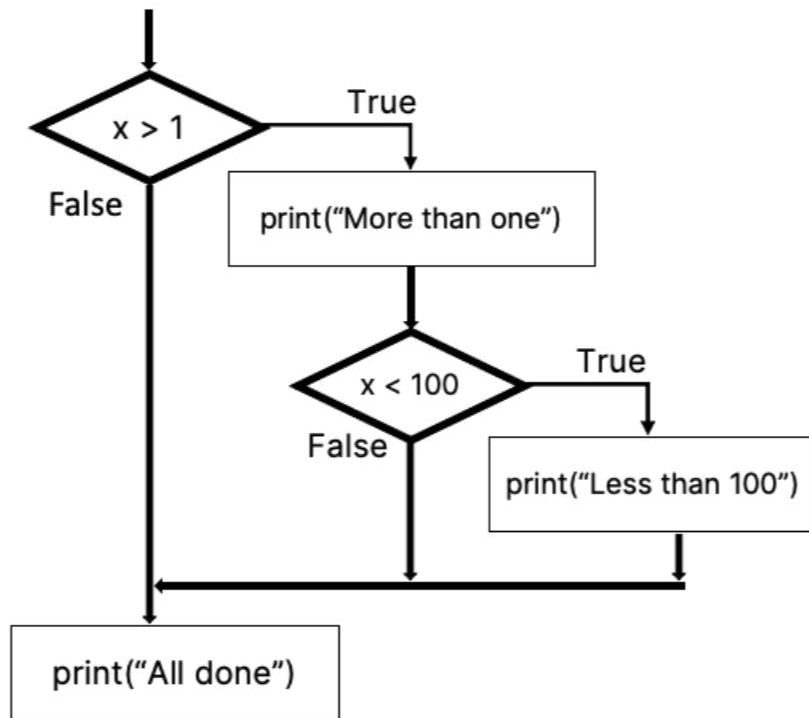Nested statements will only run if the outer condition is True

Nested conditions

```python
if x > 1:
    print("More than one")
    if x < 100:
        print("Less than 100")
print("All done")
```

Can become difficult to read, best avoided

Use logical operators to simplify

Using logical operators to simplify nested decisions

Python Fundamentals, Data Structures, and Algorithms

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```python
if x > 1 and x < 100:
    print("More than one")
    print("Less than 100")
print("All Done")
```

Instead of checking **if x > 1** then checking **if x < 100** in separate if statements, check both in a single if condition by using the logical **and** operator
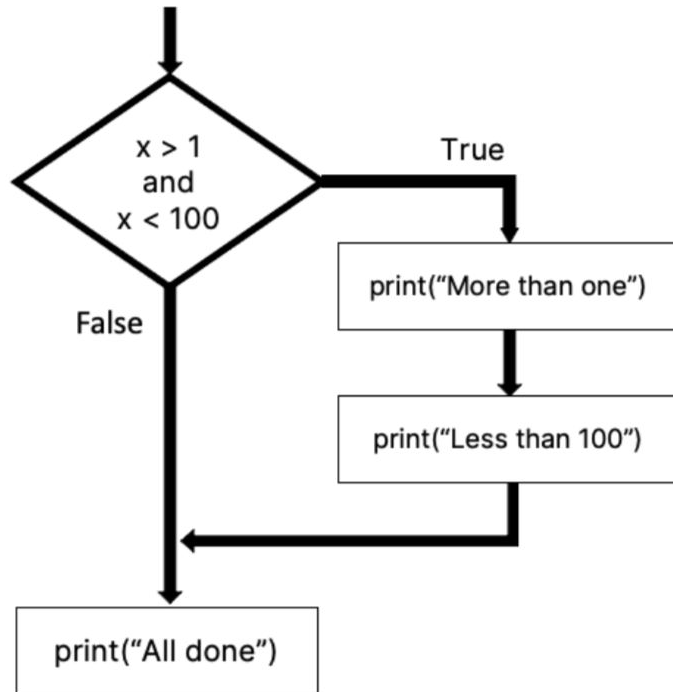
Using logical operators to simplify nested decisions

```python
if x > 1 and x < 100:
    print("More than one")
    print("Less than 100")
print("All Done")
```

The corresponding code block only runs if both comparisons are True