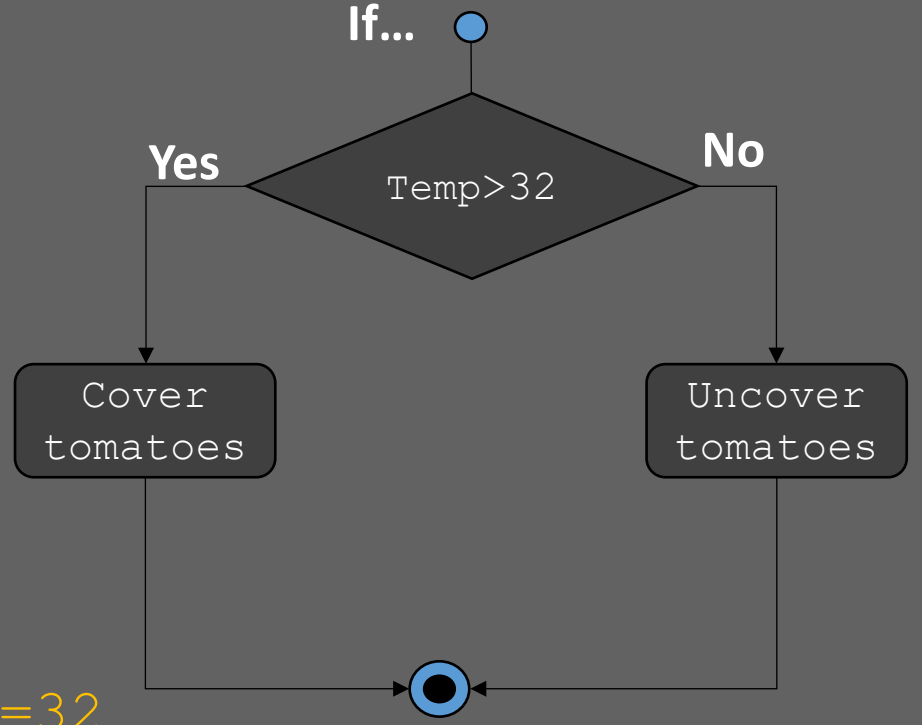
C: conditional execution

Conditional execution

- So far, all commands/instructions written in our program (a file with suffix .py) have been executed, from top to bottom.
- Next, execution will be driven by the actual input data, so to implement *decision diagrams.*
- *Decision means evaluating a True/False question.*
- *Some parts of the code might never be executed*

- Cover tomatoes?




```
LIMIT=32
temp=int(input("Temp. Today?")
if temp > LIMIT:
↔# Notice the indentation

   print("Go cover the tomatoes!")
```

Conditionals if...else...

- Python supports the logical conditions from mathematics:
  - Equals: a == b
  - Not Equals: a != b
  - Less than: a < b
  - Less than or equal to: a <= b
  - Greater than: a > b
  - Greater than or equal to: a >= b

```
a = 10
b = 9
if b < a:
↔ # Notice the indentation

    print("b is less than a")
```

Conditionals

- Syntax

```
if <condition>:
    <statement>
else:
    <statement>
```

```
a = 10
b = 9
if b < a:
    print("b is less than a")
else:
    print(“a is greater than b or equal”)
```

3-way conditionals

- Syntax

```
if <condition>:
    <statement>
elif <condition>:
    <statement>
else:
    <statement>
```

```
a = 10
b = 9
if b < a:
    print("b is less than a")
elif b == a:
    print(“b is equal to a”)
else:
    print(”b is greater than a”)
```

```
a = 10
b = 9
if b < a:
    print("b is less than a")
elif b > a:
    print(“b is greater than a”)
else:
    print(”a and b are equal”)
```

Quiz 6

- Fill the gaps with the appropriate commands
  - Print “Hi”, if a is greater or equal than b

```
a = 22
b = 82

__________ a __________ b __________
print(“Hi”)
```

Quiz 6 Solution

- Fill the gaps with the appropriate commands
  - Print “Hi”, if a is greater or equal than b

```
a = 22
b = 82
if a>=b:
print(“Hi”)
```

Quiz 7

2:00

- Write a program on paper
  - The programme will prompt the user to input a number
- The program should output:
  - “Positive”, if the number is greater than 0
  - “Negative”, if the number is less than 0
  - “Zero”, if the number is 0

Quiz 7 solution

```
user_input =  int(input("Enter a number: "))


if user_input>0:
     print("Positive")
elif user_input<0:
     print("Negative")
else:
     print("Zero")
```

General Summary

- Compiler vs. Interpreter: Python is a line-by-line interpreter
- variables store data: name/type/value
- use `input` to get data from the user
- use `print` to output data to the user
- Data types: Integers, Floats, Strings (Text) and Boolean
- use `int()` to transform text into numerical data, `char()` and `float()` work similarly
- use `if`/`elif`/`else` to create conditional, data-driven execution