

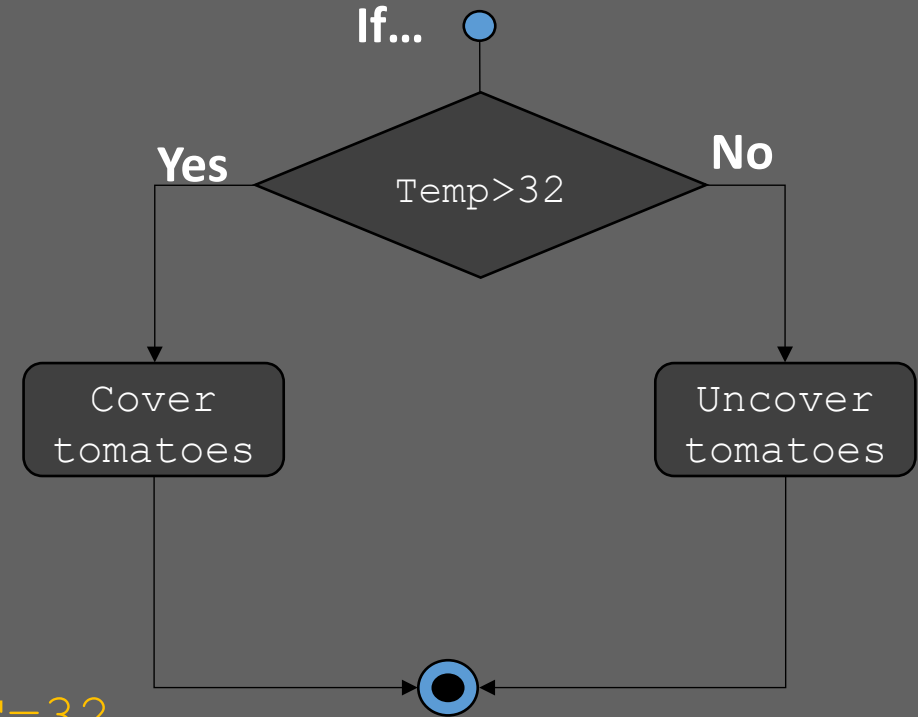


D: conditional execution

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

↔ # Notice the indentation

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

- 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