

CONDITIONAL EXECUTION

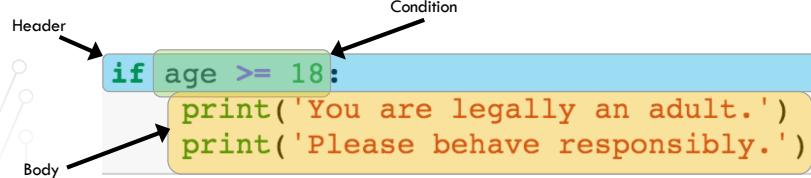
COMP130 – INTRODUCTION TO COMPUTING
DICKINSON COLLEGE

CONDITIONAL EXECUTION

- The **if statement** provides conditional execution in Python (and most other programming languages).

- The statements in the **body** execute only if the **condition** evaluates to True.
- Statements with a **header** and a **body** are called **compound statements**.

- The body of a compound statement is **defined** by **indentation** and contains other statements (including other compound statements).



ALTERNATIVE EXECUTION

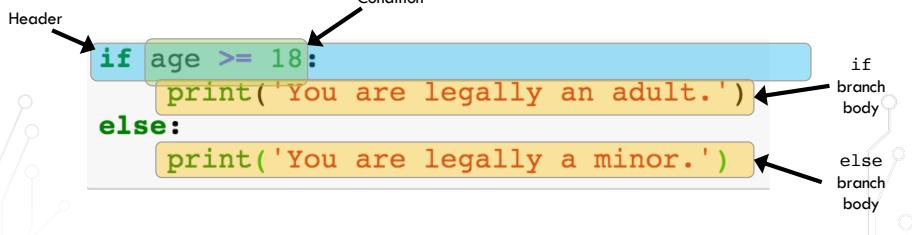
- The if / else statement provides two mutually exclusive **branches** of execution
 - If the condition is True the body in the if branch executes.
 - If the condition is False the body in the else branch executes.

LOGICAL OPERATORS

- Logical operators** (and, or, not) allow the formation of more complex Boolean expressions.

- Use parentheses to clarify meaning and order of operations.

```
if (age < 12) or (age >= 65):
    print('Discount applies.')
else:
    print('Regular price.')
```



CHAINED CONDITIONALS

- A **chained conditional** provides many mutually exclusive branches of execution.
 - Branches are evaluated top to bottom.
 - The body of the first branch for which the condition evaluates to True is executed and all other branches are skipped.
 - If no condition evaluates to True, the else branch will execute.

```
if meal == 'B':  
    print('2 eggs, hashbrowns and toast')  
elif meal == 'L':  
    print('Club sandwich, chips and pickle')  
elif meal == 'D':  
    print('Spaghetti with marinara and garden salad')  
else:  
    print('Sorry I did not recognize that meal.')
```

NESTED CONDITIONALS

- A **nested conditional** is a conditional that appears within the body of a branch of another conditional.

```
if (a > b) and (a > c):  
    print(a)  
else:  
    if (b > c):  
        print (b)  
    else:  
        print(c)
```

- More generally statements (including compound statements) can nest within other compound statement.
 - E.g. if within if, if within for, for within if, etc...

Nested
Conditional