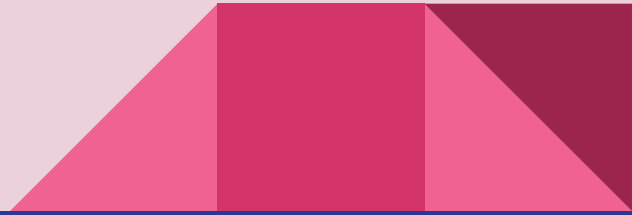
Python lists

Today’s agenda

1. Personal introduction
2. Pre-requisites
3. Python lists
    a. Lists
    b. Subsetting lists
    c. Manipulating lists
4. Assessment



Personal introduction

1. People call me ___

2. I live in ___

3. My superpower would be ___

Pre-requisites

Python shell

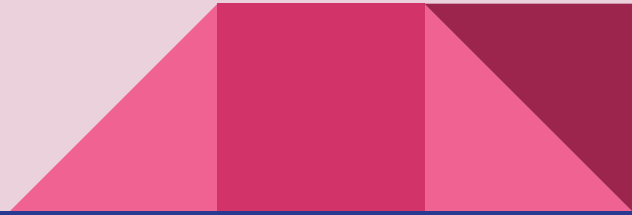
Python scripts

Basic arithmetic calculations

print(‘Hello World’)

comments

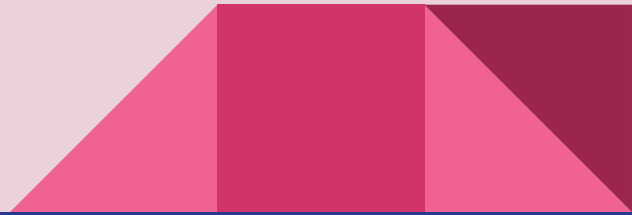
Python types (int, float, str, bool)



Python lists

Python lists

- Lists are used to store multiple items in a single variable.
- Lists are one of 4 built-in data types in Python used to store collections of data, the other 3 are Tuple, Set, and Dictionary, all with different qualities and usage.
- Lists are created using square brackets: [ ]
- List items are ordered, changeable, and allow duplicate values.
- List items are indexed, the first item has index [0], the second item has index [1] etc.



Python lists

Create a list

```
# Create list areas
areas = [hall,kit,liv,bed,bath]
```

List of lists

```
# house information as list of lists
house = [["hallway", hall],
         ["kitchen", kit],
         ["living room", liv],
         ["bedroom", bed],
         ["bathroom", bath]]
```

Subsetting lists

Subset

```
# Print out second element from areas
print(areas[1])

# Print out last element from areas
print(areas[-1])
```

Subset and calculate

```
# Sum of kitchen and bedroom area: eat_sleep_area
eat_sleep_area = areas[3] + areas[7]
```

Subsetting lists

Slicing and dicing

```
# Use slicing to create downstairs
downstairs = areas[:6]

# Use slicing to create upstairs
upstairs = areas[6:]
```

Manipulating Lists

Replace list elements

```
# Correct the bathroom area
areas[-1] = 10.50

# Change "living room" to "chill zone"
areas[4] = 'chill zone'
```

Extend a list

```
# Add poolhouse data to areas, new list is areas_1
areas_1 = areas + ["poolhouse", 24.5]
print(areas_1)

# Add garage data to areas_1, new list is areas_2
areas_2 = areas_1 + ["garage", 15.45]
print(areas_2)
```

Manipulating Lists

Delete list elements

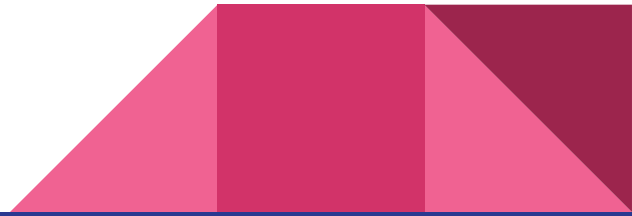
```
# 3. Delete list elements
x = ["a", "b", "c", "d"]
del(x[1])
```

Assessment

Assessment

Select the valid list:

A. [1, 3, 4, 2]
B. [[1, 2, 3], [4, 5, 7]]
C. [1 + 2, "a" * 5, 3]



Assessment

What will house[-1][1] return?

```
In [1]: house
Out[1]:
        [['hallway', 11.25],
         ['kitchen', 18.0],
         ['living room', 20.0],
         ['bedroom', 10.75],
         ['bathroom', 9.5]]
```

A. A float: the kitchen area
B. A string: "kitchen"
C. A float: the bathroom area
D. A string: "bathroom"