

Python lists

BEDU pilot class

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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

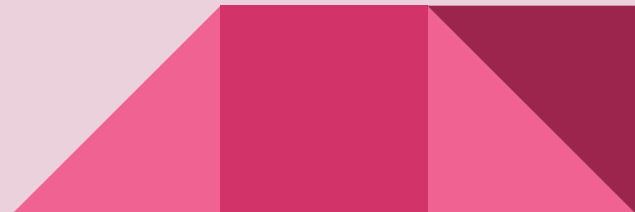
Python scripts

Basic arithmetic calculations

`print('Hello World')`

`# comments`

Python types (int, float, str, bool)



Python lists



Python lists

```
mylist = ["apple", "banana", "cherry"]
```

- 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

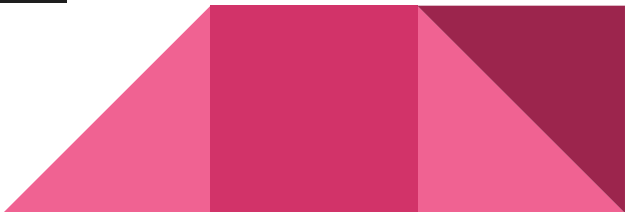
Subset

```
# 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?

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

```
In [1]: house
```

```
Out[1]:
```

```
 [['hallway', 11.25],  
  ['kitchen', 18.0],  
  ['living room', 20.0],  
  ['bedroom', 10.75],  
  ['bathroom', 9.5]]
```