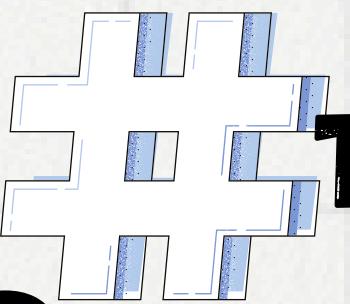


Arrays

Presented by Aaron-grp7



THEY ARE MUTABLE

What are arrays?

Arrays are fixed length data structures that are beside each other and stored like a memory.

The values inside array are called elements.

These elements can be accessed using indexes.

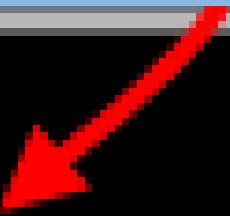
These elements are of the same type.



Arrays-Modules

```
#Activity1  
from array import *
```

```
1 import arrays  
2
```

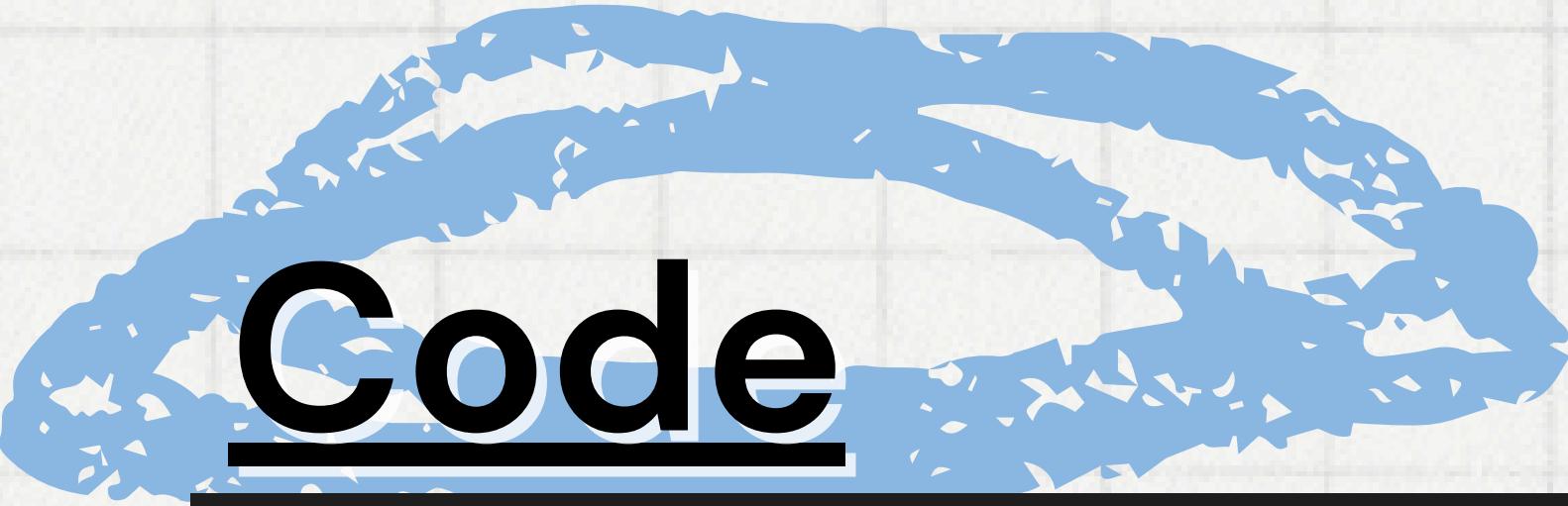


Making Arrays



Write a function that makes and prints a few arrays.

- **Create a new Python module in a file named “activities.py”.**
- **Add a function named “making_arrays”.**
- **Inside the function, create and print each of the following arrays.**
 - Size: 5, No prototype**
 - Size: 1, Prototype 0**
 - Size: 10, Prototype: "" (Empty string)**
 - Size: 20, Prototype: False**
- **Add a main function that calls making_arrays**

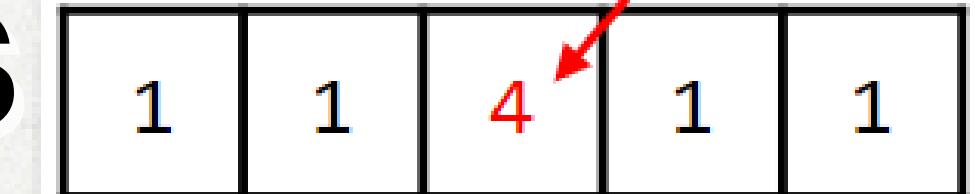


```
#Activity1
from array import *
def making_arrays():
    arr1=[None] *5
    arr2=[5]*10
    arr3=['']*10
    arr4=[False]*20
    print(arr1, '\n', arr2, '\n', arr3, '\n', arr4)
    length=len(arr4)
    print(length)
def main():
    making_arrays()
main()
```

#USING WHILE LOOP

Changing Array Values

```
an_array[2] = 4
```



0 1 2 3 4

Use a while loop to change the value at every index in an array.

7

- Add a function to your activities module named “while_fill” that declares a parameter for an_array.
- Use a while loop to set the value at each index to match the index.
 - e.g. the value at index 0 is 0, the value at index 1 is 1, and so on.
- Remember, you can use the len() function to get the length of the array!
- In your main function, create an array of size 10 and pass it as an argument into the while_fill function.
 - Print the array before and after you call the function

Code

```
#Activity 2

def while_fill(an_array):
    index=0
    while index<len(an_array):
        an_array[index]=index
        index=index+1 # or index+=1
def main():
    array=[None]*10
    #print(array) Just to show how it would look without changing None to the index values
    while_fill(array)
    print(array)
main()
```

#Using FOR LOOP

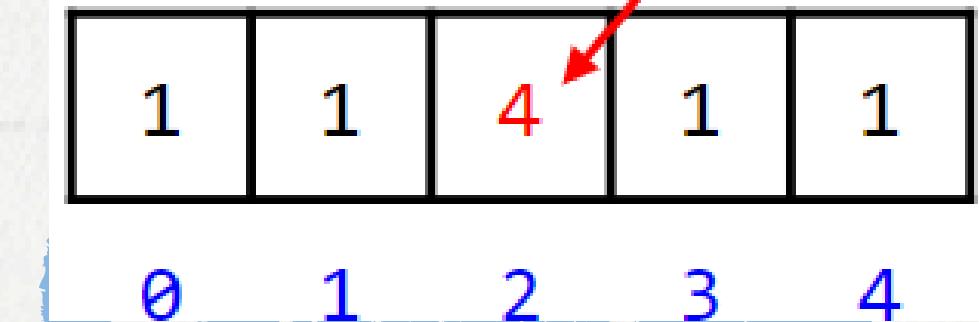
```
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- Remember, you can use the len() function to get the length of the array!
- In your main function, create an array of size 10 and pass it as an argument into the while_fill function.
 - Print the array before and after you call the function



Code

```
#Activity3
def for_fill(an_array):
    for index in range(len(an_array)):
        an_array[index]=index

def main():
    array=[None]*10
    print(array) #Just to show how it would look without changing None to the index value
    for_fill(array)
    print(array)
main()
```

**Thank you
very much!**