Essential_Python

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1 Essential Python

1. The random library has a function `random.randint(a, b)` which takes two arguments, a lower integer and a higher integer, it then returns a random integer not lower than the first and not higher than the second. Use this method, with the arguments `(1, 5)` to create a list of 10 random integers. A list comprehension would be a good solution, but not the only one.

[18]:
```
import random
numbers = []
for _ in range(10):
    number = random.randint(1,5)
    numbers.append(number)
print(numbers)
```

```
[4, 4, 2, 1, 3, 3, 3, 2, 1, 4]
```

2. Use an if statement to check if the number four is in the list. If it is, use the list `.count(a)` method to count the number of occurances of four, and insert this number into the f-string on the second line.

[24]:
```
if 4 in numbers:
    num = numbers.count(4)
    print(f"{num} fours found")
else:
    print("No fours found")
```

```
3 fours found
```

3. Lists have a `sort()` method which will sort the list in place. Use this method to sort the numbers.

[25]:
```
numbers.sort()
numbers
```

[25]:
```
[1, 1, 2, 2, 3, 3, 3, 4, 4, 4]
```

4. Lists have a `reverse()` method which will reverse order. Use this method to reverse the order of numbers.

[26]:
```
numbers.reverse()
numbers
```

[26]:
```
[4, 4, 4, 3, 3, 3, 2, 2, 1, 1]
```

5. Use the star syntax to assign the first item to the variable `a`, the middle items to the variable `b`, and the last item to variable `c`

[33]:
```
a,*b,c = numbers
print(a)
print(b)
print(c)
```

```
4
[4, 4, 3, 3, 3, 2, 2, 1]
1
```

6. Cast numbers to a set and assign the result to the variable `unique_numbers`.

[43]:
```
unique_numbers = set(numbers)
unique_numbers
```

[43]:
```
{1, 2, 3, 4}
```

7. Create a dictionary named `number_records` with the keys 'numbers' and 'unique_numbers' and the values `numbers` and `unique_numbers`.

[46]:
```
number_records = {
    'numbers': numbers,
    'unique_numbers': unique_numbers
}

number_counts = {}
for item in numbers:
    number_counts[item] = numbers.count(item)

print(number_records)
print(number_counts)
```

```
{'numbers': [4, 4, 4, 3, 3, 3, 2, 2, 1, 1], 'unique_numbers': {1, 2, 3, 4}}
{4: 3, 3: 3, 2: 2, 1: 2}
```

[ ]:
```

```