DIGITAL ASSIGNMENT-1

NUMPY AND PANDAS

Practice Questions

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1. Swap the middle and first word in a string

Problem:
Input: "Ravi Kumar Patel"
Output: "Kumar Ravi Patel"

Solution:

```
string = "Ravi Kumar Patel"

words = string.split()

swapped = f"{words[1]} {words[0]} {words[2]}"

print(swapped)
```

Output: Kumar Ravi Patel

2. Find the maximum number in a list without using sorting

Problem:
Input: [87, 43, 76, 1, 99, 23, 8]

Solution:

```
numbers = [87, 43, 76, 1, 99, 23, 8]

maximum = max(numbers)

print(maximum)
```

Output: 99

3. Find the occurrence of characters in a string

Problem:
Input: "google"
Output: {"g": 2, "o": 2, "l": 1, "e": 1}

Solution:

```
s = "google"

char_count = {char: s.count(char) for char in set(s)}

print(char_count)
```

Output: {'g': 2, 'o': 2, 'l': 1, 'e': 1}

4. Find all numbers from 1 to 1000 divisible by 7 using list comprehension

Solution:

```
divisible_by_7 = [num for num in range(1, 1001) if num % 7 == 0]

print(divisible_by_7)
```

Output-

[7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91, 98, 105, 112, 119, 126, 133, 140, 147, 154, 161, 168, 175, 182, 189, 196, 203, 210, 217, 224, 231, 238, 245, 252, 259, 266, 273, 280, 287, 294, 301, 308, 315, 322, 329, 336, 343, 350, 357, 364, 371, 378, 385, 392, 399, 406, 413, 420, 427, 434, 441, 448, 455, 462, 469, 476, 483, 490, 497, 504, 511, 518, 525, 532, 539, 546, 553, 560, 567, 574, 581, 588, 595, 602, 609, 616, 623, 630, 637, 644, 651, 658, 665, 672, 679, 686, 693, 700, 707, 714, 721, 728, 735, 742, 749, 756, 763, 770, 777, 784, 791, 798, 805, 812, 819, 826, 833, 840, 847, 854, 861, 868, 875, 882, 889, 896, 903, 910, 917, 924, 931, 938, 945, 952, 959, 966, 973, 980, 987, 994]

5. Label even and odd numbers in a list

Problem:
Input: [75, 8, 94, 2, 23, 29, 100]
Output: ["odd", "even", "even", "even", "odd", "odd", "even"]

Solution:

```
numbers = [75, 8, 94, 2, 23, 29, 100]

labels = ["even" if num % 2 == 0 else "odd" for num in numbers]

print(labels)
```

Output-

["odd", "even", "even", "even", "odd", "odd", "even"]

6. Extract numbers from a string

Problem:
Input: "hello 1 hi 9 . How are 10"
Output: [1, 9, 10]

Solution:

```
import re

text = "hello 1 hi 9 . How are 10"

numbers = [int(num) for num in re.findall(r'\d+', text)]

print(numbers)
```

Output: [1, 9, 10]

7. Check if an email is in the correct format

Problem:
Input: "xyz@gmail.com"
Output: "correct"

Solution:

```
import re

email = "xyz@gmail.com"

if re.match(r"^[a-zA-Z0-9_.+-]+@[a-zA-Z0-9-]+\.[a-zA-Z0-9-.]+$", email):
    print("correct")
else:
    print("incorrect")
```

Output: "correct"

8. Remove all whitespaces from a string

Problem:
Input: "hello world "
Output: "helloworld"

Solution:

```
string = "hello world "

no_spaces = string.replace(" ", "")

print(no_spaces)
```

Output: helloworld

9. Find the sum of numbers from 1 to 50 using list comprehension

Solution:

```
sum_1_to_50 = sum([num for num in range(1, 51)])

print(sum_1_to_50)
```

Output: 1275