باستخدام list Comprehension قم بالتالي

1. إيجاد مجموع الأرقام التي تقبل القسمة على 3 بين 20 و140، ثم قم بطاعة مجموع هذه الأرقام، وكذلك الأرقام التي تقبل القسمة على 3 بين 20 و140

Write code to find the sum of numbers that are divisible by 3 and between 20 and 140 then print the numbers separated by a comma.

{//}

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```
Write code to find the sum of numbers that are divisible by 3 and between 20 and 140 then print the numbers separated by a comma

# find the numbers that are divisible by 3 and between 20 and 140

# find the sum of the numbers

# print the sum

# convert the numbers to strings

# print the numbers separated by a comma

##########

# other way to print the numbers separated by a comma
```

{//}

```python
# find the numbers that are divisible by 3 and between 20 and
140
divisible_by_3 =[num for num in range(20, 141) if num % 3 == 0]

# find the sum of the numbers
total = sum(divisible_by_3)

# print the sum
print(f"The sum of the numbers divisible by 3 between 20 and
140 is {total}.")

# convert the numbers to strings
str_nums = [str(num) for num in divisible_by_3]

# print the numbers seperated by a comma
print(f"The numbers are {', '.join(str_nums)}.")

#########
# other way to print the numbers seperated by a comma
print("The numbers are: ")
print(*divisible_by_3, sep=", ")
```

2.قم بعمل قائمة تحتوي على 20 رقم عشوائي بين 100 و1000

Make a List with 20 random numbers between 100 and 1000.

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```
make list with 20 random numbers between 100 and 1000

# make list with 20 random numbers between 100 and 1000 using
list comprehension and random.randint()
```

```python
import random

# make list with 20 random numbers between 100 and 1000 using
list comprehension and random.randint()
random_nums = [random.randint(100, 1_000) for _ in range(20)]
print(random_nums)
```

3.قم بعمل قائمة تحتوي على 100 رقم عشوائي بين 100 و10,000 بحيث تكون هذه الأرقام تقبل القسمة على الرقمين 3 و5

Make list with 100 random numbers between 100 and 10,000 that are divisible by 3 and 5.

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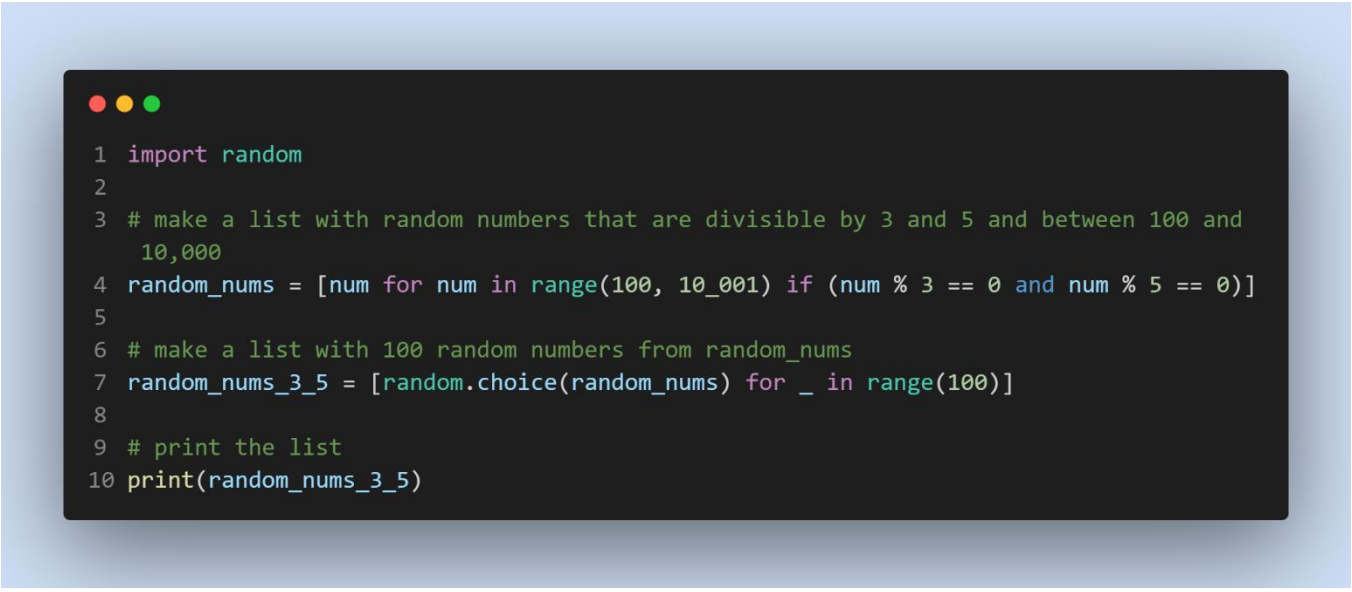
```
# make a list with random numbers between 100 and 10,000 that
are divisible by 3 and 5


# make a list with 100 random numbers from random_nums
```



```python
import random

# make a list with random numbers that are divisible by 3 and 5 and between 100 and 10,000
random_nums = [num for num in range(100, 10_001) if (num % 3 == 0 and num % 5 == 0)]

# make a list with 100 random numbers from random_nums
random_nums_3_5 = [random.choice(random_nums) for _ in range(100)]

# print the list
print(random_nums_3_5)
```

4.قم بجعل كل حروف القائمة التالية uppercase

Modify this list of words to make All words are uppercase.

```
# list of words
words = [
        'have', 'that', 'they', 'with', 'this', 'from',
'which', 'would', 'will', 'there',
        'make', 'when', 'more', 'other', 'what', 'time',
'about', 'than', 'into', 'could',
        'state', 'only', 'year', 'some', 'take', 'come',
'these', 'know', 'like', 'then',
        'first', 'work', 'such', 'give', 'over', 'think',
'most', 'even', 'find', 'also',
        'after', 'many', 'must', 'look', 'before', 'great',
'back', 'through', 'long',
        'where', 'much', 'should', 'well', 'people', 'gouda',
'just', 'because', 'good',
        'each', 'those', 'feel', 'seem', 'high', 'place',
'little', 'world', 'very', 'still',
        'nation', 'hand', 'life', 'tell', 'write', 'become'
        ]
```

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```
Modify this list of words to make All words are uppercase


# make all words uppercase and add them to a list named
upper_words using upper method and list comprehension
```

```python
# make all words uppercase and add them to a list named
upper_words
upper_words = [word.upper() for word in words]
print(upper_words)
```

{//}

5. قم بتعديل القائمة words للحصول على هذا الناتج الذي في الصورة

Edit words list to gain the following outputs.

```
words = [["Hello", "from", "Codezilla"],
    ["Python", "Course", "is", "awesome"],
    ["I", "enjoy", "learning", "Python", "with", "Codezilla"]]
```

```
['Hello from Codezilla', 'Python Course is awesome', 'I enjoy learning Python with Codezilla']
['HELLO-FROM-CODEZILLA', 'PYTHON-COURSE-IS-AWESOME', 'I-ENJOY-LEARNING-PYTHON-WITH-CODEZILLA']
```

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```
# A. convert each inner list to a string and join them with a space and add them to a list named sentences

# B. Make another list named modified_sentences replace spaces with dashes and convert each word to uppercase
```

```python
# A. convert each inner list to a string and join them with a space and add them to a list named sentences
sentences = [' '.join(word) for word in words]
print(sentences)

# B. Make another list named modified_sentences replace spaces with dashes and convert each word to uppercase
modified_sentences = [sentence.replace(' ', '-').upper() for sentence in sentences]
print(modified_sentences)
```

6.قم بتحويل جميع الأرقام التالية إلى أرقام موجبة

Convert all the following numbers into positive numbers.

```
nums = [44, 64, -12, 0, -5, 34, -55, 67, -88, -99]
```

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```
Make all the numbers in the list positive

# get the absolute value of each number
```

```python
# get the absolute value of each number
positive_nums = [abs(num) for num in nums]


print(positive_nums)
```

7.قم بعمل قائمة جديدة تحتوي على جميع الكلمات التي داخل القائمة التالية، بحيث تكون جميع الكلمات داخل نفس ال list، وتحصل على المخرج التالي.

Flat the following nested list.

```
nested_list = [["Hello", "from", "Codezilla"],
    ["Python", "Course", "is", "awesome"],
    ["I", "enjoy", "learning", "Python", "with", "Codezilla"]]
```

```
Output:

['Hello', 'from', 'Codezilla', 'Python', 'Course', 'is',
'awesome', 'I', 'enjoy', 'learning', 'Python', 'with',
'Codezilla']
```

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```
Flat a nested list

# flat the list using a nested for loop inside a list
comprehension
```

```
nested_list = [["Hello", "from", "Codezilla"],
    ["Python", "Course", "is", "awesome"],
    ["I", "enjoy", "learning", "Python", "with", "Codezilla"]]

# flat the list using a nested for loop inside a list
comprehension
flat_list = [word for inner_list in nested_list for word in
inner_list]
print(flat_list)
```

8.قم بعمل قائمة list من القائمة التالية، بحيث تحتوي على مجموعة من tuples بحيث يحتوي كل tuple على الكلمة كأول عنصر وعدد حروف الكلمة كالعنصر الثاني داخل tuple.

Make a list of tuples with the first element as the word and the second element as the length of the word.

```
words = ["Hello", "from", "Codezilla", "Python", "Course"]
```

```
# Output example:

[('Hi', 2), ('Python', 6)]
```

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```
Make a list of tuples with the first element as the word and
the second element as the length of the word

# make a list of tuples with the first element as the word and
the second element as the length of the word
# using a list comprehension and the len() function
# get each word and its length and add them to a tuple
```

```
word_length = [(word, len(word)) for word in words]
print(word_length)
```