Python Prework Overview

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Question 1 - Write a function to print "Hello_USERNAME

Solution

```
def hello_name(user_name):
    print("Hello" + user_name.upper() + "!")

hello_name('Carlos')
```

Explaination

Our function takes in one argument, which in this case is "user_name".

When the function is executed/called, python will look for this parameter value and print out whatever was placed there.

Question 2 - Print first odd numbers between 1 and 100

Solution

```
def odd_numbers():
    for i in range(0,101,2):
        print(i)

def odd_numbers2():
    numbers = list(range(0, 101))
    for number in numbers:
        if number % 2 != 0:
            print(number)

odd_numbers()
```

Explaination

FIRST SOLUTION: Our function does not take in any arguments.
When the function is called/executed, a for loop will START at 0, STOP at 101 and STEP/INCREMENT by 2 each time. Then prints the numbers as they appear

SECOND SOLUTION: We create a list of numbers inside the same range as before. We then find the remainder and print numbers with a remainder of zero

Question 3 - Write a function returns the max number in a given list

Solution

```
def max_num_in_list(a_list):
    max_num = max(a_list)
    return max_num

test = max_num_in_list([2,3,5,8,9])
print(max_num_in_list([2,3,5,8,9]))
```

Explaination

Our function takes in one argument, which in this case is "a_list".

When the function is executed/called, python will look for this parameter (Which we expected to be a list of numbers given the content of our function) and return the highest number

Question 4 - Write a function to return if the given year is a leap year a function returns the max number in a given list

Solution

```
def is_leap_year(a_year):
    if a_year % 4 == 0 and a_year % 100 != 0:
        print(f'{a_year} is a leap year')
    elif a_year % 400 == 0:
        print(f'{a_year} is a leap year')
    else:
        a_year = False
        print(f'{a_year}')


# Question 4 1.b solution

def is_leap(a_year):
    if a_year % 4 == 0 and (a_year % 400 == 0 or a_year % 100 != 0):
        print(True)
    else:
        print(False)

is_leap_year(2019)
```

Explanation

Our function takes in one argument, which in this
is "a_year".
n the function is executed/called, python will
for this parameter (Which we expected to be
nber given the content of our function) we
proceed through a group of if statements
litional statements).

econd solution produces the exact same
, however, this time we use the keywords
/ OR.

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Question 5 - Write a function to check if all numbers in a list are consecutive

Solution

```
def is_consecutive(a_list):
    i = 0
    status = True
    while i < len(a_list) - 1:
       if a_list[i] + 1 == a_list[i + 1]:
           i += 1
       else:
            status = False
            break
    print(status)
```

Explaination

Our function takes in one argument, which in this case is "a_list". When the function is executed/called, python will look for this parameter (Which we expected to be a list of numbers given the content of our function) we then set two variables i = 0 and status = True

From here we use a WHILE loop to check if i is LESS THAN the length of "a_list" minus 1. If that's true, we start the loop...if not we don't.

Once inside the loop, we check the current number plus 1 with the next number in the list and if they are equal we add 1 to i.
If they ARE NOT equal however, we break our loop because we have now found out our numbers are NOT consistent.