Margaret.Oluwadare_Second_assignment - Copy (2)

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1 WTFC2023 DATA SCIENCE AND AI GROUP C SUB GROUP1

2 PYTHON EXERCISE CLASS WORK 3

2.1 MARGARET OLUWADARE(WTF/23/DS/C/030)

QUESTION 1: Write a function called showNumbers that takes a parameter called limit. It should print all the numbers between 0 and limit with a label to identify the even and odd numbers. For example, if the limit is 3, it should print:0 EVEN 1 ODD 2 EVEN 3 ODD

[2]:
```
##Q1 SOLUTION
def showNumber(limit):
    for i in range(start, end+1):
        if(i%2==0):
            print(i,' EVEN')
        else:
            print(i,' ODD')

start = int(input('Start at:'))
end= int(input('End at:'))
showNumber(22)
```

```
Start at:0
End at:45
0  EVEN
1  ODD
2  EVEN
3  ODD
4  EVEN
5  ODD
6  EVEN
7  ODD
8  EVEN
9  ODD
10  EVEN
11  ODD
12  EVEN
```

```
13  ODD
14  EVEN
15  ODD
16  EVEN
17  ODD
18  EVEN
19  ODD
20  EVEN
21  ODD
22  EVEN
23  ODD
24  EVEN
25  ODD
26  EVEN
27  ODD
28  EVEN
29  ODD
30  EVEN
31  ODD
32  EVEN
33  ODD
34  EVEN
35  ODD
36  EVEN
37  ODD
38  EVEN
39  ODD
40  EVEN
41  ODD
42  EVEN
43  ODD
44  EVEN
45  ODD
```

QUESTION 2: Write a function that returns the sum of multiples of 3 and 5 between 0 and limit (parameter). For example, if limit is 20, it should return the sum of 3, 5, 6, 9, 10, 12, 15, 18, 20.

[3]:
```python
## Q2 SOLUTION
def mult3_5(limit):
    tsum = 0
    for i in range(tsum, limit):
        if (i%3==0):
            print(i,' Multiple of 3')
        if(i%5==0):
            print(i,' Multiple of 5')
        if (i%3 == 0 or i%5 == 0):
            tsum = tsum+i
            print ("Sum is :",tsum)
```

```
start = int(input('Start at:'))
end= int(input('End at:'))
mult3_5(end)
```

```
Start at:0
End at:45
0  Multiple of 3
0  Multiple of 5
Sum is : 0
3  Multiple of 3
Sum is : 3
5  Multiple of 5
Sum is : 8
6  Multiple of 3
Sum is : 14
9  Multiple of 3
Sum is : 23
10  Multiple of 5
Sum is : 33
12  Multiple of 3
Sum is : 45
15  Multiple of 3
15  Multiple of 5
Sum is : 60
18  Multiple of 3
Sum is : 78
20  Multiple of 5
Sum is : 98
21  Multiple of 3
Sum is : 119
24  Multiple of 3
Sum is : 143
25  Multiple of 5
Sum is : 168
27  Multiple of 3
Sum is : 195
30  Multiple of 3
30  Multiple of 5
Sum is : 225
33  Multiple of 3
Sum is : 258
35  Multiple of 5
Sum is : 293
36  Multiple of 3
Sum is : 329
39  Multiple of 3
Sum is : 368
```

```
40  Multiple of 5
Sum is : 408
42  Multiple of 3
Sum is : 450
```

QUESTION 3: Write a function called show_stars(rows). If rows is 5, it should print the following:**********

[4]:
```
## q3 solution
def show_stars(rows):
    for i in range(start, end+1):
        print("*" *i)

start = int(input('Start at:'))
end= int(input('End at:'))
show_stars(end)
```

```
Start at:1
End at:10
*
**
***
****
*****
******
*******
********
*********
**********
```

QUESTION 4:Write a function that prints all the prime numbers between 0 and limit where limit is a parameter.

[5]:
```
##Q4 SOLUTION
def prime(limit):
    for x in range(start, end + 1):
        if x > 1:
            for i in range(2, x):
                if (x % i) == 0:
                    break
            else:
                print(x)

start = int(input('Start at:'))
end= int(input('End at:'))
print("Prime numbers between", start, "and", end, "are:")
prime(end)
```

```
Start at:0
End at:45
```

```
Prime numbers between 0 and 45 are:
2
3
5
7
11
13
17
19
23
29
31
37
41
43
```

QUESTION 5: Write a program (function!) that takes a list and returns a new list that contains all the elements of the first list minus all the duplicates.

[6]:
```
## Q5 SOLUTION
def duplx(x):
    y = []
    for i in x:
        if i not in y:
            y.append(i)
            return y

a=list(input('Desired list:: '))
print (''.join(a))
print(' '.join(duplx(a)))
```

```
Desired list:: [1, 2, 3, 2, 5, 3, 3, 5, 6, 3, 4, 5, 7]
[1, 2, 3, 2, 5, 3, 3, 5, 6, 3, 4, 5, 7]
[
```

QUESTION 6: Write a function to ask the user for a number and determine whether the number is prime or not.

[7]:
```
## Q6 SOLUTION
def prime(num):
    for x in range (2, num):
        if num > 1:
            if (num % x) == 0:
                return False
            else:
                return True
            print("Prime numbers are:", (x))

num= int(input('Number requires: '))
```

```
prime(num)
```

```
Number requires: 7891
```

[7]:
```
True
```

QUESTION 7:Write a program that asks the user how many Fibonnaci numbers to generate and then generates them.

[8]:
```
#Q7 SOLUTION
def fibseries():
    i = 1
    if x == 0:
        fibnum = []
    elif x == 1:
        fibnum = x
    elif x == 2:
        fibnum = [x, x]
    elif x > 2:
        fibnum = [x-1, x-1]
        while i < (x - 1):
            fibnum.append(fibnum[i] + fibnum[i-1])
            i += 1
    return fibnum

x = int(input("How many numbers that generates?:"))
print(fibseries())
```

```
How many numbers that generates?:20
[19, 19, 38, 57, 95, 152, 247, 399, 646, 1045, 1691, 2736, 4427, 7163, 11590,
18753, 30343, 49096, 79439, 128535]
```

QUESTION 8: Write a function that ask the user for a string and print out whether this string is a palindrome or not.

[9]:
```
##Q8 SOLUTION
def palindrome(p):
    """function checks and print a passed string as palindrome or not"""
    lenp = len(p) #length of word
    p1 = 0   #first letter of word
    pn = lenp -1
    status = 1
    while(p1<pn):
           if(p[p1]==p[pn]):
               p1=p1+1
               pn=pn-1
           else:
               status = 0
               break
```

```
    return int(status)
p = input("Enter the string: ")
status= palindrome(p)
if(status):
    print("It is a palindrome ")
else:
    print("It is not a palindrome")
```

```
Enter the string: OMODOLAPO
It is not a palindrome
```

QUESTION 9: Write a function that takes an ordered list of numbers (a list where the elements are in order from smallest to largest) and another number.

[10]:
```
### QUESTIN 9 SOLUTION
def listnumb(x, i):
    check = x
    check.sort()
    first = check[0]
    last = check[-1]

    while i >= first and i <= last:
        midpt = (len(check)-1)//2
        midelm = check[midpt]

        if len(check) <= 2:
            if i in check:
                print(f"{i} is in the list")
                break
            else:
                print(f"{i} is not in the list")
                break

        if i == midelm:
            print(f"{i} is in the list")
            break

        elif i > midelm:
            check = check[midpt:]

        elif i < midelm:
            check = check[:midpt+1]

    if i < first or i > last:
        print(f'{i} is out of list range.')


a = [0, 1, 3, 4, 5, 6, 7, 8, 9]
```

```
print(sorted(a))
listnumb(a, int(input('Find:')))
```

```
[0, 1, 3, 4, 5, 6, 7, 8, 9]
Find:67
67 is out of list range.
```

QUESTION 10: Create a program that asks the user to enter their name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old

[11]:
```
###USED THIS
def nameage(name, age):
    if age > 100:
        print('Sorry, you are overaged for this test')
    else:
        Centinary = 2022 - age + 100
        print(f"Hello {name} you are {age} years old now. You'll be 100 in the␣
 ↪year {Centinary}!")

name = str(input("Enter your name: "))
age =int(input("Enter your age: "))
nameage(name, age)
```

```
Enter your name: DOLAPO
Enter your age: 17
Hello DOLAPO you are 17 years old now. You'll be 100 in the year 2105!
```

[ ]:
```

```