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COURSE: CCC634 (A Gentle Intro to Python)

ASSIGNMENT: 4

1. A professor writes every number with a secret code on a board (where he is multiplying every digit of the number) as given below in the sample patterns. He wants to automate the process using Python. Can you help him? Sample pattern:

235 = 30

150 = 0

151 = 5

```
n=int(input("Enter the number: "))
str1=str(n)
list1=list(str1)
result=1
for elem in list1:
    temp=int(elem)
    result=result*temp

print(result)
```

↻ Enter the number: 151
5

2. Soham is playing a game of numbers where Soham is counting till an input number less than 100. Each time when Soham encounters a multiple of five, he just passes (keep mum) instead of a number. Write a program for implementing the same.

Sample Input:

12 #A number less than 100

Sample Output:

1 2 3 4 6 7 8 9 11 12

Sample Input:

101

Sample Output:

Invalid input

```
n=int(input("Enter the number: "))
if n>100:
    print("Invalid Input")
else:
    for i in range(1,n+1):
        if i%5==0:
            continue
        else:
            print(i)
```

↻ Enter the number: 55

1
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3. Richa earned 45rs for the first month. Her salary got doubled in second month and triple in third month and so on. Write a python program to print her salary for coming "n" months individually using while loop. Also compute how much she should have earned in total after "n" months.

```
sal=45
n=int(input("Enter the number of months: "))
print("Individual salary for", n, "months: ")
total=0
for i in range(1,n+1):
    print(i*45)
    total=total+(i*45)

print("The total salary is" , total)
```

```
↩ Enter the number of months: 5
Individual salary for 5 months:
45
90
135
180
225
The total salary is 675
```

4. A number is said to be a magic number, if the sum of its digits is calculated till a single digit recursively by adding the sum of the digits after every addition. If the single digit comes out to be 1, then the number is a magic number.

For example-

Number= 50113

=> 5+0+1+1+3=10

=> 1+0=1

This is a Magic Number

Write a program to check whether given number is magic or not?

```
def sum_of_digits(n):
    str1=str(n)
    list1=list(str1)
    sum1=0
    for elem in list1:
        digit1=int(elem)
        sum1=sum1+digit1
    return sum1

def is_magic_number(n):
    while n >= 10:
        n = sum_of_digits(n)

    return n == 1

num = int(input("Enter a number: "))
if is_magic_number(num):
    print(f"{num} is a Magic Number.")
```

```
else:  
    print(f"{num} is not a Magic Number.")
```

↻ Enter a number: 12
12 is not a Magic Number.