```
# Guessing number game
import random       #importing random class for generating random number
r=random.randint(1,100)   #storing a random number between 1-100 in a variable r
c=0     # initializing variable c to 0 so that the count will be incremented later
print("guess a number between 1-100")     # asking a user to enter a number
while(c<100):          #running a while loop to take a input every time user make a wrong guess
    n=int(input())     # taking the input from the user
    if(n==r):          #checking the condition if the entered number is equal to the generated random number
        print("Congrats u won the game")     #if the condition is write printing a message and breaking while loop
        break
    elif(n<r):    #if the entered number is less than random number asking the user to enter a greater number
        print("ur number is less than actual number.... please try another number which is geater than",n)
        #c=c+1
    elif(n>r):   #if the entered number is greater than random number asking the user to enter a lesser number
        print("ur number is greater than actual number... please try another number which is less than",n)
    c=c+1    #incrementing count every time user guess a number, either the number is lee or great the count will be incremented
print("The actual number is ",r)    #printing the actual number when the guess is correct
print("The no.of attempts u made : ",c)   # printing the number of guesses the user made to guess the actual number
```

```
guess a number between 1-100
90
ur number is greater than actual number... please try another number which is less than 90
85
ur number is greater than actual number... please try another number which is less than 85
80
ur number is greater than actual number... please try another number which is less than 80
75
ur number is greater than actual number... please try another number which is less than 75
70
```

```
ur number is greater than actual number... please try another number which is
less than 70
65
ur number is greater than actual number... please try another number which is
less than 65
60
ur number is greater than actual number... please try another number which is
less than 60
55
ur number is greater than actual number... please try another number which is
less than 55
50
Congrats u won the game
The actual number is  50
The no.of attempts u made :  8
```

In [2]:

```
# Sum and product of digits of a number
def sumof_digit(n):   # defining a function with name as sumof_digits with 1
argument that is a number
    s=0              # initially we declare the sum as 0 so we can increment
it later
    while(n!=0):     #running a while loop.Everytime if the number is not equ
al to 0 it enters in to loop
        r=n%10       #storing the remainder in a variable r  here 278%10 = 8
        s=s+r        #adding the remainder to the variable s. here s=0+8 = 8
        n=n//10      # here we extract the quotient. 278//10 = 27 this 27 can
be used in next iteration
    return s;         #after loop ends the sum will be returned
def productof_digit(n):  #defining a function with name as productof_digits w
ith 1 argument that is a number
    p=1                #initially we declare a variable called p and store 1
in it. later the product will be multiplied
    while(n!=0):     #running a while loop.Everytime if the number is not equ
al to 0 it enters in to loop
        r=n%10      #storing the remainder in a variable r  here 278%10 = 8
        p=p*r       # multiplying the remainder with p that is 1 here p=1*8=8
        n=n//10     #here we extract the quotient. 278//10 = 27 this 27 can b
e used in next iteration
    return p       #after loop ends the product will be returned
n=int(input("Enter a number : "))   # reading a number from the user
a,b=sumof_digit(n),productof_digit(n)   #storing the result in a variables
print("Sum of digits of the number is : ",a)  # printing the sum of digits of
a number
```

```
print("Product of digits of the number is : ",b)   #printing the product of d
igits of a number
```

```
Enter a number : 278
Sum of digits of the number is :  17
Product of digits of the number is :  112
```

In [3]:

```
#check whether entered string is palindrome or not
def palindrome(s):  # defining a function with name called palindrome with an
argument as a string
    s1=s[::-1]   # storing the reverse of the string entered in another strin
g called s1
    if(s1==s):    # checking the condition if the stored reverse of the strin
g is equal to the original string entered
        return "The entered string is palindrome"    # printing a message tha
t the entereg string is palindrome if condition satisfies
    else:   # if the condition fails printing a message as the entered string
is not a palindrome
        return "The entered string is not a palindrome"
s=input("Enter a string : ")    #reading a string from user
k=palindrome(s)   #storing the function in avariable k
print(k)     #printing the result
```

```
Enter a string : madam
The entered string is palindrome
```

In [4]:

```
#finding factorial of a number
def factorial(n):   # defining a function with name factorial with argument a
s a number
    f=1             # initializing f variable to 1
    for i in range(n,1,-1):   # running a for loop from n to 1
        f=f*i     # multiplying the i value with 1 that is f=1*6  next f=6*5
next f=30*4  next f=120*3  next f=360*2=720
    return f   # returning the final factorial of a number
n=int(input("Enter a number : "))    # reading the number from user
k=factorial(n)   # storing the function in a variable
print("factorial of entered number is ",k)   # printing the value
```

```
Enter a number : 6
factorial of entered number is  720
```

In [5]:

```
# prime numbers
n=int(input("enter range : "))     #reading the range from the user
a=[]                            # taking a empty list later we append the prim
e numbers to the list
```

```
for i in range(2,n+1):     # running a for loop with variable i and range fro
m 2 to n because prime numbers start from 2
    c=0                  # initialising c to 0 for every i loop
    for j in range(1,i+1):   # running another loop with j and range 1 to i
        if(i%j==0):         # checking the condition if i%j == 0.
            c=c+1          # if the condition satisfies incrementing the count
. only prime numbers have a and itself as factors
    if(c==2):          # checking the condition if count == 2 only prime numbe
rs havecount value as 2
        a.append(i)     # if the condition satisfies appending the number to t
he list
for i in a:            # running a for loop for printing the numbers in the lu
st
    print(i,end=" ")    # printing the prime numbers
```

```
enter range : 20
2 3 5 7 11 13 17 19
```

In [ ]: