



# Learning to program

## Basic

Activities  
Iterative sentences  
**SOLUTIONS**

### 1) N first integer numbers

```
N=int(input("How many numbers do you want to print?"))

print("First ", N, " integer numbers:")

#With for and range
for i in range(1,N+1):
    print(i)

#With while and a counter
cont=1
while cont <=N:
    print(cont)
    cont=cont+1
```

### 2) Fact of a number.

```
n=int(input("Enter an integer number:"))

#With a -for & range-
fact=1
for i in range(n,0,-1):
    fact=fact*i

print("(for) Fact of ", n, " is ", fact)

#With a -while & cont-
cont=n
fact=1
while cont>0:
    fact=fact*cont
    cont=cont-1

print("(while) Fact of ", n, " is ", fact)
```

### 3) Sum of odd numbers.

```
n=int(input("Enter a int number:"))

#With a -for & range-
sumOdds=0

for i in range(n):
    if i%2==0:
        sumOdds=sumOdds+i

print("Sum of odds less than ", n, " is ", sumOdds)
```



#### 4) Max and min of a sequence.

```
print("Enter a sequence of int numbers. enter 0 to end.")
num=int(input("First number:"))
max=0
min=num

while num!=0:
    if num<min:
        min=num

    if num>max:
        max=num

    num=int(input("Next number:"))

print("The maximum is ", max, " and the minimum is ", min)
```

#### 5) Number of vowels of a sequence of letters.

```
print("Enter a sequence of characters. Enter '.' to end.")
car=input("First character:")
contVowels=0

while car!=".":

    if car in ("a","e","i","o","u","A","E","I","O","U"):
        contVowels=contVowels+1
        car=input("Next character:")

print("The number of vowels you have typed is ", contVowels)
```

#### 6) How many times appears each vowel in a sequence.

```
print("Enter a sequence of characters. Enter '.' to end.")
car=input("First character:")

contA=0
contE=0
contI=0
contO=0
contU=0

while car!=".":

    if car=="a" or car=="A":
        contA=contA+1
    elif car=="e" or car=="E":
        contE=contE+1
    elif car=="i" or car=="I":
        contI=contI+1
    elif car=="o" or car=="O":
        contO=contO+1
    elif car=="u" or car=="U":
        contU=contU+1

    car=input("Next character:")

print("The number of vowels you have typed is: ")
print("Number of a's:", contA)
print("Number of e's:", contE)
print("Number of i's:", contI)
print("Number of o's:", contO)
print("Number of u's:", contU)
```



## 7) Binary to decimal.

```
print("Enter a binary number. Begin with the one at the right.",
      " Enter a 2 to end.")

binaryNumber=""

binary=int(input("First bit:"))

dec=0
cont=0

while binary==0 or binary ==1:

    dec=dec+binary*(2**cont)
    binaryNumber=str(binary)+binaryNumber

    cont=cont+1
    binary=int(input("Next bit:"))

print("The binary ", binaryNumber, "in decimal is equal to ", dec)
```

## 8) User/password module.

```
user="Angel"
password="deMiguel"

print("*****LOGIN*****")

tryUser=input("User: ")
tryPassword=input("Password: ")

countAttempts=1

while (tryUser!=user or tryPassword!=password) and countAttempts<3:

    print("User or password incorrect. Try again.")
    print()

    tryUser=input("User: ")
    tryPassword=input("Password: ")
    countAttempts+=1

if tryUser!=user or tryPassword!=password:
    print("ACCESS DENIED!!!!")

else:
    print("ACCESS ALLOWED!!!!")
    print("You are going to be redirected to the system...")
```

