

```
# -*- coding: utf-8 -*-  
"""session2-operators-if-else-loops.ipynb
```

Automatically generated by Colab.

*Original file is located at
https://colab.research.google.com/drive/1dJIncqudN2wFNZ1P3_1sdJX76pzw-s-4*

```
# Operators in Python
```

```
- Arithmetic Operators  
- Relational Operators  
- Logical Operators  
- Bitwise Operators  
- Assignment Operators  
- Membership Operators  
"""
```

```
# Arithmetic Operators
```

```
print(5+6)
```

```
print(5-6)
```

```
print(5*6)
```

```
print(5/2)
```

```
print(5//2)
```

```
print(5%2)
```

```
print(5**2)
```

```
# Relational Operators
```

```
print(4>5)
```

```
print(4<5)
```

```
print(4>=4)
```

```
print(4<=4)
```

```
print(4==4)
```

```
print(4!=4)
```

```
# Logical Operators
```

```
print(1 and 0)
```

```
print(1 or 0)
```

```
print(not 1)
```

```
# Bitwise Operators
```

```
# bitwise and
```

```
print(2 & 3)
```

```
# bitwise or
```

```
print(2 | 3)
```

```
# bitwise xor
```

```
print(2 ^ 3)
```

```
print(~3)
```

```
print(4 >> 2)
```

```

print(5 << 2)

# Assignment Operators

# =
# a = 2

a = 2

# a = a % 2
a %= 2

# a++ ++a

print(a)

# Membership Operators

# in/not in

print('D' not in 'Delhi')

print(1 in [2,3,4,5,6])

# Program - Find the sum of a 3 digit number entered by the user

number = int(input('Enter a 3 digit number'))

# 345%10 -> 5
a = number%10

number = number//10

# 34%10 -> 4
b = number % 10

number = number//10
# 3 % 10 -> 3
c = number % 10

print(a + b + c)

"""# If-else in Python"""

# login program and indentation
# email -> nitish.campusx@gmail.com
# password -> 1234

email = input('enter email')
password = input('enter password')

if email == 'nitish.campusx@gmail.com' and password == '1234':
    print('Welcome')
elif email == 'nitish.campusx@gmail.com' and password != '1234':
    # tell the user
    print('Incorrect password')
    password = input('enter password again')
    if password == '1234':
        print('Welcome,finally!')
    else:
        print('beta tumse na ho paayega!')
else:
    print('Not correct')

# if-else examples
# 1. Find the min of 3 given numbers

```

```
# 2. Menu Driven Program
```

```
# min of 3 number
```

```
a = int(input('first num'))
b = int(input('second num'))
c = int(input('third num'))
```

```
if a<b and a<c:
    print('smallest is',a)
elif b<c:
    print('smallest is',b)
else:
    print('smallest is',c)
```

```
# menu driven calculator
```

```
menu = input("""
Hi! how can I help you.
1. Enter 1 for pin change
2. Enter 2 for balance check
3. Enter 3 for withdrawl
4. Enter 4 for exit
""")
```

```
if menu == '1':
    print('pin change')
elif menu == '2':
    print('balance')
else:
    print('exit')
```

```
"""# Modules in Python
```

```
- math
- keywords
- random
- datetime
"""
```

```
# math
import math
```

```
math.sqrt(196)
```

```
# keyword
import keyword
print(keyword.kwlist)
```

```
# random
import random
print(random.randint(1,100))
```

```
# datetime
import datetime
print(datetime.datetime.now())
```

```
help('modules')
```

```
"""# Loops in Python
```

```
- Need for loops
- While Loop
- For Loop
"""
```

```
# While loop example -> program to print the table
# Program -> Sum of all digits of a given number
```

Program -> keep accepting numbers from users till he/she enters a 0 and then find the avg

```
number = int(input('enter the number'))
```

```
i = 1
```

```
while i<11:  
    print(number, '*', i, '=', number * i)  
    i += 1
```

while loop with else

```
x = 1
```

```
while x < 3:  
    print(x)  
    x += 1
```

```
else:  
    print('limit crossed')
```

Guessing game

generate a random integer between 1 and 100

```
import random  
jackpot = random.randint(1,100)
```

```
guess = int(input('guess karo'))  
counter = 1  
while guess != jackpot:  
    if guess < jackpot:  
        print('galat!guess higher')  
    else:  
        print('galat!guess lower')  
  
    guess = int(input('guess karo'))  
    counter += 1
```

```
else:  
    print('correct guess')  
    print('attempts', counter)
```

For loop demo

```
for i in {1,2,3,4,5}:  
    print(i)
```

For loop examples

"""### Program - The current population of a town is 10000. The population of the town is increasing at the rate of 10% per year. You have to write a program to find out the population at the end of each of the last 10 years."""

```
curr_pop = 10000
```

```
for i in range(10,0,-1):  
    print(i, curr_pop)  
    curr_pop = curr_pop - 0.1*curr_pop
```

"""### Sequence sum

1/1! + 2/2! + 3/3! + ...
"""

code here

For loop vs While loops (When to use what?)

```
"""# Nested Loops"""
```

```
# Examples
```

```
# Program - Unique combination of 1,2,3,4
```

```
# Program - Pattern 1 and 2
```

```
"""### Pattern 1
```

```
*** <br>
```

```
**** <br>
```

```
***<br>
```

```
"""
```

```
"""### Pattern 2
```

```
1<br>
```

```
121<br>
```

```
12321<br>
```

```
1234321<br>
```

```
"""
```

```
"""# Loop Control Statement
```

```
- Break
```

```
- Continue
```

```
- Pass
```

```
"""
```

```
# Break demo
```

```
# Break example (Linear Search) -> Prime number in a given range
```

```
# Continue demo
```

```
# Continue Example (Ecommerce)
```

```
# Pass demo
```