

Nivelamento de programação para termodinâmica

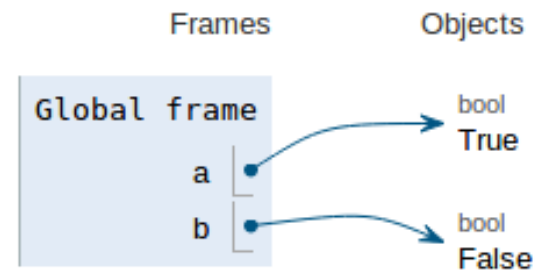
Iuri Soter Viana Segtovich

Parte 2: Lógica e Sintaxe

Tipo lógico e condicionais: (bool, if, elif, else)

Bool - lógicos

```
1 a=True
2 b=False
```



A	B	A AND B	A OR B	NOT A
False	False	False	False	True
False	True	False	True	True
True	False	False	True	False
True	True	True	True	False

Comparações

(number,number) → bool

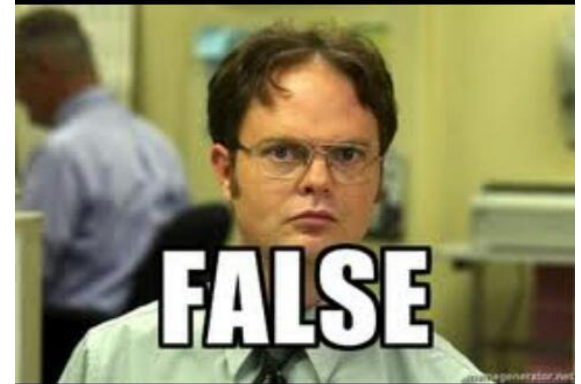
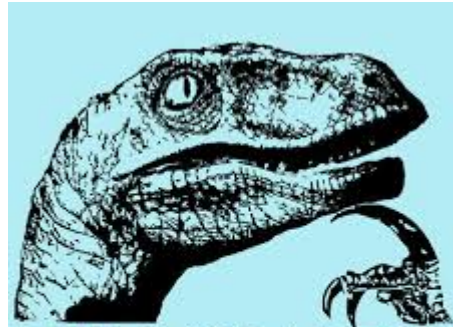


```
print(1<2)
```

```
| True
```

Comparações

(number,number) → bool



```
print(1>2)
```

```
False
```

Comparações

(number,number) → bool

```
print(1==2)
```

```
print(1<2)
```

```
print(1>2)
```

```
print(1<=2)
```

```
print(1>=2)
```

```
print(1!=2)
```

False

True

False

True

False

True

Comparações

com floats

```
1 x=1./7.  
2 print("  1 2 3 4 5 6 7")  
3 print("y=x+x+x+x+x+x+x")  
4 y=x+x+x+x+x+x+x  
5 print(y)  
6 print(y==1)  
7  
8 tol=1e-14  
→ 9 print(abs(y-1)<tol)  
10
```

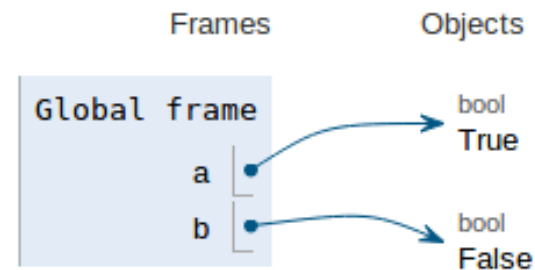
```
  1 2 3 4 5 6 7  
y=x+x+x+x+x+x+x  
0.99999999999999998  
False  
True
```

- `abs()` - função módulo

Operadores lógicos

```
1 a=True
2 b=False
3 print("a and b:", a and b)
4 print("not a:", not a)
→ 5 print("a or b:", a or b)
```

```
a and b: False
not a: False
a or b: True
```



A	B	A AND B	A OR B	NOT A
False	False	False	False	True
False	True	False	True	True
True	False	False	True	False
True	True	True	True	False

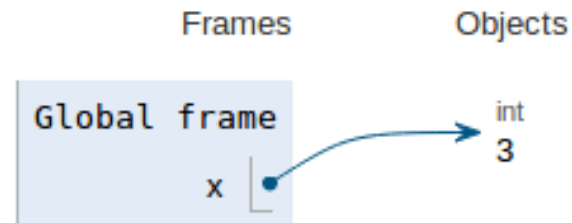
Condicionais



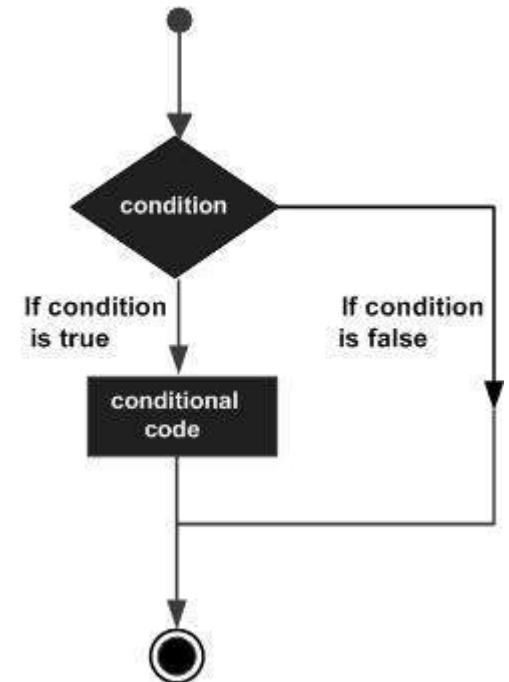
if

```
1 x=3
2 if x>0:
→ 3     print('x positivo')
```

x positivo

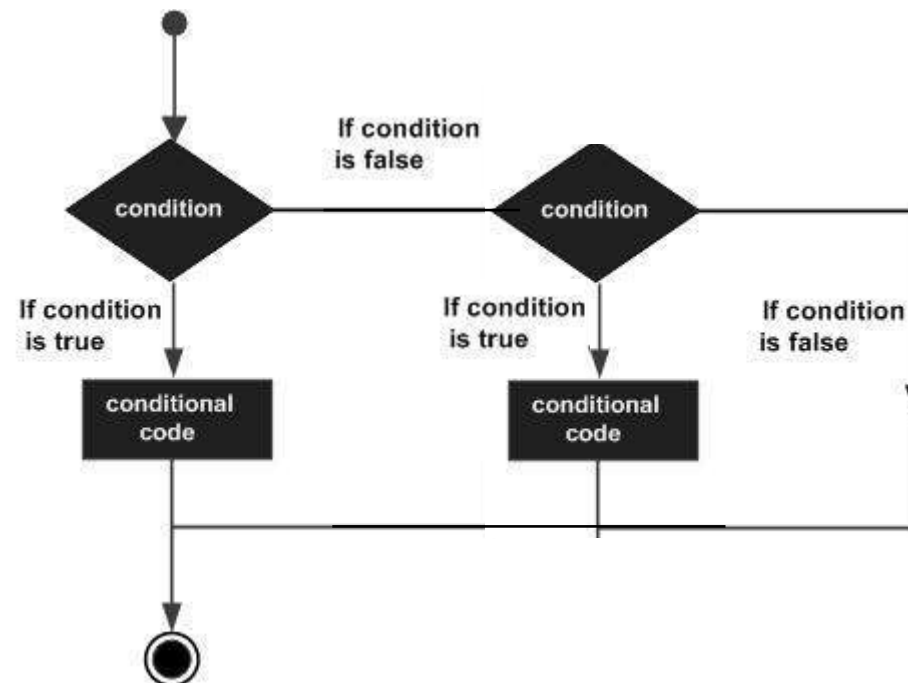
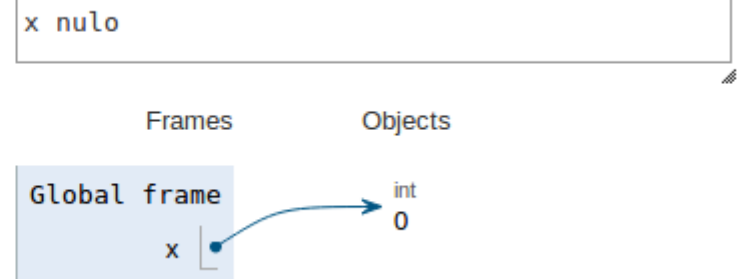


- Dois pontos
- Identação



elif

```
1 x=0
2 if x>0:
3     print('x positivo')
4 elif x==0:
5     print('x nulo')
```

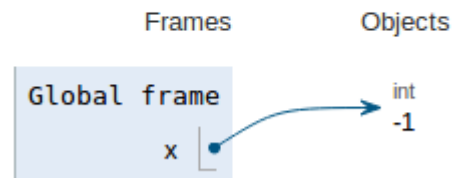


- Dois pontos
- Identação

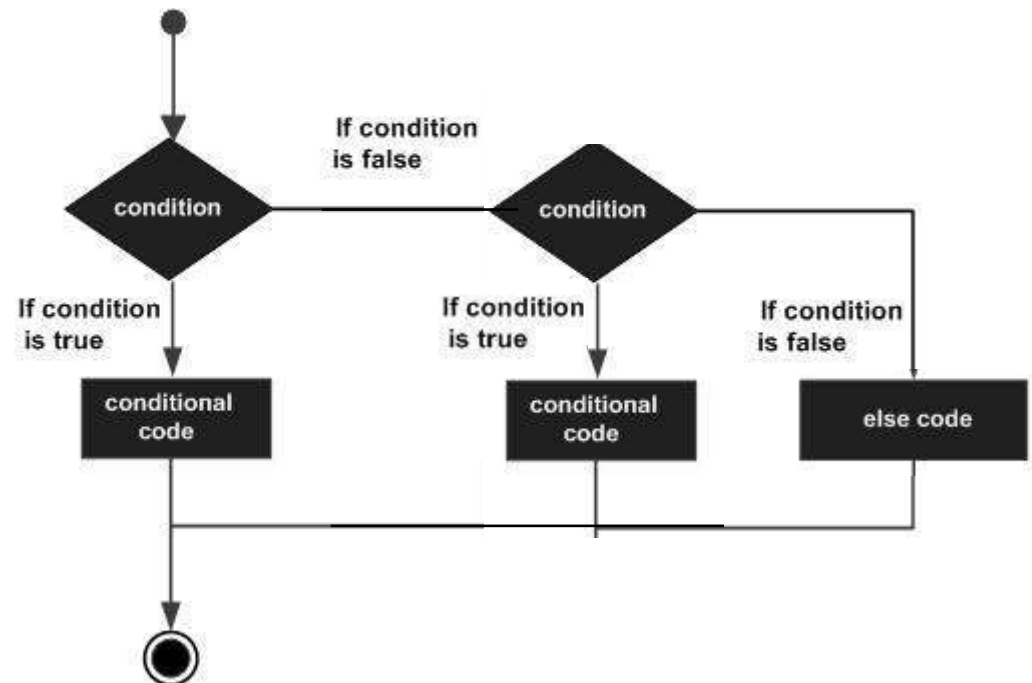
else

```
1 x=-1
2 if x>0:
3     print('positivo')
4 elif x==0:
5     print('nulo')
6 else:
7     print('se nao é positivo nem zero
8     deve ser negativo')
```

se nao é positivo nem zero
deve ser negativo



- Dois pontos
- Identação



Exercicio

Nota P1 = 5

Nota P2 = 8

Verificar se média maior que 7

Verificar se nota menor que 3

Imprimir média e informação de aprovado ou em prova final ou reprovado direto

Apenas se foi pra PF:

Nota PF = 7

Verificar se nota final maior que 5

Imprimir média final e informação de aprovado ou reprovado