#Number System Conversion (binary digit)

*Binary

```
In [1]: 24
```

```
Out[1]: 24
```

```
In [2]: bin(24)
```

```
Out[2]: '0b11000'
```

```
In [3]: 0b11000
```

```
Out[3]: 24
```

```
In [4]: int(0b11011)
```

```
Out[4]: 27
```

```
In [6]: bin(145)
```

```
Out[6]: '0b10010001'
```

```
In [7]: int(0b100100111)
```

```
Out[7]: 295
```

*Octal

```
In [8]: oct(15)
```

```
Out[8]: '0o17'
```

```
In [9]: 0o17
```

```
Out[9]: 15
```

```
In [10]: oct(2355)
```

```
Out[10]: '0o4463'
```

```
In [11]: int(0o4462)
```

```
Out[11]: 2354
```

*hexadecimal

```
In [12]: hex(28)
```

```
Out[12]: '0x1c'
```

```
In [13]: 0x1f
```

Out[13]: 31

In [14]:
```
hex(36178)
```

Out[14]: '0x8d52'

In [15]:
```
int(0x8d79)
```

Out[15]: 36217

In [16]:
```
0xa
```

Out[16]: 10

#import math module

In [21]:
```
import math     # math is module
```

In [22]:
```
x = math.sqrt(25)  #sqrt is inbuild function
x
```

Out[22]: 5.0

In [23]:
```
x1 = math.sqrt(15)
x1
```

Out[23]: 3.872983346207417

In [24]:
```
print(math.floor(2.4))     #floor - minimum or least value
```

```
2
```

In [26]:
```
print(math.ceil(3.3))      #ceil - maximum or highest value
```

```
4
```

In [27]:
```
print(math.pow(3,5))
```

```
243.0
```

In [28]:
```
print(math.pi)           #these are constant
```

```
3.141592653589793
```

In [29]:
```
print(math.e)            #these are constant
```

```
2.718281828459045
```

In [30]:
```
import math as m
m.sqrt(10)
```

Out[30]: 3.1622776601683795

In [31]:
```
from math import sqrt,pow          # math has many function if you want to call
pow(2,5)
```

Out[31]: 32.0

In [34]:
```
round(pow(2,3))       # to  remove decimal
```

Out[34]: 8

In [35]:
```
round(pow(2,5))
```

Out[35]: 32

In [37]:
```
#help(math)
```

#user input function || command line input

In [38]:
```
x = input()
y = input()
z = x + y
print(z) # console is waiting for user to enter input
# also if you work in idle
```

```
2334
```

In [39]:
```
x1 = input('Enter the 1st number') #whenevery you works in input function it alw
y1 = input('Enter the 2nd number') # it wont understand as arithmetic operator
z1 = x1 + y1
print(z1)
```

```
python world
```

In [40]:
```
x1 = input('Enter the 1st number') #whenevery you works in input function it alw
y1 = input('Enter the 2nd number') # it wont understand as arithmetic operator
z1 = x1 + y1
print(z1)
```

```
78   34
```

In [41]:
```
type(x1)
type(y1)
```

Out[41]: str

In [42]:
```
x1 = input('Enter the 1st number') #whenevery you works in input function it alw
a1 = int(x1)
y1 = input('Enter the 2nd number') # it wont understand as arithmetic operator
b1 = int(y1)
z1 = a1 + b1
print(z1)
```

```
57
```

In [43]:
```
x1 = input('Enter the 1st number') #whenevery you works in input function it alw
a1 = float(x1)
y1 = input('Enter the 2nd number') # it wont understand as arithmetic operator
b1 = float(y1)
z1 = a1 + b1
print(z1)
```

```
5.6
```

In [45]:
```
x2 = int(input('Enter the 1st number'))
y2 = int(input('Enter the 2nd number'))
z2 = x2 * y2
z2
```

Out[45]: 46

In [46]:
```
x2 = int(input('Enter the 1st number'))
y2 = int(input('Enter the 2nd number'))
z2 = x2 / y2
z2
```

Out[46]: 8.0

In [47]:
```
ch = input('enter a char')
print(ch)
```

app

In [48]:
```
ch = input('enter a char')
print(ch)
```

Python

In [49]:
```
print(ch[0])
```

P

In [50]:
```
print(ch[2])
```

t

In [51]:
```
print(ch[-1])
```

n

In [52]:
```
print(ch[1:])
```

ython

In [53]:
```
print(ch[0:5:2])
```

Pto

In [54]:
```
ch = input('enter a char')[0]
print(ch)
```

r

In [55]:
```
ch = input('enter a char')[0]
print(ch)
```

n

In [56]:
```
ch = input('enter a char')[1:3]
print(ch)
```

s

In [57]:
```
ch = input('enter a char')
print(ch) # if you enter as 2 + 6 -1 we get output as 2 + 6-1 only
```

on

In [58]:
```
result = eval(input('enter an expr'))
print(result)
```

```
12
```

In [59]:
```
result = eval(input('enter an expr'))
print(result)
```

```
-183.04347826086956
```

In [ ]:
```

```