Experiment No.2 - Basic Concepts : Variables , Data Types , Typecasting

Name- Ravina Maruti Mane

Roll No. :27

Date :

Checked Date :

Arithmetic Operation

In [1]:
```
5+5
```

Out[1]:
```
10
```

In [3]:
```
4*4
```

Out[3]:
```
16
```

In [4]:
```
4/4
```

Out[4]:
```
1.0
```

In [5]:
```
4**3
```

Out[5]:
```
64
```

In [6]:
```
5**3
```

Out[6]:
```
125
```

In [7]:
```
5%3
```

Out[7]:
```
2
```

In [8]:
```
10%50
```

Out[8]:
```
10
```

In [9]:
```
print(5+5)
print(5-4)
print(5*3)
```

```
10
1
15
```

variables

In [10]:
```
a=10
```

In [11]:
```
a
```

Out[11]:
```
10
```

In [12]:
```
b=10.10
```

In [13]:
```
b
```

Out[13]:
```
10.1
```

In [1]:
```
ravina mane=10
```

```
  File "C:\Users\HP\AppData\Local\Temp\ipykernel_16080\1472325671.py", line 1
    ravina mane=10
           ^
SyntaxError: invalid syntax
```

In [2]:
```
ravina_mane=10
```

In [3]:
```
ravina_mane
```

Out[3]:
```
10
```

In [4]:
```
reva=100
```

In [5]:
```
ravina10=27
```

In [7]:
```
10reva=27
```

```
  File "C:\Users\HP\AppData\Local\Temp\ipykernel_16080\433977109.py", line 1
    10reva=27
      ^
SyntaxError: invalid syntax
```

In [8]:
```
@ravina=35
```

```
  File "C:\Users\HP\AppData\Local\Temp\ipykernel_16080\610346314.py", line 1
    @ravina=35
           ^
SyntaxError: invalid syntax
```

In [9]:
```
ravina@=35
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_16080\4233594992.py in <module>
----> 1 ravina@=35

NameError: name 'ravina' is not defined
```

In [22]:
```
data_analysis=33
```

In [23]:
```
data_science=222
```

In [24]:
```
ml=data_science+data_analysis
```

In [25]:
```
ml
```

Out[25]:
```
255
```

Data Types

In [26]:
```
a=10
```

In [27]:
```
a
```

Out[27]:
```
10
```

In [28]:
```
type(a)
```

Out[28]:
```
int
```

In [29]:
```
b=10.10
```

In [30]:
```
b
```

Out[30]:
```
10.1
```

In [31]:
```
type(b)
```

Out[31]:
```
float
```

In [10]:
```
c='ravina'
```

In [11]:
```
c
```

Out[11]:
```
'ravina'
```

In [12]:
```
type(c)
```

Out[12]:
```
str
```

In [14]:
```
d="Joaquina"
```

In [15]:
```
d
```

Out[15]:
```
'Joaquina'
```

In [16]:
```
e=10+20j
```

In [17]:
```
e
```

Out[17]:
```
(10+20j)
```

In [18]:
```
type(e)
```

Out[18]:
```
complex
```

In [19]:
```
f=True
```

In [20]:
```
type(f)
```

Out[20]:
```
bool
```

In [21]:
```
g=False
```

In [22]:
```
type(g)
```

Out[22]:
```
bool
```

In [23]:
```
x=-100
```

In [24]:
```
bool(x)
```

Out[24]:
```
True
```

In [25]:
```
s1='Ravina Mane'
s2='Sanika Jadhav'
```

In [26]:
```
S=s1+s2
```

In [27]:
```
S
```

Out[27]:
```
'Ravina ManeSanika Jadhav'
```

In [28]:
```
s3=40
s4=50
```

In [29]:
```
SS=s3+s4
```

In [30]:
```
SS
```

Out[30]:
```
90
```

In [31]:
```
sq=10+'20'
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_16080\2807909554.py in <module>
----> 1 sq=10+'20'

TypeError: unsupported operand type(s) for +: 'int' and 'str'
```

In [32]:
```
b=True+False
```

In [33]:
```
b
```

Out[33]:
```
1
```

In [34]:
```
c1=True+10+False-False
```

In [35]:
```
c1
```

Out[35]:
```
11
```

In [36]:
```
s='Welcome to SY , this is my first lecture.'
```

In [37]:
```
s
```

Out[37]:
```
'Welcome to SY , this is my first lecture.'
```

In [38]:
```
'10'+2
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_16080\1576072755.py in <module>
----> 1 '10'+2

TypeError: can only concatenate str (not "int") to str
```

In [40]:
```
'reva'-2
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_16080\700610330.py in <module>
----> 1 'reva'-2

TypeError: unsupported operand type(s) for -: 'str' and 'int'
```

In [41]:
```
'10'*3
```

Out[41]:
```
'101010'
```

In [42]:
```
'10'+4
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_16080\3939076351.py in <module>
----> 1 '10'+4

TypeError: can only concatenate str (not "int") to str
```

In [43]:
```
'10'*6
```

Out[43]:
```
'101010101010'
```

Typecasting

In [44]:
```
a=10
```

In [45]:
```
type(a)
```

Out[45]:
```
int
```

In [46]:
```
b=float(a)
```

In [47]:
```
b
```

Out[47]:
```
10.0
```

In [48]:
```
type(b)
```

Out[48]:
```
float
```

In [49]:
```
a
```

Out[49]:
```
10
```

In [50]:
```
c=str(a)
```

In [51]:
```
c
```

Out[51]:
```
'10'
```

In [52]:
```
type(c)
```

Out[52]:
```
str
```

In [53]:
```
d=complex(a)
```

In [54]:
```
d
```

Out[54]:
```
(10+0j)
```

In [55]:
```
type(d)
```

Out[55]:
```
complex
```

In [56]:
```
a
```

Out[56]:
```
10
```

In [57]:
```
b1=bool(a)
```

In [58]:
```
b1
```

Out[58]:
```
True
```

In [59]:
```
type(b1)
```

Out[59]:
```
bool
```

In [60]:
```
f=10.10
```

In [61]:
```
a=int(f)
```

In [62]:
```
a
```

Out[62]:
```
10
```

In [63]:
```
type(a)
```

Out[63]:
```
int
```

In [64]:
```
s=str(f)
```

In [65]:
```
s
```

Out[65]:
```
'10.1'
```

In [66]:
```
type(s)
```

Out[66]:
```
str
```

In [67]:
```
z=complex(f)
```

In [68]:
```
z
```

Out[68]:
```
(10.1+0j)
```

In [69]:
```
type(z)
```

Out[69]:
```
complex
```

In [70]:
```
x=bool(f)
```

In [71]:
```
x
```

Out[71]:
```
True
```

In [72]:
```
a=0.0
```

In [73]:
```
type(a)
```

Out[73]:
```
float
```

In [74]:
```
bool(a)
```

Out[74]:
```
False
```

In [75]:
```
a=-10
```

In [76]:
```
bool(a)
```

Out[76]:
```
True
```

In [77]:
```
a=True
```

In [78]:
```
type(a)
```

Out[78]:
```
bool
```

In [79]:
```
int(a)
```

Out[79]:
```
1
```

In [80]:
```
float(a)
```

Out[80]:
```
1.0
```

In [81]:
```
type(float(a))
```

Out[81]:
```
float
```

In [82]:
```
x=float(a)
```

In [83]:
```
type(x)
```

Out[83]:
```
float
```

In [84]:
```
x
```

Out[84]:
```
1.0
```

In [85]:
```
a
```

Out[85]:
```
True
```

In [86]:
```
m=str(a)
```

In [87]:
```
m
```

Out[87]:
```
'True'
```

In [88]:
```
n=complex(a)
```

In [89]:
```
n
```

Out[89]:
```
(1+0j)
```

In [90]:
```
a='Ravina'
```

In [91]:
```
type(a)
```

Out[91]:
```
str
```

In [92]:
```
x=int(a)
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_16080\988137813.py in <module>
----> 1 x=int(a)

ValueError: invalid literal for int() with base 10: 'Ravina'
```

In [93]:
```
x=float(a)
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_16080\839702092.py in <module>
----> 1 x=float(a)

ValueError: could not convert string to float: 'Ravina'
```

In [94]:
```
c=bool(a)
```

In [95]:
```
c
```

Out[95]:
```
True
```

In [96]:
```
type(c)
```

Out[96]:
```
bool
```

In [97]:
```
m=complex(a)
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_16080\2767889532.py in <module>
----> 1 m=complex(a)

ValueError: complex() arg is a malformed string
```

In [98]:
```
m
```

Out[98]:
```
'True'
```

In [99]:
```
a=10+20j
```

In [100…
```
complex(a)
```

Out[100]:
```
(10+20j)
```

In [101…
```
b=int(a)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_16080\1061641604.py in <module>
----> 1 b=int(a)

TypeError: can't convert complex to int
```

In [102…
```
b=float(a)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_16080\2906168692.py in <module>
----> 1 b=float(a)

TypeError: can't convert complex to float
```

In [103…
```
c=str(a)
```

In [104…
```
c
```

Out[104]:
```
'(10+20j)'
```

In [105…
```
d=bool(a)
```

In [106…
```
d
```

Out[106]:
```
True
```