Assignment 7

Python basic code

In [201…

```
print(123+5.22)
```

```
128.22
```

In [2]:

```
print(int(123+5.22))
```

```
128
```

In [3]:

```
print(28-53)
print(22-41)
```

```
-25
-19
```

In [7]:

```
print(-(22-41.8))
```

```
19.799999999999997
```

In [6]:

```
print()
```

```
-19
```

In [9]:

```
print(23*213.12)
print(34*324)
```

```
4901.76
11016
```

In [10]:

```
print(float(44*232.3))
```

```
10221.2
```

In [11]:

```
print(15//3)
```

```
5
```

In [12]:

```
print(16%3)
```

```
1
```

In [14]:

```
print(type(14))
print(type(14.3))
print(type(23+56j))
print(type("naruto uzumakii"))
print(type([0,1,2,3,4,5,6,7,8]))
print(type({"name":"mahesh"}))
print(type({1,2}))
print(type((1,2,4,5,)))
```

```
<class 'int'>
<class 'float'>
<class 'complex'>
<class 'str'>
<class 'list'>
<class 'dict'>
<class 'set'>
<class 'tuple'>
```

In [15]:
```
print("mahesh is back to work after 10th of space locked")
```

```
mahesh is back to work after 10th of space locked
```

In [16]:
```
"mahesh is back to work after 10th of space locked"
```

Out[16]:
```
'mahesh is back to work after 10th of space locked'
```

In [18]:
```
"'mahesh is back to work'on after 10th of space locked"
```

Out[18]:
```
"'mahesh is back to work'on after 10th of space locked"
```

In [19]:
```
print("naruto never \
give up\
on anything")
```

```
naruto never give upon anything
```

In [21]:
```
print("naruto never\'s give upon anything")
```

```
naruto never's give upon anything
```

In [22]:
```
print("hello"+" how are you man") # concatenation of str
```

```
hello how are you man
```

In [27]:
```
" pain   "*8  # repeating of str
```

Out[27]:
```
' pain    pain    pain    pain    pain    pain    pain    pain   '
```

In [31]:
```
 print("hi,\n how are man.\nis everything is fine")
```

```
hi,
 how are man.
is everything is fine
```

In [36]:
```
print(" a\n b\n c\n d")
```

```
 a
 b
 c
 d
```

In [37]:
```
x=100
x
```

Out[37]:
```
100
```

In [38]:
```
x+13
```

Out[38]:
```
113
```

```
In [39]: y=123
         y
```

```
Out[39]: 123
```

```
In [40]: x+y
```

```
Out[40]: 223
```

```
In [41]: x
```

```
Out[41]: 100
```

```
In [47]: x+23
```

```
Out[47]: 123
```

```
In [48]: _+x # store the pecious values
```

```
Out[48]: 223
```

```
In [49]: _+x
```

```
Out[49]: 323
```

```
In [55]: name="mahesh"
         name+= " has good heart"
         name
```

```
Out[55]: 'mahesh has good heart'
```

```
In [56]: len(name)
```

```
Out[56]: 21
```

```
In [57]: name[0]
```

```
Out[57]: 'm'
```

```
In [58]: for i in enumerate(name):
             print(i)
```

```
(0, 'm')
(1, 'a')
(2, 'h')
(3, 'e')
(4, 's')
(5, 'h')
(6, ' ')
(7, 'h')
(8, 'a')
(9, 's')
(10, ' ')
(11, 'g')
(12, 'o')
(13, 'o')
(14, 'd')
(15, ' ')
(16, 'h')
(17, 'e')
(18, 'a')
(19, 'r')
(20, 't')
```

In [59]:
```
name[-5]
```

Out[59]:
```
'h'
```

In [60]:
```
name[5]
```

Out[60]:
```
'h'
```

In [62]:
```
name[7]
```

Out[62]:
```
'h'
```

Operators

Arithmetic operators

In [77]:
```
n1,n2=13,23
print(n1+n2)
```

```
36
```

In [78]:
```
n1-n2
```

Out[78]:
```
-10
```

In [79]:
```
n1*n2
```

Out[79]:
```
299
```

In [80]:
```
n1/n2
```

Out[80]:
```
0.5652173913043478
```

In [81]:
```
n1//n2
```
Out[81]:
```
0
```

In [82]:
```
n1**n2
```
Out[82]:
```
41753905413413116367045797
```

In [83]:
```
n1 % n2
```
Out[83]:
```
13
```

assingment operators

In [88]:
```
x=2
x=x+4
```

In [89]:
```
x
```
Out[89]:
```
6
```

In [90]:
```
x+=2
x
```
Out[90]:
```
8
```

In [91]:
```
x+=2
x
```
Out[91]:
```
10
```

In [92]:
```
x+=2
x
```
Out[92]:
```
12
```

In [93]:
```
x-=2
x
```
Out[93]:
```
10
```

In [94]:
```
x-=2
x
```
Out[94]:
```
8
```

In [95]:
```
x-=2
x
```
Out[95]:
```
6
```

In [96]:
```
x*=2
x
```

Out[96]:

```
12
```

In [97]:

```
x*=2
x
```

Out[97]:

```
24
```

In [98]:

```
x*=2
x
```

Out[98]:

```
48
```

In [99]:

```
x*=2
x
```

Out[99]:

```
96
```

In [100…

```
x/=2
x
```

Out[100…

```
48.0
```

In [101…

```
x/=2
x
```

Out[101…

```
24.0
```

In [102…

```
x/=2
x
```

Out[102…

```
12.0
```

In [103…

```
x//=2
x
```

Out[103…

```
6.0
```

In [104…

```
x//=2
x
```

Out[104…

```
3.0
```

Unary operator

In [113…

```
n=19
n
```

Out[113…

```
19
```

In [114…

```
m=-(n)
m
```

Out[114…

```
-19
```

Relational Operator

In [116…
```
a=12
b=67
```

In [117…
```
a==b
```

Out[117…
```
False
```

In [118…
```
a<b
```

Out[118…
```
True
```

In [119…
```
a>b
```

Out[119…
```
False
```

In [120…
```
a!=b
```

Out[120…
```
True
```

number system conversion

In [122…
```
bin(10)
```

Out[122…
```
'0b1010'
```

In [123…
```
int("0b1010",2)
```

Out[123…
```
10
```

In [125…
```
int("0o1010",8)
```

Out[125…
```
520
```

In [126…
```
int("0xface",16)
```

Out[126…
```
64206
```

In [127…
```
int(0b1010)
```

Out[127…
```
10
```

In [128…
```
int(01010)
```

```
  Cell In[128], line 1
    int(01010)
        ^
SyntaxError: leading zeros in decimal integer literals are not permitted; use an
0o prefix for octal integers
```

In [129…
```
int(1010)
```

```
Out[129…   1010
```

```
In [130…   oct(64)
```

```
Out[130…   '0o100'
```

```
In [131…   int(0o100)
```

```
Out[131…   64
```

```
In [132…   hex(143)
```

```
Out[132…   '0x8f'
```

```
In [133…   int(0x8f)
```

```
Out[133…   143
```

```
In [136…   0zx8f
```

```
  Cell In[136], line 1
    0zx8f
    ^
SyntaxError: invalid decimal literal
```

```
In [137…   0xface
```

```
Out[137…   64206
```

Swapping variables

```
In [139…   # this is the worng way to do
           x=5
           y=48
           a=b
           b=a
           a,b
```

```
Out[139…   (67, 67)
```

```
In [143…   # method 1 using assign
           a1=234
           a2=2332
           a1,a2=a2,a1
           print(a1,a2)
```

```
2332 234
```

```
In [146…   # method 2  using 3th variable
           b1=678
           b2=567
           temp=b1
           a1=b1
           b1=temp
           print(b1,b2)
```

```
678 567
```

In [147…

```
# method 3 using operator
a1=36
b1=67
a1=a1+b1
b1=a1-b1
a1=a1+b1
print(a1,b1)
```

```
139 36
```

In [148…

```
a1,b2 =b1,a1
print(a1,b1)
```

```
36 36
```

bitwise Operators

complement operator

In [149…

```
~19   #  N= -(n+1)
```

Out[149…

```
-20
```

In [150…

```
~194
```

Out[150…

```
-195
```

In [151…

```
~-193
```

Out[151…

```
192
```

bitwise '&' "|" and "^"

In [152…

```
12 & 14
```

Out[152…

```
12
```

In [153…

```
12 & 16
```

Out[153…

```
0
```

In [154…

```
12 & 25
```

Out[154…

```
8
```

In [155…

```
12 | 15
```

Out[155…

```
15
```

In [156…

```
15 | 12
```

```
Out[156…  15
```

```
In [157…  15 | 120
```

```
Out[157…  127
```

```
In [158…  13^1
```

```
Out[158…  12
```

```
In [159…  12^25
```

```
Out[159…  21
```

bitwise

- right shift >> (gain th bits)
- left shift << (lose the bits)

```
In [161…  10<<4
```

```
Out[161…  160
```

```
In [162…  13>>4
```

```
Out[162…  0
```

```
In [164…  10<<1
```

```
Out[164…  20
```

```
In [165…  2<<2
```

```
Out[165…  8
```

```
In [166…  8>>2
```

```
Out[166…  2
```

```
In [169…  20>>1
```

```
Out[169…  10
```

```
In [170…  20>>2
```

```
Out[170…  5
```

import math module

```
In [171…  x=sqrt(4)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[171], line 1
----> 1 x=sqrt(4)

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

In [175...

```
import math
x=math.sqrt(5)
x
```

Out[175...

```
2.23606797749979
```

In [176...

```
x=math.cbrt(2)
x
```

Out[176...

```
1.2599210498948732
```

In [178...

```
x=math.pow(2,3)
x
```

Out[178...

```
8.0
```

In [180...

```
x=math.factorial(22)
x
```

Out[180...

```
1124000727777607680000
```

In [182...

```
print(math.floor(123.2))    # Returns the largest integer <= 123.2 → 123
print(math.ceil(123.2))     # Returns the smallest integer >= 123.2 → 124
print(math.trunc(123.2))    # Truncates the decimal part → 123
print(math.fabs(-123.2))    # Returns the absolute value as a float → 123.2
```

```
123
124
123
123.2
```

In [183...

```
math.pi
```

Out[183...

```
3.141592653589793
```

In [184...

```
int(math.pi)
```

Out[184...

```
3
```

In [188...

```
from math import sqrt,pow,factorial,ceil,trunc,fabs,pi
pow(3.5,3)
```

Out[188...

```
42.875
```

In [189...

```
round(pow(3.5,3),2)
```

Out[189...

```
42.88
```

user input function

In [191…

```
a=input() # bydefault system consider input as str
b=input()
c=a+b
print(c)
print(type(a))
print(type(b))
```

```
1223
<class 'str'>
<class 'str'>
```

In [192…

```
a=input('enter th 1st no')
a1=int(a)
b=input('enter th 2nd no')
b1=int(b)
c=a1+b1
print(c)
```

```
133
```

In [195…

```
ch=input("enter the character: ")
ch
```

Out[195…

```
'pain is my part'
```

In [198…

```
ch[5]
```

Out[198…

```
'i'
```

In [200…

```
ch=input("enter the character: ")[1:6]
ch
```

Out[200…

```
'23456'
```

In [ ]: