24/7/25

eval() function demo program

```
print(eval('25'))      # 25 (int)
print(eval('10.8'))    # 10.8 (float)
print(eval('False'))   # False (bool)
print(eval('3+4j'))    # (3+4j) (complex)
print(eval('Hyd'))     # 'Hyd' (string) ERROR
print(eval(" 'Hyd' ")) # 'Hyd'
print(eval(3+4*5))     # 3+20 = 23 (Math opr)
print(eval('[10,20,15,18]'))  # [10,20,15,18] (list)
print(eval('{10,20,15,18,20,12,18}'))
# {10,12,15,18,20} (set, removes duplicates)
print(eval('(10,20,30)'))  # (10,20,30) (tuple)
print(eval("{10:'Hyd',10:'sec'}"))
# {10:'sec'} (dict, duplicate key)
print(eval(4+5))  # ERROR
```

tricky program - find outputs (Homework)

```
print(eval("'hyd'"))  # 'hyd'
hyd='sec'             # sec
print(eval("hyd"))    # sec
sec=25                # => string obj
print(eval('sec'))    # '25'
print(eval(sec))      # 25
```

```
cyb = 10.8
print(eval('cyb'))  # 10.8
print(eval(cyb))    # Error
```

Tricky program Find output (Home work)

convert string print to

```
print(eval("print('Hyd')"))  # Error  Hyd  print(Pri
                                        None
```

Find outputs (Home work)

```
print(bool('False'))    # True
print(eval('False'))    # False
print(bool(''))         # False
print(eval('  '))       # Nothing to be print
print(eval("a"))        # Error
print(eval(" a "))      # Nothing
print(eval(' '))        # Error
```

What is the advantage of eval(input())?

```
x = eval(input('Enter any input: '))  # 25
print(type(x))  # <class 'int'>
print(x)        # 25
```

What is a better approach to read string input?

```
a = input('Enter any string: ')  # 'Hello'
print(len(a))  # 4
print(a)       # Hello
```

b = eval(input("Enter any string: ")) # Hyd

print(len(b)) # 3

print(b) # Hyd

sep argument demo program (Home work)

a, b, c = 25, 10.8, 'Hyd'

print(a, b, c, sep = ',') # 25, 10.8, Hyd

print(a, b, c, sep = '\t') # 25 <tab> 10.8 <tab> Hyd

print(a, b, c, sep = '___') # 25___10.8___Hyd

print(a, b, c, sep = '\n') # 25
10.8
Hyd

default

print(a, b, c) # sep is space 25 10.8 Hyd

print(a, b, c, separator = ':') # Error

Find outputs (Home work)

a, b, c = 25, 10.8, 'Hyd'

print(a, b, c, end = '___') # 25 10.8 Hyd___ same line

print(a, b, c, sep = ',,,') # 25,,,10.8,,,Hyd \n → next line

print(a, b, c, sep = ':::', end = '\t\t\t')

25:::10.8:::Hyd → same line

print(a, b, c) # 25 10.8 Hyd

Find outputs (Home work)

```
print ('Hyd')    # Hyd
print()
print ('sec')    # sec
print()
print ('cyb')    # cyb
```

Find outputs (Home work)

```
l = [10, 20, 30, 40]
t = (10, 20, 30, 40)
s = {10, 20, 30, 40}
print (l, t, s)
# [10, 20, 30, 40] (10, 20, 30, 40) {10, 20, 30, 40}
```

Find outputs (Home work)

'%f' = 6 digits

```
a = 25
b = ('%f') % a
print (b)        # 25.000000
print (type(b))  # <class 'str'>
x = 10.8
y = ('%d') % x
print (y)        # 10
print (type(y))  # <class 'str'>
m = [10, 20, 15, 18]
n = ('%s') % m
```

```
print(n)        # [10, 20, 15, 18]
print(type(n))  <class 'str'>
```

Find outputs (Home work)

```
a=10.9274
print('%8.2f' %a)  # <3 spaces> 10.93
print('%9.1f' %a)  # <5 spaces> 10.9
print('%10.3f' %a) # <4 spaces> 10.927
print('%.2f' %a)   # 10.93
print('%.6f' %a)   # 10.927400
print('%f' %a)     # 10927400
```

Find outputs (Home work)

```
a='Hyd'
print('%7s' %a)  # <4 spaces> Hyd
print('%-7s' %a) # Hyd <4 spaces>
print('%.2s' %a) # Hy  and ignores smaller width
print('%s' %a)   # Hyd
print('%s', a)   # %s Hyd
print('%s' a)    # ERROR
print('%s' ,%a)  # ERROR
print(a)         # Hyd
```

Find outputs (Home work)

```
a = [10, 20, 30, 40]
print('%s' %a)      # [10, 20, 30, 40]
print('%s', a)      # %s [10, 20, 30, 40]
print('%s' a)       # error
print('%i' %a)      # error
print(a)            # [10, 20, 30, 40]
print('%s', %a)     # error
```

Find outputs (Home work)

```
a=25
b=10.92774
c='Hyd'
print('%d %f %s' % (a,b,c)) # 25 10.927400 Hyd
print('%i %g %s' %(a,b,c)) # 25 10.92774 Hyd
print('%s %s %s' %(a,b,c)) # 25 10.92774 Hyd
print('%d %g %s', a, b, c)
# %d %g %s 25 10.92774 Hyd
print('%d %g %s' a, b, c) # error
print('%d %g %s', %(a,b,c)) # error
print('%d %g %s' %a %b %c) # error
print('%d %a', '%f' %b, '%s' %c)
# 25 10.927400 Hyd
```