General Programs

In [30]:
```
a = 5
print(a, "is of type", type(a))
a = 2.0
print(a, "is of type", type(a))
a = 1 + 2j
print(a, "is of type", type(a))
```

```
5 is of type <class 'int'>
2.0 is of type <class 'float'>
(1+2j) is of type <class 'complex'>
```

In [31]:
```
a = [5, 10, 15, 20, 25, 30, 35, 40]
print("a[2]=", a[2])
print("a[0:3]=", a[0:3])
print("a[5:]=", a[5:])
```

```
a[2]= 15
a[0:3]= [5, 10, 15]
a[5:]= [30, 35, 40]
```

In [32]:
```
a = [1, 2, 3]
a[2]= 4
print(a)
```

```
[1, 2, 4]
```

In [ ]:
```
t = (5, 'program', 1+3j)
print("t[0:3]=", t[0:3])
```

In [33]:
```
s= "this is string"
print(s)
s = ''' multiline
string'''
print(s)
```

```
this is string
 multiline
string
```

In [34]:
```
s = "hello world"
print("s[4]=", s[4])
print("s[6:11]=", s[6:11])
```

```
s[4]= o
s[6:11]= world
```

In [35]:
```
a= {5, 2, 3, 1, 4}
print("a=", a)
print(type(a))
```

```
a= {1, 2, 3, 4, 5}
<class 'set'>
```

In [36]:
```
a = {5, 2, 3, 1, 4}
print(a)
```

```
{1, 2, 3, 4, 5}
```

In [37]:
```
d = {1:'value', 'key':2}
type(d)
```

Out[37]:
```
dict
```

In [38]:
```
print("d[1]=", d[1])
print("d['key']=", d['key'])
```

```
d[1]= value
d['key']= 2
```

In [39]:
```
float(5)
```

Out[39]:
```
5.0
```

In [40]:
```
int(10.6)
```

Out[40]:
```
10
```

In [41]:
```
int(-10.6)
```

Out[41]:
```
-10
```

In [42]:
```

float('2.5')
```

Out[42]:
```
2.5
```

In [43]:
```
str(25)
```

Out[43]:
```
'25'
```

In [44]:
```
set([1,2,3])
```

Out[44]:
```
{1, 2, 3}
```

In [45]:
```
tuple({5,6,7})
```

Out[45]:
```
(5, 6, 7)
```

In [46]:
```
list('hello')
```

Out[46]:
```
['h', 'e', 'l', 'l', 'o']
```

In [47]:
```
dict([[1,2], [3,4]])
```

Out[47]:
```
{1: 2, 3: 4}
```

In [48]:
```
thing = "hello"
type(thing)
```

Out[48]:
```
str
```

In [49]:
```
thing= 28.1
type(thing)
```

Out[49]:
```
float
```

abs() function

In [50]:
```
integer = -20
print("Absolute value of -20 is: ", abs(integer))

#random floating number
floating = -30.33
print("Absolute value of -30.33 is: ", abs(floating))
```

```
Absolute value of -20 is:  20
Absolute value of -30.33 is:  30.33
```

len() function

In [54]:
```
testList = []
print(testList, "length is", len(testList))

testList = [1, 2, 3]
print(testList, "length is", len(testList))
testTuple = (1, 2, 3)
print(testTuple, "length is", len(testTuple))

testRange = range(1, 10)
print("Length of ", testRange, " ", len(testRange))
```

```
[] length is 0
[1, 2, 3] length is 3
(1, 2, 3) length is 3
Length of  range(1, 10)   9
```

min() function

In [55]:
```
number = [3, 2, 8, 5, 10, 6]
smallest_number = min(number);

print("The smallest number is: ", smallest_number)
```

```
The smallest number is:  2
```

round() function

In [58]:
```
# for integers
print(round(15))
# for floating point
print(round(51.6))
print(round(51.5))
print(round(51.4))
```

```
15
52
52
51
```

isalnum() function

In [60]:
```
string1 = "M234onica"
print(string1.isalnum()) # True

# contains whitespace
string2 = "M3onica Gell22er"
print(string2.isalnum()) # False

# contains non-alphanumeric character
string3 = "@Monica!"
print(string3.isalnum()) # False
```

```
True
False
False
```