In [2]:
```
#Basic code
print(3 + 2)   # addition(+)
```

```
5
```

In [3]:
```
print(3 - 2)   # subtraction(-)
```

```
1
```

In [4]:
```
print(3 * 2)   # multiplication(*)
```

```
6
```

In [5]:
```
print(3 / 2)   # division(/)
```

```
1.5
```

In [6]:
```
print(3 ** 2)  # exponential(**)
```

```
9
```

In [7]:
```
print(3 % 2)   # modulus(%)
```

```
1
```

In [8]:
```
print(3 // 2)  # Floor division operator(//)
```

```
1
```

In [9]:
```
# Checking data types
print(type(10))
```

```
<class 'int'>
```

In [10]:
```
print(type(3.14))
```

```
<class 'float'>
```

In [11]:
```
print(type(1 + 3j))
```

```
<class 'complex'>
```

In [12]:
```
print(type('Asabeneh'))
```

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

In [13]:
```
print(type([1, 2, 3]))
```

```
<class 'list'>
```

In [14]:
```
print(type({'name':'Asabeneh'}))
```

```
<class 'dict'>
```

In [15]:
```
print(type({9.8, 3.14, 2.7}))
```

```
<class 'set'>
```

In [16]:
```
print(type((9.8, 3.14, 2.7)))
```

```
<class 'tuple'>
```

In [17]:
```
print(type(3 == 3))
```

```
<class 'bool'>
```

In [18]:
```
print(type(3 >= 3))
```

```
<class 'bool'>
```

In [19]:
```
# Arithmetic Operations in Python
print('Addition: ', 1 + 2)
print('Subtraction: ', 2 - 1)
print('Multiplication: ', 2 * 3)
print ('Division: ', 4 / 2)
print('Division: ', 6 / 2)
print('Division: ', 7 / 2)
print('Division without the remainder: ', 7 // 2)
print('Modulus: ', 3 % 2)
print ('Division without the remainder: ', 7 // 3)
print('Exponential: ', 3 ** 2)
```

```
Addition:  3
Subtraction:  1
Multiplication:  6
Division:  2.0
Division:  3.0
Division:  3.5
Division without the remainder:  3
Modulus:  1
Division without the remainder:  2
Exponential:  9
```

In [20]:
```
# Floating numbers
print('Floating Number,PI', 3.14)
print('Floating Number, gravity', 9.81)
```

```
Floating Number,PI 3.14
Floating Number, gravity 9.81
```

In [21]:
```
# Complex numbers
print('Complex number: ', 1 + 1j)
print('Multiplying complex number: ',(1 + 1j) * (1-1j))
```

```
Complex number:  (1+1j)
Multiplying complex number:  (2+0j)
```

In [22]:
```
a = 3
b = 2
total = a + b
diff = a - b
product = a * b
division = a / b
remainder = a % b
floor_division = a // b
exponential = a ** b
```

In [23]:
```
print(total)
print('a + b = ', total)
print('a - b = ', diff)
print('a * b = ', product)
print('a / b = ', division)
print('a % b = ', remainder)
print('a // b = ', floor_division)
print('a ** b = ', exponential)
```

```
5
a + b =  5
a - b =  1
a * b =  6
a / b =  1.5
a % b =  1
a // b =  1
a ** b =  9
```

In [24]:
```
# Calculating area of a circle
radius = 10
area_of_circle = 3.14 * radius ** 2
print('Area of a circle:', area_of_circle)
```

```
Area of a circle: 314.0
```

In [25]:
```
# Calculating area of a rectangle
length = 10
width = 20
area_of_rectangle = length * width
print('Area of rectangle:', area_of_rectangle)
```

```
Area of rectangle: 200
```

In [26]:
```
# Calculating a weight of an object
mass = 75
gravity = 9.81
weight = mass * gravity
print(weight, 'N')
```

```
735.75 N
```

In [27]:
```
print(3 > 2)
print(3 >= 2)
print(3 < 2)
print(2 < 3)
print(2 <= 3)
print(3 == 2)
print(3 != 2)
print(len('mango') == len('avocado'))
print(len('mango') != len('avocado'))
print(len('mango') < len('avocado'))
print(len('milk') != len('meat'))
print(len('milk') == len('meat'))
print(len('tomato') == len('potato'))
print(len('python') > len('dragon'))
```

```
True
True
False
True
True
False
True
False
True
True
False
True
True
False
```

In [28]:
```
# Boolean comparison
print('True == True: ', True == True)
print('True == False: ', True == False)
print('False == False:', False == False)
print('True and True: ', True and True)
print('True or False:', True or False)
```

```
True == True:  True
True == False:  False
False == False: True
True and True:  True
True or False: True
```

In [30]:
```
print('1 is 1', 1 is 1)
print('1 is not 2', 1 is not 2)
print('A in Asabeneh', 'A' in 'Asabeneh')
print('B in Asabeneh', 'B' in 'Asabeneh')
print('coding' in 'coding for all')
print('a in an:', 'a' in 'an')
print('4 is 2 ** 2:', 4 is 2 ** 2)
print(3 > 2 and 4 > 3)
print(3 > 2 and 4 < 3)
print(3 < 2 and 4 < 3)
print(3 > 2 or 4 > 3)
print(3 > 2 or 4 < 3)
print(3 < 2 or 4 < 3)
print(not 3 > 2)
print(not True)
print(not False)
print(not not True)
print(not not False)
```

```
1 is 1 True
1 is not 2 True
A in Asabeneh True
B in Asabeneh False
True
a in an: True
4 is 2 ** 2: True
True
False
False
True
True
False
False
False
True
True
False

<>:1: SyntaxWarning: "is" with a literal. Did you mean "=="?
<>:2: SyntaxWarning: "is not" with a literal. Did you mean "!="?
<>:7: SyntaxWarning: "is" with a literal. Did you mean "=="?
<>:1: SyntaxWarning: "is" with a literal. Did you mean "=="?
<>:2: SyntaxWarning: "is not" with a literal. Did you mean "!="?
<>:7: SyntaxWarning: "is" with a literal. Did you mean "=="?
C:\Users\appua\AppData\Local\Temp\ipykernel_1344\3285780420.py:1: SyntaxWa
rning: "is" with a literal. Did you mean "=="?
  print('1 is 1', 1 is 1)
C:\Users\appua\AppData\Local\Temp\ipykernel_1344\3285780420.py:2: SyntaxWa
rning: "is not" with a literal. Did you mean "!="?
  print('1 is not 2', 1 is not 2)
C:\Users\appua\AppData\Local\Temp\ipykernel_1344\3285780420.py:7: SyntaxWa
rning: "is" with a literal. Did you mean "=="?
  print('4 is 2 ** 2:', 4 is 2 ** 2)
```

In [31]:
```
# Single line comment
letter = 'P'
print(letter)
print(len(letter))
greeting = 'Hello, World!'
print(greeting)
print(len(greeting))
sentence = "I hope you are enjoying 30 days of python challenge"
print(sentence)
```

```
P
1
Hello, World!
13
I hope you are enjoying 30 days of python challenge
```

In [32]:
```
# Multiline String
multiline_string = '''I am a teacher and enjoy teaching.
I didn't find anything as rewarding as empowering people.
That is why I created 30 days of python.'''
print(multiline_string)
# Another way of doing the same thing
multiline_string = """I am a teacher and enjoy teaching.
I didn't find anything as rewarding as empowering people.
That is why I created 30 days of python."""
print(multiline_string)
```

```
I am a teacher and enjoy teaching.
I didn't find anything as rewarding as empowering people.
That is why I created 30 days of python.
I am a teacher and enjoy teaching.
I didn't find anything as rewarding as empowering people.
That is why I created 30 days of python.
```

In [33]:
```
# String Concatenation
first_name = 'Asabeneh'
last_name = 'Yetayeh'
space = ' '
full_name = first_name  +  space + last_name
print(full_name) # Asabeneh Yetayeh
# Checking length of a string using len() builtin function
print(len(first_name))  # 8
print(len(last_name))   # 7
print(len(first_name) > len(last_name)) # True
print(len(full_name)) # 15
```

```
Asabeneh Yetayeh
8
7
True
16
```

In [34]:
```
language = 'Python'
a,b,c,d,e,f = language # unpacking sequence characters into variables
print(a) # P
print(b) # y
print(c) # t
print(d) # h
print(e) # o
print(f) # n
```

```
P
y
t
h
o
n
```

In [35]:
```
# Accessing characters in strings by index
language = 'Python'
first_letter = language[0]
print(first_letter) # P
second_letter = language[1]
print(second_letter) # y
last_index = len(language) - 1
last_letter = language[last_index]
print(last_letter) # n
```

```
P
y
n
```

In [36]:
```
language = 'Python'
last_letter = language[-1]
print(last_letter) # n
second_last = language[-2]
print(second_last) # o
```

```
n
o
```

In [37]:
```
language = 'Python'
first_three = language[0:3] # starts at zero index and up to 3 but not incl
last_three = language[3:6]
print(last_three) # hon
# Another way
last_three = language[-3:]
print(last_three)   # hon
last_three = language[3:]
print(last_three)   # hon
```

```
hon
hon
hon
```

In [38]:
```
language = 'Python'
pto = language[0:6:2] #
print(pto) # pto
```

```
Pto
```

In [39]:
```
print('I hope every one enjoying the python challenge.\nDo you ?') # Line b
print('Days\tTopics\tExercises')
print('Day 1\t3\t5')
print('Day 2\t3\t5')
print('Day 3\t3\t5')
print('Day 4\t3\t5')
print('This is a back slash  symbol (\\)') # To write a back slash
print('In every programming language it starts with \"Hello, World!\"')
```

```
I hope every one enjoying the python challenge.
Do you ?
Days    Topics  Exercises
Day 1   3       5
Day 2   3       5
Day 3   3       5
Day 4   3       5
This is a back slash  symbol (\)
In every programming language it starts with "Hello, World!"
```

In [1]:
```

challenge = 'thirty days of python'
print(challenge.capitalize())
```

```
Thirty days of python
```

In [2]:
```
challenge = 'thirty days of python'
print(challenge.count('y'))
print(challenge.count('y', 7, 14))
print(challenge.count('th'))
```

```
3
1
2
```

In [3]:
```
challenge = 'thirty days of python'
print(challenge.endswith('on'))
print(challenge.endswith('tion'))
```

```
True
False
```

In [4]:
```
challenge = 'thirty\tdays\tof\tpython'
print(challenge.expandtabs())
print(challenge.expandtabs(10))
```

```
thirty  days    of      python
thirty    days      of        python
```

In [5]:
```
challenge = 'thirty days of python'
print(challenge.find('y'))
print(challenge.find('th'))
```

```
5
0
```

In [6]:
```
first_name = 'Asabeneh'
last_name = 'Yetayeh'
job = 'teacher'
country = 'Finland'
sentence = 'I am {} {}. I am a {}. I live in {}.'.format(first_name, last_n
print(sentence)
```

```
I am Asabeneh Yetayeh. I am a teacher. I live in Finland.
```

In [7]:
```
radius = 10
pi = 3.14
area = pi
result = 'The area of circle with {} is {}'.format(str(radius), str(area))
print(result)
```

```
The area of circle with 10 is 3.14
```

In [8]:
```
challenge = 'thirty days of python'
print(challenge.find('y'))
print(challenge.find('th'))
```

```
5
0
```

In [9]:
```
challenge = 'ThirtyDaysPython'
print(challenge.isalnum())
```

```
True
```

In [10]:
```
challenge = '30DaysPython'
print(challenge.isalnum())
```

```
True
```

In [11]:
```
challenge = 'thirty days of python'
print(challenge.isalnum())
```

```
False
```

In [12]:
```
challenge = 'thirty days of python 2019'
print(challenge.isalnum())
```

```
False
```

In [13]:
```
challenge = 'thirty days of python'
print(challenge.isalpha())
num = '123'
print(num.isalpha())
```

```
False
False
```

In [14]:
```
challenge = 'thirty days of python'
print(challenge.find('y'))
print(challenge.find('th'))
```

```
5
0
```

In [17]:
```
challenge = 'Thirty'
print(challenge.isdigit())
challenge = '30'
print(challenge.isdigit())
```

```
False
True
```

In [18]:
```
num = '10'
print(num.isdecimal())
num = '10.5'
print(num.isdecimal())
```

```
True
False
```

In [19]:
```
challenge = '30DaysOfPython'
print(challenge.isidentifier())
challenge = 'thirty_days_of_python'
print(challenge.isidentifier())
```

```
False
True
```

In [20]:
```
challenge = 'thirty days of python'
print(challenge.islower())
challenge = 'Thirty days of python'
print(challenge.islower())
```

```
True
False
```

In [21]:
```
challenge = 'thirty days of python'
print(challenge.isupper())
challenge = 'THIRTY DAYS OF PYTHON'
print(challenge.isupper())
```

```
False
True
```

In [22]:
```
num = '10'
print(num.isnumeric())
print('ten'.isnumeric())
```

```
True
False
```

In [23]:
```

web_tech = ['HTML', 'CSS', 'JavaScript', 'React']
result = '#, '.join(web_tech)
print(result)
```

```
HTML#, CSS#, JavaScript#, React
```

In [24]:
```
challenge = ' thirty days of python '
print(challenge.strip('y'))
```

```
 thirty days of python
```

In [25]:
```
challenge = 'thirty days of python'
print(challenge.replace('python', 'coding'))
```

```
thirty days of coding
```

In [26]:
```
challenge = 'thirty days of python'
print(challenge.split())
```

```
['thirty', 'days', 'of', 'python']
```

In [27]:
```
challenge = 'thirty days of python'
print(challenge.title())
```

```
Thirty Days Of Python
```

In [28]:
```
challenge = 'thirty days of python'
print(challenge.swapcase())
challenge = 'Thirty Days Of Python'
print(challenge.swapcase())
```

```
THIRTY DAYS OF PYTHON
tHIRTY dAYS oF pYTHON
```

In [29]:
```
challenge = 'thirty days of python'
print(challenge.startswith('thirty'))
challenge = '30 days of python'
print(challenge.startswith('thirty'))
```

```
True
False
```

In [32]:
```
#Varabiles
first_name = 'Asutosh'
last_name = 'Kappagantu'
country = 'HYD'
city = 'TELENGANA'
age = 19
is_married = False
skills = ['HTML', 'CSS', 'JS', 'Python']
person_info = {
    'firstname':'Asabeneh',
    'lastname':'Yetayeh',
    'country':'Finland',
    'city':'Helsinki'
    }
```

In [33]:
```
print('First name:', first_name)
print('First name length:', len(first_name))
print('Last name: ', last_name)
print('Last name length: ', len(last_name))
print('Country: ', country)
print('City: ', city)
print('Age: ', age)
print('Married: ', is_married)
print('Skills: ', skills)
print('Person information: ', person_info)
```

```
First name: Asutosh
First name length: 7
Last name:  Kappagantu
Last name length:  10
Country:  HYD
City:  TELENGANA
Age:  19
Married:  False
Skills:  ['HTML', 'CSS', 'JS', 'Python']
Person information:  {'firstname': 'Asabeneh', 'lastname': 'Yetayeh', 'cou
ntry': 'Finland', 'city': 'Helsinki'}
```

In [34]:
```
first_name, last_name, country, age, is_married = 'Asabeneh', 'Yetayeh', 'H

print(first_name, last_name, country, age, is_married)
print('First name:', first_name)
print('Last name: ', last_name)
print('Country: ', country)
print('Age: ', age)
print('Married: ', is_married)
```

```
Asabeneh Yetayeh Helsink 250 True
First name: Asabeneh
Last name:  Yetayeh
Country:  Helsink
Age:  250
Married:  True
```

In [ ]: