In [1]:

```
p = int(input("\n Enter the principal Amount:"))
t = int(input("\n Enter the time period:"))
r = float(input("\n Enter the rate of interest:"))
si = p*t*r/100
print("\n Simple Interest:",si)
```

```
 Enter the principal Amount:200

 Enter the time period:4

 Enter the rate of interest:3

 Simple Interest: 24.0
```

In [2]:

```
print('''This sentence is output to the screen''')
a=5
print("The value of a is:",a)
print('x:',1,2,3,4)
x = 5 ; y = 10
print('The value of x is {} and y is {}'.format(x,y))
print('I love {0} and {1}'.format('bread','butter'))
print('I love {1} and {0}'.format('bread','butter'))
```

```
This sentence is output to the screen
The value of a is: 5
x: 1 2 3 4
The value of x is 5 and y is 10
I love bread and butter
I love butter and bread
```

In [3]:

```
print('Hello {name}, {greeting}'.format(greeting = 'Good Morning!!',\
                                        name = 'John'))
```

```
Hello John, Good Morning!!
```

In [4]:

```
x = 12.3456789
print('The value of x is %3.2f' %x)
print('The value of x is %3.4f' %x)
```

```
The value of x is 12.35
The value of x is 12.3457
```

In [5]:

```
for x in range(1, 11):
     print('{0:2d} {1:3d} {2:4d}'.format(x, x*x, x*x*x))
```

```
 1   1    1
 2   4    8
 3   9   27
 4  16   64
 5  25  125
 6  36  216
 7  49  343
 8  64  512
 9  81  729
10 100 1000
```

In [8]:

```
table = {'Raju': 9480123526, 'Ravi': 9480123527, 'Rahul': 9480123528}
for name, phone in table.items():
     print('{0:10} ==> {1:10d}'.format(name, phone))
```

```
Raju       ==> 9480123526
Ravi       ==> 9480123527
Rahul      ==> 9480123528
```

In [6]:

```
import math
print('The value of PI is approximately %5.3f.' % math.pi)
```

```
The value of PI is approximately 3.142.
```

In [7]:

```
x = input('Enter a string: ')
print("The entered string is :{0}".format(x))
y = int(input('Enter a integer: '))
print("The entered integer is :",y)
z = float(input('Enter a floating point number:'))
print("The entered real number  is :",z)
```

```
Enter a string: hello
The entered string is :hello
Enter a integer: 19
The entered integer is : 19
Enter a floating point number:20.5
The entered real number  is : 20.5
```

In [11]:

```
x = ('1' + '2' +'3' + '4')
y = '1' + '2' + '11' + '12'
weekdays = ['Monday', 'Tuesday', 'Wednesday','Thursday', 'Friday']
weekday = {'one': 'Monday'}
print ('x has a value of', x)
print ('y has a value of', y)
print(weekdays)
print(weekday)
```

```
x has a value of 1234
y has a value of 121112
['Monday', 'Tuesday', 'Wednesday', 'Thursday', 'Friday']
{'one': 'Monday'}
```

In [12]:

```
import os
x = 'Hello'
print(x)
```

```
Hello
```

In [13]:

```
var = -1
if var < 0:
    print(var)
    print("the value of var is negative")

if ( var == -1 ) :
    print("the value of var is negative")
```

```
-1
the value of var is negative
the value of var is negative
```

In [14]:

```
var = 1
if var < 0:
    print("the value of var is negative")
    print(var)
else:
    print("the value of var is positive")
    print(var)
```

```
the value of var is positive
1
```

In [15]:

```
score = 95
if score >= 99:
    print('A')
elif score >=75:
    print('B')
elif score >= 60:
    print('C')
elif score >= 35:
    print('D')
else:
    print('F')
```

```
B
```

In [16]:

```
print("First Example")
for item in [1,2,3,4,5]:
    print('item :', item)
print("Second Example")
letters = ['A', 'B', 'C']
for index in range(len(letters)):
    print('First loop letter :', letters[index])
```

```
First Example
item : 1
item : 2
item : 3
item : 4
item : 5
Second Example
First loop letter : A
First loop letter : B
First loop letter : C
```

In [17]:

```
count = 0
while (count <3):
    print('The count is:', count)
    count = count + 1
```

```
The count is: 0
The count is: 1
The count is: 2
```

In [18]:

```
list_1 = ['Statistics', 'Programming', 2016, 2017, 2018]
list_2 = ['a', 'b', 1, 2, 3, 4, 5, 6, 7 ]

print("list_1[0]: ", list_1[0])
print("list2_[1:5]: ", list_2[1:5])
```

```
list_1[0]:  Statistics
list2_[1:5]:  ['b', 1, 2, 3]
```

In [19]:

```
print("list_1 values: ", list_1)
list_1.append(2019)
print("list_1 values post append: ", list_1)
```

```
list_1 values:  ['Statistics', 'Programming', 2016, 2017, 2018]
list_1 values post append:  ['Statistics', 'Programming', 2016, 2017, 2018, 2019]
```

In [20]:

```
print("Values of list_1: ", list_1)
print("Index 2 value : ", list_1[2])
list_1[2] = 2015;
print("Index 2's new value : ", list_1[2])
```

```
Values of list_1:  ['Statistics', 'Programming', 2016, 2017, 2018, 2019]
Index 2 value :  2016
Index 2's new value :  2015
```

In [21]:

```
list_1 = ['Statistics', 'Programming', 2016, 2017, 2018]
print("list_1 values: ", list_1)
del list_1[2];
print("After deleting value at index 2 : ",list_1)
```

```
list_1 values:  ['Statistics', 'Programming', 2016, 2017, 2018]
After deleting value at index 2 :  ['Statistics', 'Programming', 2017, 2018]
```

In [22]:

```
import string
import operator

print("Length: ", len(list_1))

print("Concatenation: ", [1,2,3] + [4, 5, 6])

print("Repetition :", ['Hello'] * 4)

print("Membership :", 3 in [1,2,3])

print("Iteration :")
for x in [1,2,3]: print(x)

print("slicing :", list_1[-2])

print("slicing range: ", list_1[1:])

print("Max of list: ", max([1,2,3,4,5]))

print("Min of list: ", min([1,2,3,4,5]))

print("Count number of 1 in list: ", [1,1,2,3,4,5,].count(1))

list_1.extend(list_2)

print("Extended :", list_1)

print("Index for Programming:",list_1.index('Programming'))
print (list_1)
print("pop last item in list: ", list_1.pop())
print("pop the item with index 2: ", list_1.pop(2))
list_1.remove('b')
print("removed b from list: ", list_1)
list_1.reverse()
print("Reverse: ", list_1)
list_1 = ['a','c','b']
list_1.sort()
print("Sort ascending: ", list_1)
list_1.sort(reverse = True)
print("Sort descending: ", list_1)
```

```
Length:  4
Concatenation:  [1, 2, 3, 4, 5, 6]
Repetition : ['Hello', 'Hello', 'Hello', 'Hello']
Membership : True
Iteration :
1
2
3
slicing : 2017
slicing range:  ['Programming', 2017, 2018]
Max of list:  5
Min of list:  1
Count number of 1 in list:  2
Extended : ['Statistics', 'Programming', 2017, 2018, 'a', 'b', 1, 2, 3, 4, 5, 6, 7]
Index for Programming: 1
['Statistics', 'Programming', 2017, 2018, 'a', 'b', 1, 2, 3, 4, 5, 6, 7]
pop last item in list:  7
pop the item with index 2:  2017
removed b from list:  ['Statistics', 'Programming', 2018, 'a', 1, 2, 3, 4, 5, 6]
Reverse:  [6, 5, 4, 3, 2, 1, 'a', 2018, 'Programming', 'Statistics']
Sort ascending:  ['a', 'b', 'c']
Sort descending:  ['c', 'b', 'a']
```

In [23]:

```
Tuple = ()
print("Empty Tuple: ", Tuple)
Tuple = (1,)
print("Tuple with single item: ", Tuple)
Tuple = ('a','b','c','d',1,2,3)
print("Sample Tuple :", Tuple)
```

```
Empty Tuple:  ()
Tuple with single item:  (1,)
Sample Tuple : ('a', 'b', 'c', 'd', 1, 2, 3)
```

In [24]:

```
Tuple = ('a', 'b', 'c', 'd', 1, 2, 3)
print("3rd item of Tuple:", Tuple[2])
print("First 3 items of Tuple", Tuple[0:3])
```

```
3rd item of Tuple: c
First 3 items of Tuple ('a', 'b', 'c')
```

In [26]:

```
Tuple = ('a','b','c','d',1,2,3)
print("Length of Tuple: ", len(Tuple))
Tuple_Concat = Tuple + (7,8,9)
print("Concatinated Tuple: ", Tuple_Concat)

print("Repetition: ", (1,'a',2, 'b') * 3)
print("Membership check: ", 3 in (1,2,3))

for x in (1, 2, 3): print(x)
print("Negative sign will retrieve item from right: ", Tuple_Concat[-2])
print("Sliced Tuple [2:] ", Tuple_Concat[2:])

print("Max of the Tuple (1,2,3,4,5,6,7,8,9,10): ",
max((1,2,3,4,5,6,7,8,9,10)))
print("Min of the Tuple (1,2,3,4,5,6,7,8,9,10): ",
min((1,2,3,4,5,6,7,8,9,10)))
print("List [1,2,3,4] converted to tuple: ", type(tuple([1,2,3,4])))
```

```
Length of Tuple:  7
Concatinated Tuple:  ('a', 'b', 'c', 'd', 1, 2, 3, 7, 8, 9)
Repetition:  (1, 'a', 2, 'b', 1, 'a', 2, 'b', 1, 'a', 2, 'b')
Membership check:  True
1
2
3
Negative sign will retrieve item from right:  8
Sliced Tuple [2:]  ('c', 'd', 1, 2, 3, 7, 8, 9)
Max of the Tuple (1,2,3,4,5,6,7,8,9,10):  10
Min of the Tuple (1,2,3,4,5,6,7,8,9,10):  1
List [1,2,3,4] converted to tuple:  <class 'tuple'>
```

In [27]:

```
dict = {'Name': 'Jivin', 'Age': 6, 'Class': 'First'}
print("Sample dictionary: ", dict)
```

```
Sample dictionary:  {'Name': 'Jivin', 'Age': 6, 'Class': 'First'}
```

In [28]:

```
print("Value of key Name, from sample dictionary:", dict['Name'])
```

```
Value of key Name, from sample dictionary: Jivin
```

In [29]:

```
dict0 = {'Name': 'Jivin', 'Age': 6, 'Class': 'First'}
print("Sample dictionary: ", dict0)
k=1
for i in dict0:
    print(k,i,dict0[i])
    k=k+1
del (dict0['Name']) # Delete specific item

print("Sample dictionary post deletion of item Name:", dict0)

dict0 = {'Name': 'Jivin', 'Age': 6, 'Class': 'First'}
dict0.clear() # Clear all the contents of dictionary
print("dict post dict.clear():", dict0)

dict = {'Name': 'Jivin', 'Age': 6, 'Class': 'First'}
del (dict0) # Delete the dictionary
#print(dict0)
```

```
Sample dictionary:  {'Name': 'Jivin', 'Age': 6, 'Class': 'First'}
1 Name Jivin
2 Age 6
3 Class First
Sample dictionary post deletion of item Name: {'Age': 6, 'Class': 'First'}
dict post dict.clear(): {}
```

In [30]:

```
dict = {'Name': 'Jivin', 'Age': 6, 'Class': 'First'}
print("Sample dictionary: ", dict)
dict['Age'] = 6.5
print("Dictionary post age value update: ", dict)
```

```
Sample dictionary:  {'Name': 'Jivin', 'Age': 6, 'Class': 'First'}
Dictionary post age value update:  {'Name': 'Jivin', 'Age': 6.5, 'Class': 'First'}
```

In [31]:

```
dict = {'Name': 'Jivin', 'Age': 6, 'Class': 'First'}
print("Length of dict: ", len(dict))

dict1 = dict.copy()
print("Copy:\n",dict1)

print("Value for Age: ", dict.get('Age'))

print("dict items: ", dict.items())

print("dict keys: ", dict.keys())

print("Value of dict: ", dict.values())

dict1 = {'Name': 'Jivin', 'Age': 6}
dict2 = {'Sex': 'male' }
dict1.update(dict2)
print("dict1.update(dict2) = ", dict1)
```

```
Length of dict:  3
Copy:
 {'Name': 'Jivin', 'Age': 6, 'Class': 'First'}
Value for Age:  6
dict items:  dict_items([('Name', 'Jivin'), ('Age', 6), ('Class', 'First')])
dict keys:  dict_keys(['Name', 'Age', 'Class'])
Value of dict:  dict_values(['Jivin', 6, 'First'])
dict1.update(dict2) =  {'Name': 'Jivin', 'Age': 6, 'Sex': 'male'}
```

In [32]:

```
def someFunction():
    print("Hello World")

someFunction()
```

```
Hello World
```

In [33]:

```
def sum_two_numbers(x, y):
        return x + y

print(sum_two_numbers(1,2))
```

```
3
```

In [34]:

```
x = 10
def sum_two_numbers(y):
    return x + y
print(sum_two_numbers(10))
```

```
20
```

In [35]:

```
def sample_function(*args):
    for a in args:
        print(a)

sample_function(1,2,3)
```

```
1
2
3
```

In [36]:

```
def sample_function(**args):
    for a in args:
        print(a, args[a])

sample_function(name='John', age=27)
```

```
name John
age 27
```

In [37]:

```
def add(x, y):
    return x + y
print("FUNCTION ADD:\n",add(3,2))

add = lambda x, y : x + y
print("LAMBDA ADD :\n",add(3,2))
```

```
FUNCTION ADD:
 5
LAMBDA ADD :
 5
```