Variabe in Python

In [1]:
```
a = 3
print(a)
```

```
3
```

In [2]:
```
b = 55
print(b)
```

```
55
```

In [3]:
```
a = 6.2
print(a)
```

```
6.2
```

In [4]:
```
c = True
print(c)
```

```
True
```

In [5]:
```
d = 'Harry'
print(d)
```

```
Harry
```

In [6]:
```
e = None
print(e)
```

```
None
```

Typecasting

In [7]:
```
f = '5'
print(int(f) + 1)
```

```
6
```

In [8]:
```
g = 5
print(g)
```

```
5
```

In [9]:
```
f = '13'
print(int(f) + 4)
```

```
17
```

Operators (Arithmetic operators)

In [10]:
```
num1 = 10
num2 = 3
c = num1 + num2
print(c)
```

```
13
```

In [11]:
```
c = num1-num2
print(c)
```

```
7
```

In [12]:
```
c = num1 * num2
print(c)
```

```
30
```

In [13]:
```
c = num1 / num2
print(c)
```

```
3.3333333333333335
```

In [14]:
```
c = num1 // num2
print(c)
```

```
3
```

In [15]:
```
c = num1 ** num2
print(c)
```

```
1000
```

In [16]:
```
c = num1 % num2
print(c)
```

```
1
```

Assignment Operator

In [17]:
```
a = 4
a += 2
print(a)
```

```
6
```

In [18]:
```
a = 4
a -= 2
print(a)
```

```
2
```

In [19]:
```
a = 4
a *= 2
print(a)
```

```
8
```

In [20]:
```
a = 4
a /= 2
print(a)
```

```
2.0
```

In [21]:
```
a = 4
a //= 2
print(a)
```

```
2
```

In [22]:
```
a = 4
a **= 2
print(a)
```

```
16
```

In [23]:
```
a = 4
a %= 2
print(a)
```

```
0
```

Comparision Operator

In [24]:
```
x = 8
y = 3
z = 8
print(x>y)
print(x<y)
print(x!=y)
print(x==z)
```

```
True
False
True
True
```

Logical Operator

In [25]:
```
print(x==z and x<=y)
```

```
False
```

In [26]:
```
print(x==z or x<=z)
```

```
True
```

In [27]:
```
print(not(False))
```

```
True
```

In [28]:
```
print(not(True))
```

```
False
```

String

In [29]:
```
name = 'Harry'
print(name)
print(name[0:3])
print(name[1:4])
```

```
Harry
Har
arr
```

In [30]:
```
print(name.upper())
print(name.capitalize())
print(name.count('r'))
```

```
HARRY
Harry
2
```

input

In [31]:
```
name = input('Enter your name: ')
print(name)
```

```
Enter your name: ali
ali
```

In [32]:
```
num = input('Enter a number: ')
print(int(num) + 7)
```

```
Enter a number: 9
16
```

In [33]:
```
name = input('Enter your name:')
print(name)
```

```
Enter your name:usama
usama
```

In [34]:
```
num = input('Enter a num:')
print(int(num) * 87)
```

```
Enter a num:89
7743
```

In [35]:
```
num = input('Enter a num')
print(int(num)*4)
```

```
Enter a num8
32
```

lists and methods

l1 = [3 ,5 ,234 ,234 ,234] print(type(l1) print(l1)

In [36]:
```
l1 = [3 ,5 ,234 ,234 ,234, 'Harry']
print(type(l1))
print(l1)
```

```
<class 'list'>
[3, 5, 234, 234, 234, 'Harry']
```

In [37]:
```
l1 = [3 ,5 ,234 ,234 ,234,'Harry']
l1.remove('Harry')
print(l1.count(234))
print(l1)
```

```
3
[3, 5, 234, 234, 234]
```

In [38]:
```
l1 = [5,7,89,98,67]
l1.sort()
print(l1)
```

```
[5, 7, 67, 89, 98]
```

In [39]:
```
l1.pop()
print(l1)
```

```
[5, 7, 67, 89]
```

In [40]:
```
l1.append(78)
print(l1)
```

```
[5, 7, 67, 89, 78]
```

In [41]:
```
l1.clear()
print(l1)
```

```
[]
```

In [42]:
```
l1 = ([89,73,34,2])
print(l1.index(34))
l1[2] = 6
print(l1)
```

```
2
[89, 73, 6, 2]
```

In [43]:
```
l1[0] = 7
print(l1)
```

```
[7, 73, 6, 2]
```

In [44]:
```
l1.extend([5,8,9])
print(l1)
```

```
[7, 73, 6, 2, 5, 8, 9]
```

In [45]:
```
l1 = [4,6,8]
print(l1.index(4))

```

```
0
```

In [46]:
```
print(l1[0:2])
```

```
[4, 6]
```

In [47]:
```
t=[4,5,5]
print(t)
```

```
[4, 5, 5]
```

In [48]:
```
print(type(t))
```

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

In [49]:
```
t.append(7)
print(t)
```

```
[4, 5, 5, 7]
```

In [50]:
```
t.pop()
print(t)
```

```
[4, 5, 5]
```

In [51]:
```
t.extend([4,7,8])
print(t)
```

```
[4, 5, 5, 4, 7, 8]
```

In [52]:
```
print(t[0:3])
```

```
[4, 5, 5]
```

In [53]:
```
print(t[4:6])
```

```
[7, 8]
```

In [54]:
```
print(t.count(45))
```

```
0
```

In [56]:
```
print(t.index(4))
```

```
0
```

In [57]:
```
print(t.index(8))
```

```
5
```

In [58]:
```
t[1] = 6
print(t)
```

```
[4, 6, 5, 4, 7, 8]
```

Tuple and method

In [59]:
```
t = (3, 5, 23, 5, 23)
print(t.count(5))
print(t.index(5))
```

```
2
1
```

Set

In [60]:
```
a1 = {3, 5, 23, 5, 5, 5}
print(a1)
```

```
{3, 5, 23}
```

In [61]:
```
a1 = {3, 5, 23, 5, 5, 5}
a2 = {3, 5, 23}
a1.clear()
print(a1)
print(a2)
```

```
set()
{3, 5, 23}
```

In [62]:
```
a2 = {3, 5, 23}
print(a2.pop())
```

```
3
```

In [63]:
```
a1 = {3,5,23}
a1.add(2)
print(a1)
```

```
{2, 3, 5, 23}
```

In [64]:
```
a1 = {3, 5, 23, 5, 5, 5}
a2 = {3, 5, 23, 7, 8, 9}
print(a1.union(a2))
```

```
{3, 5, 7, 8, 9, 23}
```

In [65]:
```
print(a1.intersection(a2))
```

```
{3, 5, 23}
```

Dictionary and method

In [66]:
```
a = {}
print(type(a))
```

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

In [67]:
```
marks = {"Harsch":34,"Harry":99,"Shivni":8,"Smriti":45,"Naina":87,"Sankalo"
print(marks["Harry"])
print(marks["Naina"])
```

```
99
87
```

In [68]:
```
marks["Priyanka"] = 34
print(marks)
```

```
{'Harsch': 34, 'Harry': 99, 'Shivni': 8, 'Smriti': 45, 'Naina': 87, 'Sanka
lo': 78, 'Priyanka': 34}
```

In [69]:
```
print(marks.get("Priyanka"))
```

```
34
```

In [70]:
```
print(marks.keys())
```

```
dict_keys(['Harsch', 'Harry', 'Shivni', 'Smriti', 'Naina', 'Sankalo', 'Pri
yanka'])
```

In [71]:
```
print(marks.values())
```

```
dict_values([34, 99, 8, 45, 87, 78, 34])
```

In [72]:
```
print(marks.items())
```

```
dict_items([('Harsch', 34), ('Harry', 99), ('Shivni', 8), ('Smriti', 45),
('Naina', 87), ('Sankalo', 78), ('Priyanka', 34)])
```

In [73]:
```
s = {"ali":9,"ahmad":6,"usman":8,"faheem":7,"naeem":5}
print(s["ali"])
```

```
9
```

In [74]:
```
print(s)
```

```
{'ali': 9, 'ahmad': 6, 'usman': 8, 'faheem': 7, 'naeem': 5}
```

In [75]:
```
s["hafeez"] = 12
print(s)
```

```
{'ali': 9, 'ahmad': 6, 'usman': 8, 'faheem': 7, 'naeem': 5, 'hafeez': 12}
```

In [76]:
```
print(s.get('usman'))
```

```
8
```

In [77]:
```
print(s.keys())
```

```
dict_keys(['ali', 'ahmad', 'usman', 'faheem', 'naeem', 'hafeez'])
```

In [78]:
```
print(s.values())
```

```
dict_values([9, 6, 8, 7, 5, 12])
```

In [81]:
```
print(s.items())
```

```
dict_items([('ali', 9), ('ahmad', 6), ('usman', 8), ('faheem', 7), ('naee
m', 5), ('hafeez', 12)])
```

if else statement

In [79]:
```
age = int(input("Enter your age: "))
if(age > 18):
    print("Yes you can drive")
else:
    print("No, you can go home")
```

```
Enter your age: 23
Yes you can drive
```

In [80]:
```
age = int(input("Enter your age: "))
if(age > 18):
    print("Yes you can drive")
elif(age == 1):
    print("You are a kid")
elif(age ==10):
    print("You are a decade kid")
else:
    print("No, you can go home")
```

```
Enter your age: 15
No, you can go home
```

For loop

In [82]:
```
for i in range(5):
    print(i + 1)
```

```
1
2
3
4
5
```

In [83]:
```
for i in range(23):
    print(i + 1)
```

```
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
```

In [84]:
```
a = [1, 34, 456, 34, 234]
for item in a:
    print(item)
```

```
1
34
456
34
234
```

In [85]:
```
s = [3,23,233]
for item in s:
    print(item)
```

```
3
23
233
```

In [86]:
```
 for i in range(5):
    if(i == 3):
        break
    print(i+1)
```

```
1
2
3
```

for i in range(15): if(i == 13): break print(i + 1)

In [87]:
```
for i in range(5):
    if(i == 3):
        continue
    print(i+1)
```

```
1
2
3
5
```

In [88]:
```
for i in range(15):
    if(i == 5):
        continue
    print(i+1)
```

```
1
2
3
4
5
7
8
9
10
11
12
13
14
15
```

Function

In [89]:
```
def letterGenerator(name,date):
    st = f"Hi mam, This is {name} and I will not come to school on {date}"
    print(st)
letterGenerator('Harry', '26th October')
print("done")
```

```
Hi mam, This is Harry and I will not come to school on 26th October
done
```

In [90]:
```
def letterGenerotor(name,date):
    this = f"Hi My name is {name} on {date}"
    print(this)
letterGenerator("Usama",'2nd Febrary')
print('done')
```

```
Hi mam, This is Usama and I will not come to school on 2nd Febrary
done
```

In [91]:
```
def average(a , b):
    return(a+b)/2
print(average(34,23))
```

```
28.5
```

In [92]:
```
def subtraction(a,b):
    return(a-b)
print(subtraction(45,32))
```

```
13
```

In [93]:
```
def sum(a,b):
    return(a+b)
print(sum(45,78))
```

```
123
```

In [94]:
```
def division(a,b):
    return(a/b)
print(division(16,4))
```

```
4.0
```

In [95]:
```
# Try except function
```

In [96]:
```
try:

    a = int(input("Enter your number: "))
    print(a + 3)
except:
    print("some error occurred")
```

```
Enter your number: 9
12
```

In [97]:
```
try:


    a = int(input("Enter your number: "))
    print(a + 3)
except :
    print("Some error occurred")
```

```
Enter your number: 0
3
```

In [98]:
```
a = input("Enter Your Name:")
print(a)
```

```
Enter Your Name:ali
ali
```

In [99]:
```
try:
    b = int(input("Enter Your number:"))
    print(b+6)
except Exception as e:
    print("Some error occurred",e)
```

```
Enter Your number:8
14
```

In [100]:
```
try:
    c = input("Enter your Name")
    print(c)
except:
    print("Some error occured")
```

```
Enter your Nameusama
usama
```

In [101]:
```
a=7
print(a)
```

```
7
```

Classes

In [ ]:
```
class Car():
    def __init__(self, modelname, yearm, price):
        self.modelname = modelname
        self.yearm = yearm
        self.price = price
honda = Car('City', 2017, 1000000)
tata = Car('Bolt', 2016, 600000)
print(honda,price)
```

In [ ]:
```
class Student():
    def check_pass_fail(self):
        if self.marks >= 40:
            return True
        else:
            return False

        def __init__(self,name,marks):
            self.name = name
            self.marks = marks

student1 = Student("Harry", 85)
student2 = Student("Janet", 30)
print(student1.name)
print(student1.marks)
```

In [ ]:
```
class Phone:
    def make_call(self):
        print("Making phone call")

    def play_game(self):
        print("Playing Game")
p1=Phone()
p1.make_call()
```

In [ ]:
```
class Phone:
    def make_call(self):
        print("Making phone call")

    def play_game(self):
        print("Playing Game")
p1=Phone()
p1.make_call()
p1.play_game()
```

In [ ]:
```
class Phone:
    def set_color(self,color):
        self.color=color

    def set_cost(self,cost):
        self.cost=cost

    def show_color(self):
        return self.color

    def show_cost(self):
        return self.cost

     def make_call(self):
        print("Making phone call")

    def play_game(self):
        print("Playing Game")

        p2 = Phone()
        p2.set_color("blue")
        p2.set_cost(5000)
        p2.show_color()
        p2.show_cost()
```

In [ ]:
```
class Employee:
    def __init__(self,name,age,salary,gender):
        self.name = name
        self.age = age
        self.salary = salary
        self.gender = gender

    def show_employee_details(self):
        print("Name of employee is ", self.name)
        print("Age of employee is ", self.age)
        print("Salary of employee is ", self.salary)
        print("Gender of employee is ", self.gender)
e1 = Employee('usama',32,50000,'male')
e1.show_employee_details()
```

In [ ]:
```
class vehicle:
    def __init__(self,mileage,cost):
        self.mileage = mileage
        self.cost = cost

    def show_vehicle_detail(self):
        print("Mileage of vehicle is ",self.mileage)
        print("Cost of vehicle is ",self.cost)
v1 = vehicle(300,500)
v1.show_vehicle_detail()
```

In [ ]:
```
class university:
    def __init__(self,department,fee):
        self.department = department
        self.fee = fee

    def show_university_detail(self):
        print("department of university is ",self.department)
        print("fee of university is ",self.fee)
u1 = university("Data Science",500000)
u1.show_university_detail()
```

In [ ]:
```

```