Python Programming by Abhay Chougule (5+ Yrs of Exp.)

```
In [2]:
"""5 Years+ Experience in Software Development, Python Programmer, Genuinely Working on Machine Lear
ning /Deep Learning Projects
Call: 8237180203
Email Id: abhaychougule01@gmail.com"""
Out[2]:
'5 Years+ Experience in Software Development, Python Programmer, Genuinely Working on Machine
Learning /Deep Learning Projects \nCall: 8237180203\nEmail Id: abhaychougule01@gmail.com'
In [ ]:
print('python')
In [ ]:
print("python")
In [ ]:
print("""python""")
In [ ]:
a=10
b=20.10
c="abhay"
\#c=a+b
print(c)
print(a+b)
In [ ]:
a=20
b=30
In [ ]:
c=a+b
print(c)
In [ ]:
r=20
f=30
In [ ]:
z=r+f
print(z)
In [ ]:
counter=10
miles=20
print("counter", counter)
```

```
In [ ]:
print('miles', miles)
In [ ]:
city="Pune"
print("city")
print(city)
In [ ]:
a=b=c=1
print(c)
In [ ]:
str="IlovemyIndia"
#print(str)
#print(str[0])
#print(str[1:7])1======7
#print(str[6:7])
#print(str[1:-3])
#print(str[4:-5])
#print(str + " Rack")
0,1,2,3,4,5
In [ ]:
a="msdhoni"
print(a[-6:-3])
#sdh
In [ ]:
list=[2,3,4,5,6,"Rack","Sachin"]
print(list)
In [ ]:
print(list[1:3])
In [ ]:
print(list[3:6])
In [ ]:
print(list[:])
```

```
⊏xp.)
In [ ]:
### Arithmetic Operatoers
In [ ]:
a = 20
b=30
c=a+b
In [ ]:
print(a+b)
print(c)
In [ ]:
print(a-b)
print(c)
In [ ]:
### Comparison Operatoers
In [ ]:
a=20
b=30
c=a+b
#a==b
#a!=b
#a>b
#a<b
a>=b
In [ ]:
### Assignment Operatoers
c=a+b
print(c)
String #Python Programming by Abhay Chougule (5+ Yrs of Exp.)
In [ ]:
print('Hello')
print("Hello")
print("""Abhay""")
In [ ]:
a = "Hello"
print(a)
In [ ]:
a = """Lorem ipsum dolor sit amet,
consectetur adipiscing elit,
sed do eiusmod tempor incididunt
ut labore et dolore magna aliqua."""
print(a)
```

```
In [ ]:
a = '''Lorem ipsum dolor sit amet,
consectetur adipiscing elit,
\verb|sed| do eiusmod tempor incididunt|\\
ut labore et dolore magna aliqua.'''
print(a)
In [ ]:
a = "HelloWorld!"
print(a[8:6])
In [ ]:
print(a[5])
In [ ]:
b = "HelloWorld!"
print(b[2:7])
In [ ]:
b = "HelloWorld!;'/.,'"
print(b[-6])
In [ ]:
a = "Hello World!"
print(len(a))
In [ ]:
a = " Hello World!
print(a)
#print(a.strip())
In [ ]:
a ="Hello WORLD!"
print(a.lower())
In [ ]:
a = "Hello, World!"
print(a.upper())
In [ ]:
a = "1, 2, 3"
print(a.upper())
In [ ]:
a = "Hello World!"
print(a.replace("H", "J"))
print(a.replace("Hello", "My"))
txt = "The rain in Spain stays mainly in the plain"
x = "in Spain" in txt
print(x)
```

Python Decision Making #Python Programming by Abhay Chougule (5+ Yrs of Exp.)

In []:
var=150
if(var<=100):</pre>

print("The value is 100")

```
else:
   print("Hey Everyone")
In [ ]:
a = 20
b=1.0
if (a>b):
   print("Its True")
else:
   print("Its False")
print("Now i am not happy")
Python Loops Python Programming by Abhay Chougule (5+ Yrs of Exp.)
In [ ]:
fruits = ["apple", "banana", "cherry"] #list
for x in fruits:
 print(x)
In [ ]:
for x in "banana": #With String
 print(x)
In [ ]:
fruits = ["apple", "banana", "cherry"] #with Break Statement
for x in fruits:
 print(x)
  if x == "cherry":
   break
In [ ]:
fruits = ["apple", "banana", "cherry"]
for x in fruits:
 if x == "banana":
   break
 print(x)
In [ ]:
fruits = ["apple", "banana", "cherry"] #Continue Statement
for x in fruits:
 if x == "banana":
   continue
 print(x)
In [ ]:
for x in range(10): # Range Function
 print(x)
Tn [ ].
```

```
for x in range(2, 6):
    print(x)

In []:

for x in range(3, 10, 3):
    print(x)
```

Python Collections (Arrays) Python Programming by Abhay Chougule (5+ Yrs of Exp.)

```
List: is a collection which is ordered and changeable. Allows duplicate members.
Tuple is a collection which is ordered and unchangeable. Allows duplicate members.
In [ ]:
#list
#A list is a collection which is ordered and changeable. In Python lists are written with square b
rackets.
mylist = ["apple", "banana", "cherry"]
print(mylist)
In [ ]:
mylist = ["apple", "banana", "cherry", "orange", "kiwi", "melon", "mango"]
print(mylist[4:6])
In [ ]:
mylist = ["apple", "banana", "cherry", "orange", "kiwi", "melon", "mango"]
print(mylist[2:])
In [ ]:
mylist = ["apple", "banana", "cherry", "orange", "kiwi", "melon", "mango"]
print(mylist[0:-1])
mylist = ["apple", "banana", "cherry", "orange", "kiwi", "melon", "mango"]
print(mylist[:4])
In [ ]:
mylist = ["apple", "banana", "cherry", "orange", "kiwi", "melon", "mango"]
print(mylist[2:4])
In [ ]:
mylist = ["apple", "banana", "cherry"]
mylist[1] = "blackcurrant"
print(mylist)
mylist = ["apple", "banana", "cherry"]
for x in "banana":
```

```
brinc(x)
In [ ]:
mylist = ["apple", "banana", "cherry"]
mylist.append("orange")
print(mylist)
In [ ]:
mylist = ["apple", "banana", "cherry"]
mylist.append("apple")
print(mylist)
In [ ]:
mylist = ["apple", "banana", "cherry"]
mylist.insert(1, "orange")
print(mylist)
In [ ]:
mylist = ["apple", "banana", "cherry"]
mylist.remove("banana")
print(mylist)
In [ ]:
mylist = ["apple", "banana", "cherry"]
mylist.pop()
print(mylist)
In [ ]:
mylist = ["apple", "banana", "cherry"]
del mylist[0]
print(mylist)
#mylist
In [ ]:
mylist = ["apple", "banana", "cherry"]
{\tt del} mylist
In [ ]:
print(mylist)
```

Tuples #Python Programming by Abhay Chougule (5+ Yrs of Exp.)

A tuple is a collection which is ordered and unchangeable. In Python tuples are written with round brackets.

```
In []:
#tuples

#A tuple is a collection which is ordered and unchangeable.
#In Python tuples are written with round brackets.

mylist = ("abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru")
print(mylist)
print(type(mylist))
```

```
In [ ]:
mylist = ("abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru")
print(mylist[1])
In [ ]:
mylist = ("abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru")
print(mylist[2:-4])
In [ ]:
mylist = ("abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru")
print(mylist[4:5])
In [ ]:
mylist = ("abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi")
print(mylist[5:-2])
In [ ]:
x = ("apple", "banana", "cherry") # Convert the tuple into a list to be able to change it:
y = list(x)
y[2] = "kiwi" #update with banana
x = tuple(y)
print(y)
print(x)
In [ ]:
a = (1005, -14)
b=(61654655,0)
if(a>b):
   print("a is bigger")
else:
   print("b is bigger")
In [ ]:
mylist = ("abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru")
for x in mylist:
 print(x)
In [ ]:
mylist = ("abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru")
print(len(mylist))
In [ ]:
mylist = ("abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru")
mylist.pop()
#print(x)
print(mylist)
                                               #this will raise an error because the tuple no longer
xists
4
                                                                                                   ▶
In [ ]:
#Joining 2 tuples
tuple1 = ("a", "b" , "c")
tuple2 = (1, 2, 3)
```

```
tuple3 = tuple1 + tuple2
print(tuple3)
thistuple = tuple(("apple", "banana", "cherry")) # note the double round-brackets
print(thistuple)
```

sets #Python Programming by Abhay Chougule (5+ Yrs of Exp.)

A set is a collection which is unordered and unindexed. In Python sets are

```
written with curly brackets.
myset = {"abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru"}
print(myset)
In [ ]:
myset = {"abhay", "amar", "ankita", "sagar", "rahul", "mahi", "pooja", "viru"}
for x in "mahi":
   print(x)
#for(int i=1;i<n;i++)
In [ ]:
myset = {"abhay", "sagar", "rahul", "pooja", "Mahi", "viru"}
print("pooja" in myset)
myset = {"abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru"} #Add an item to a set
myset.add("orange")
myset.add("Mangos")
myset.add("orange")
myset.add("Bluee")
print(myset)
In [ ]:
myset = {"abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru"} #Add multiple items to a
myset.update(["orange", "mango", "grapes"])
print(myset)
In [ ]:
myset = {"abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru"}
print(len(myset))
myset = {"abhay", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru"}
mvset.remove("a")
```

```
print(myset)
In [ ]:
myset = {"abhay", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru"}
myset.discard("a")
print(myset)
In [ ]:
myset = {"pooja","Mahi","viru","AMAR","adi","Ankita","rahul","Krishna"}
x = myset.pop()
print(x)
print(myset)
In [ ]:
myset = {"abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru"}
myset.clear()
print(myset)
In [ ]:
set1 = {"abhay", "amar", "ankita", "sagar", "rahul", "pooja", "Mahi", "viru"}
set2 = \{1, 2, 3\}
set3 = set1.union(set2)
print(set3)
In [ ]:
set1 = {"abhay", "Amar", "Ankita"}
set2 = \{1, 2, 3\}
set1.update(set2)
print(set1)
In [ ]:
a=set()
b={}
C=[]
print(type(a))
print(type(b))
print(type(c))
In [ ]:
"""Method Description
add() Adds an element to the set
clear() Removes all the elements from the set
copy() Returns a copy of the set
difference() Returns a set containing the difference between two or more sets
difference update() Removes the items in this set that are also included in another, specified set
discard() Remove the specified item
intersection() Returns a set, that is the intersection of two other sets
intersection_update() Removes the items in this set that are not present in other, specified set(s
isdisjoint() Returns whether two sets have a intersection or not
```

issubset() Returns whether another set contains this set or not

```
issuperset() Returns whether this set contains another set or not pop() Removes an element from the set remove() Removes the specified element symmetric_difference() Returns a set with the symmetric differences of two sets symmetric_difference_update() inserts the symmetric differences from this set and another union() Return a set containing the union of sets update() Update the set with the union of this set and others
```

dictionary Python Programming by Abhay Chougule (5+ Yrs of Exp.)

A dictionary is a collection which is changeable and indexed. In Python dictionaries are written with curly brackets, and they have keys and values.

```
In [1]:
mydict = {
  "Abhay": "Developer",
  "Amar": "Shopper",
  "rack": "Python",
  "year": 2020
print(mydict)
{'Abhay': 'Developer', 'Amar': 'Shopper', 'rack': 'Python', 'year': 2020}
In [2]:
x = mydict["rack"]  # Find the value
Out[2]:
'Python'
In [3]:
x = mydict.get("Amar")
Х
Out[3]:
'Shopper'
In [4]:
mydict = {
  "Abhay": "Developer",
  "Amar": "Shopkeeper",
  "year": 2020
mydict["year"] = 1921
In [5]:
print(mydict)
{'Abhay': 'Developer', 'Amar': 'Shopkeeper', 'year': 1921}
In [6]:
for x in mydict:
```

```
print(x)
Abhay
Amar
year
In [7]:
for x in mydict:
 print(mydict[x])
Developer
Shopkeeper
1921
In [8]:
for x in mydict.values():
 print(x)
Developer
Shopkeeper
1921
In [9]:
for x, y in mydict.items():
 print(x, y)
Abhay Developer
Amar Shopkeeper
year 1921
In [10]:
mydict = {
 "Abhay": "Developer",
  "Amar": "Shopkeeper",
  "year": 2020
if "Abhay" in mydict:
 print("Yes, in dictionary")
else:
 print("Yes not in dictionary")
Yes, in dictionary
In [11]:
print(len(mydict))
3
In [12]:
mydict = {
 "Abhay": "Developer",
  "Amar": "Shopkeeper",
 "year": 2020
mydict["color"] = "red"
print(mydict)
{'Abhay': 'Developer', 'Amar': 'Shopkeeper', 'year': 2020, 'color': 'red'}
```

```
In [13]:
mydict = {
 "Abhay": "Developer",
  "Amar": "Shopkeeper",
 "year": 2020
mydict.pop("Abhay")
print(mydict)
{'Amar': 'Shopkeeper', 'year': 2020}
In [14]:
mydict = {
 "111": "333",
  "": "",
  "year": 2020,
   "rack":5555
x=mydict.popitem()
print(x)
print(mydict)
('rack', 5555)
{'111': '333', '': '', 'year': 2020}
In [15]:
mydict = {
 "Abhay": "Developer",
  "Amar": "Shopkeeper",
 "year": 2020
del mydict["Amar"]
print(mydict)
{'Abhay': 'Developer', 'year': 2020}
In [16]:
mydict = {
 "Abhay": "Developer",
  "Amar": "Shopkeeper",
 "year": 2020
mydict.clear()
print(mydict)
{ }
In [17]:
mydict = {
  "Abhay": "Developer",
  "Amar": "Shopkeeper",
  "year": 2020
mydict1 = mydict.copy()
print(mydict1)
{'Abhay': 'Developer', 'Amar': 'Shopkeeper', 'year': 2020}
In [18]:
mydict = {
  "Abhay": "Developer",
```

```
"Amar": "Snopkeeper",

"year": 2020
}
mydict1 = dict (mydict)
print (mydict1)

{'Abhay': 'Developer', 'Amar': 'Shopkeeper', 'year': 2020}

Method Description
clear() Removes all the elements from the dictionary
copy() Returns a copy of the dictionary
```

fromkeys() Returns a dictionary with the specified keys and value

get() Returns the value of the specified key

items() Returns a list containing a tuple for each key value pair

keys() Returns a list containing the dictionary's keys

pop() Removes the element with the specified key

popitem() Removes the last inserted key-value pair

setdefault() Returns the value of the specified key. If the key does not

exist: insert the key, with the specified value

print ("b is greater than a")

print("a and b are equal")

elif a == b:

update() Updates the dictionary with the specified key-value pairs

values() Returns a list of all the values in the dictionary

Python If ... Else # Python Programming by Abhay Chougule (5+ Yrs of Exp.)

```
In [ ]:
""" Equals: a == b
Not Equals: a != b
Less than: a < b
Less than or equal to: a <= b
Greater than: a > b
Greater than or equal to: a >= b """
In [ ]:
a = 33
b = 200
if b > a:
 print("b is greater than a")
In [ ]:
b = 200
if b > a:
print("b is greater than a") # you will get an error
In [ ]:
a = 33
b = 300
if b > a:
```

```
In [ ]:
a = 200
b = 33
if b > a:
print("b is greater than a")
elif a < b:</pre>
 print("a and b are equal")
else:
 print("a is greater than b")
In [ ]:
a = 200
b = 33
if b > a:
 print("b is greater than a")
 print("b is not greater than a")
In [ ]:
if a > b: print("a is greater than b")
In [ ]:
b = 330
print("A") if a > b else print("B")
In [ ]:
a = 330
b = 330
print("A") if a > b else print("=") if a == b else print("B")
In [ ]:
a = 200
b = 3030
c = 500
if c > b and b > a:
print("Both conditions are True")
else:
 print("Its totally wrong")
In [ ]:
a = 200
b = 33
c = 500
if a > b and a > c:
print("At least one of the conditions is True")
else:
 print("Its totally wrong")
In [19]:
x = 100
if x > 10:
 print("Above ten,")
 if x > 20:
   print("and also above 20!")
else:
 print("but not above 20.")
Above ten,
```

apple

Python While Loops #Python Programming by Abhay Chougule (5+ Yrs of Exp.)

```
In [ ]:
i = 1
while i < 6:
 print(i)
 i += 1
In [ ]:
i = 1
while i < 6:
 print(i)
 if i == 3:
  break
 i += 1
In [ ]:
i = 0
while i < 6:
 i += 1
 if i == 3:
  continue
 print(i)
In [ ]:
i = 1
while i < 6:
print(i)
  i += 1
 print("i is no longer less than 6")
In [ ]:
```

Python For Loops Python Programming by Abhay Chougule (5+ Yrs of Exp.)

```
In [20]:
fruits = ["apple", "banana", "cherry"]
for x in "apple":
    print(x)

a
p
p
p
I
l
e
In [21]:

for x in fruits:
    print(x)
```

```
banana
cherry
In [22]:
fruits = ["apple", "banana", "cherry"]
for x in fruits:
 print(x)
 if x == "banana":
   break
apple
banana
In [ ]:
fruits = ["apple", "banana", "cherry"]
for x in fruits:
 if x == "banana":
   break
 print(x)
In [ ]:
fruits = ["apple", "banana", "cherry"]
for x in fruits:
 if x == "banana":
   continue
 print(x)
In [ ]:
for x in range(6):
 print(x)
In [ ]:
for x in range(2, 6):
 print(x)
In [ ]:
for x in range(2, 30, 3):
 print(x)
In [ ]:
for x in range(6):
 print(x)
 print("Finally finished!")
In [ ]:
adj = ["red", "big", "tasty"]
fruits = ["apple", "banana", "cherry"]
for x in adj:
 for y in "apple":
   print(x, y)
```

Python Arrays #Python Programming by Abhay Chougule (5+ Yrs of Exp.)

Arrays are used to store multiple values in one single variable:

```
In [25]:
"""car1 = "Ford"
car2 = "Volvo"
car3 = "BMW" """
Out[25]:
'car1 = "Ford"\ncar2 = "Volvo"\ncar3 = "BMW" '
In [26]:
cars = ["Ford", "Volvo", "BMW"]
In [29]:
x = cars[2]
Х
Out[29]:
'BMW'
In [30]:
cars[0] = "Toyota"
In [31]:
cars
Out[31]:
['Toyota', 'Volvo', 'BMW']
In [33]:
x = len(cars)
Х
Out[33]:
In [41]:
cars.append("Honda")
cars
Out[41]:
['Toyota',
 'Volvo',
 'BMW',
 'Honda',
 'Honda',
 'Kiya',
 'Kia',
 'Honda',
 'Honda',
 'Kia',
 'Honda']
```

```
In [54]:
cars.append("Kia")
cars
Out[54]:
['Toyota', 'Kia']
In [55]:
p=cars.pop(1)
print(p)
print(cars)
['Toyota']
In [57]:
cars.remove("Toyota")
                                          Traceback (most recent call last)
<ipython-input-57-b640feaf1199> in <module>
---> 1 cars.remove("Toyota")
ValueError: list.remove(x): x not in list
In [ ]:
"""append() Adds an element at the end of the list
clear() Removes all the elements from the list
copy() Returns a copy of the list
count() Returns the number of elements with the specified value
extend() Add the elements of a list (or any iterable), to the end of the current list
index() Returns the index of the first element with the specified value
insert() Adds an element at the specified position
pop() Removes the element at the specified position
remove() Removes the first item with the specified value
reverse() Reverses the order of the list
sort() Sorts the list"""
```

Python Lambda #Python Programming by Abhay Chougule (5+ Yrs of Exp.)

A lambda function is a small anonymous function.

A lambda function can take any number of arguments, but can only have one expression.

```
In [59]:
x = lambda a : a / 200
print(x(5))

0.025
In [60]:
```

```
x = lambda a, b : a * b
print(x(5, 6))
30
In [61]:
x = lambda a, b, c : a + b + c
print(x(5, 6, 2))
13
In [62]:
def myfunc(n):
  return lambda a : a * n
In [64]:
def myfunc(n):
  return lambda a : a * n
"""x = lambda \ a : a / 200
print(x(5))"""
x = myfunc(2)
print(x(11))
22
In [65]:
def myfunc(n):
 return lambda a : a * n
x = myfunc(2)
y = myfunc(3)
print(x(11))
print(y(11))
22
33
In [ ]:
```

Python Functions #Python Programming by Abhay Chougule (5+ Yrs of Exp.)

A function is a block of code which only runs when it is called.

You can pass data, known as parameters, into a function.

A function can return data as a result.

```
In [66]:
```

```
def rack():
    print("Hello from a function")
rack()
```

```
Hello from a function
In [69]:
def rack():
 print("a function")
rack()
def racksonsit():
print("a Racksonsit developers")
#rack()
racksonsit()
a function
a Racksonsit developers
In [70]:
def rack(fname):
 print(fname + " Developers")
rack("Software")
rack("Machine")
rack("Network")
Software Developers
Machine Developers
Network Developers
In [74]:
def rack(fname,lname):
                                                              " + lname)
    print(fname + "
rack("
                                              Abhay","
                                                                                  Chougule")
                                        Abhay
Chougule
In [76]:
def rack(c1,c2,c3):
    print("Who is the Younger:"+ c2)
rack(c1="Abhay", c2="Amar",c3="Ankita")
Who is the Younger: Amar
```

Class #Python Programming by Abhay Chougule (5+ Yrs of Exp.)

In [77]:

To understand the meaning of classes we have to understand the built-in init() function.

All classes have a function called init(), which is always executed when the class is being initiated.

Use the init() function to assign values to object properties, or other operations that are

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necessary to do when the object is being created:
In [82]:
class Maxclass:
  def __init__(self, name, age):
    self.name = name
    self.age = age
p1 = Maxclass("Abhay Chougule", 28)
print(p1.name)
print(p1.age)
Abhay Chougule
In [81]:
class Maxclass:
  def __init__(self, name, age):
   self.name = name
   self.age = age
  def myfunc(self):
   print("Hello my name is " + self.name)
  def myfunc(self):
   print("Hello my name is " + self.name)
p1 = Maxclass("John", 36)
#del pl.age
#print(p1.age)
#print(p1.name)
#print(p1.age)
AttributeError
                                           Traceback (most recent call last)
<ipython-input-81-aa8bb4fa8107> in <module>
     1.0
     11 del pl.age
---> 12 print (pl.age)
     13 #print(p1.name)
AttributeError: 'Maxclass' object has no attribute 'age'
In [ ]:
class emp:
    empc=0
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def __init__(self,name,salary):

print("Total Emp % d" %employee.empc)

self.name=name self.salary=salary emp.empc +=1

def displayC(self):

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def displayEmp(self):
        print("Name:", self.name, "Salary:", self.salary)
emp1=emp("Amar",5000)
emp2=emp("Ankita",5500)
emp1.displayEmp()
emp2.displayEmp()
print("Total Emp %d"%emp.empc)
In [1]:
"""5 Years+ Experience in Software Development, Python Programmer, Genuinely Working on Machine Lear
ning /Deep Learning Projects
Call: 8237180203
Email Id: abhaychougule01@gmail.com"""
Out[1]:
'5 Years+ Experience in Software Development, Python Programmer, Genuinely Working on Machine
Learning /Deep Learning Projects \nCall: 8237180203\nEmail Id: abhaychougule01@gmail.com'
In [ ]:
```