In [1]:

```
print("Hello")
```

```
Hello
```

In [2]:

```
s=input()
```

```
APSSDC
```

In [4]:

```
maxcount=0
for i in s:
    c=s.count(i)
    if maxcount<c:
        maxcount=c
        ch=i
print(ch,maxcount)
```

```
S 2
```

In [10]:

```
index=s.find(ch)
index
```

Out[10]:

```
2
```

In [12]:

```
s[:index]+s[index].lower()+s[index+1:]
```

Out[12]:

```
'APsSDC'
```

In [13]:

```
1 s[2].lower()
```

Out[13]:

```
's'
```

python data structures

list-->[]
tuple-->()
set-->{}
dictanaries-->{}

In [15]:

```
1 li=[1,"Vemu",375.6]
```

In [16]:

```
1 t=(1,"Vemu",375.6)
```

In [17]:

```
1 print(li)
2 print(t)
```

```
[1, 'Vemu', 375.6]
(1, 'Vemu', 375.6)
```

In [18]:

```
1 li[1]
```

Out[18]:

```
'Vemu'
```

In [19]:

```
1 t[1]
2
```

Out[19]:

```
'Vemu'
```

In [20]:

```
1 li[1]="Vemu Institue"
2 li
```

Out[20]:

```
[1, 'Vemu Institue', 375.6]
```

In [21]:

```
1 t[1]="Vemu Institue"
```

```
---------------------------------------------------
----------------------
TypeError                                 Traceback
 (most recent call last)
<ipython-input-21-d02e3b519b67> in <module>
----> 1 t[1]="Vemu Institue"

TypeError: 'tuple' object does not support item assi
gnment
```

In [23]:

```
1 dir(list)
```

Out[23]:

```
['__add__',
 '__class__',
 '__contains__',
 '__delattr__',
 '__delitem__',
 '__dir__',
 '__doc__',
 '__eq__',
 '__format__',
 '__ge__',
 '__getattribute__',
 '__getitem__',
 '__gt__',
 '__hash__',
 '__iadd__',
 '__imul__',
 '__init__',
 '__init_subclass__',
 '__iter__',
 '__le__',
 '__len__',
 '__lt__',
 '__mul__',
 '__ne__',
 '__new__',
 '__reduce__',
 '__reduce_ex__',
 '__repr__',
 '__reversed__',
 '__rmul__',
 '__setattr__',
 '__setitem__',
 '__sizeof__',
 '__str__',
 '__subclasshook__',
 'append',
 'clear',
 'copy',
```

```
 'count',
 'extend',
 'index',
 'insert',
 'pop',
 'remove',
 'reverse',
 'sort']
```

In [41]:

```
1 li=[1,1,2,3,1,4]
2 li.insert(1,10)
3 li.sort(reverse)
4 li
```

```
---------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-41-8affac9704ff> in <module>
      1 li=[1,1,2,3,1,4]
      2 li.insert(1,10)
----> 3 li.sort(reverse)
      4 li

NameError: name 'reverse' is not defined
```

In [42]:

```
1 help(list.sort)
```

```
Help on method_descriptor:

sort(self, /, *, key=None, reverse=False)
    Stable sort *IN PLACE*.
```

In [26]:

```
1 li.append(l)
```

In [27]:

```
1 li
```

Out[27]:

```
[1, 'Vemu Institue', 375.6, [2, 'chittor', 455.21]]
```

In [28]:

```
1 li.extend(l)
```

In [29]:

```
1 li
```

Out[29]:

```
[1, 'Vemu Institue', 375.6, [2, 'chittor', 455.21],
2, 'chittor', 455.21]
```

In [43]:

```
1 l
```

Out[43]:

```
[2, 'chittor', 455.21]
```

In [44]:

```
1 l.sort()
```

```
---------------------------------------------------
----------------------
TypeError                                 Traceback
 (most recent call last)
<ipython-input-44-fb07ac7c73ab> in <module>
----> 1 l.sort()

TypeError: '<' not supported between instances of 's
tr' and 'int'
```

In [45]:

```
1 l=['vemu','ramu','sam']
```

In [46]:

```
1 l.sort()
```

In [47]:

```
1 l
```

Out[47]:

```
['ramu', 'sam', 'vemu']
```

In [50]:

```
1 l1=['ra','ram','r','ramu']
2 l1.sort()
```

In [51]:

```
1 l1
```

Out[51]:

```
['r', 'ra', 'ram', 'ramu']
```

In [52]:

```
1 max(l1)
```

Out[52]:

```
'ramu'
```

In [53]:

```
1 min(l)
```

Out[53]:

```
'ramu'
```

In [54]:

```
1 dir(tuple)
```

Out[54]:

```
['__add__',
 '__class__',
 '__contains__',
 '__delattr__',
 '__dir__',
 '__doc__',
 '__eq__',
 '__format__',
 '__ge__',
 '__getattribute__',
 '__getitem__',
 '__getnewargs__',
 '__gt__',
 '__hash__',
 '__init__',
 '__init_subclass__',
 '__iter__',
 '__le__',
 '__len__',
 '__lt__',
 '__mul__',
 '__ne__',
 '__new__',
 '__reduce__',
 '__reduce_ex__',
 '__repr__',
 '__rmul__',
 '__setattr__',
 '__sizeof__',
 '__str__',
 '__subclasshook__',
 'count',
 'index']
```

SETS

In [59]:

```
1  s={1,2,1.5,-1,1.5}
```

In [61]:

```
1  s1={1,25,-5,-15}
2  s1
```

Out[61]:

```
{-15, -5, 1, 25}
```

In [62]:

```
1 dir(set)
```

Out[62]:

```
['__and__',
 '__class__',
 '__contains__',
 '__delattr__',
 '__dir__',
 '__doc__',
 '__eq__',
 '__format__',
 '__ge__',
 '__getattribute__',
 '__gt__',
 '__hash__',
 '__iand__',
 '__init__',
 '__init_subclass__',
 '__ior__',
 '__isub__',
 '__iter__',
 '__ixor__',
 '__le__',
 '__len__',
 '__lt__',
 '__ne__',
 '__new__',
 '__or__',
 '__rand__',
 '__reduce__',
 '__reduce_ex__',
 '__repr__',
 '__ror__',
 '__rsub__',
 '__rxor__',
 '__setattr__',
 '__sizeof__',
 '__str__',
 '__sub__',
 '__subclasshook__',
 '__xor__',
```

```
 'add',
 'clear',
 'copy',
 'difference',
 'difference_update',
 'discard',
 'intersection',
 'intersection_update',
 'isdisjoint',
 'issubset',
 'issuperset',
 'pop',
 'remove',
 'symmetric_difference',
 'symmetric_difference_update',
 'union',
 'update']
```

In [99]:

```
1  s.update(s1)
2  s
```

Out[99]:

```
{-313, -31, -3, -1, 1, 1.42, 1.5, 2}
```

In [94]:

```
1  s1=s.copy()
```

In [97]:

```
1  s1.add(-313)
2  s1
```

Out[97]:

```
{-313, -31, -3, -1, 1, 1.42, 1.5, 2}
```

In [73]:

```
1  s2=s.copy()
```

In [74]:

```
1 s2
```

Out[74]:

```
{-1, 1, 1.42, 1.5, 2}
```

In [68]:

```
1 s
```

Out[68]:

```
{-1, 1, 1.42, 1.5, 2}
```

In [69]:

```
1 s.difference(s1)
```

Out[69]:

```
{-1, 1.42, 1.5, 2}
```

In [71]:

```
1 s1.difference(s)
```

Out[71]:

```
{-15, -5, 25}
```

In [75]:

```
1 s2
```

Out[75]:

```
{-1, 1, 1.42, 1.5, 2}
```

In [76]:

```
1 s2.pop()
```

Out[76]:

```
1
```

In [79]:

```
1 s2.remove(-1)
```

In [80]:

```
1 s2
```

Out[80]:

```
{1.42, 1.5, 2}
```

In [82]:

```
1 s2.discard(1.42)
```

In [83]:

```
1 s2
```

Out[83]:

```
{1.5, 2}
```

In [84]:

```
1 s2.add(-1)
```

In [85]:

```
1 s2
```

Out[85]:

```
{-1, 1.5, 2}
```

In [86]:

```
1 s2.discard(-1)
```

In [87]:

```
1 s2
```

Out[87]:

```
{1.5, 2}
```

In [92]:

```
1 s2.discard({1.5,2})
```

##

In [93]:

```
1 s2
```

Out[93]:

```
{1.5, 2}
```

Dictionary

In [100]:

```
d={}
type(d)
```

Out[100]:

```
dict
```

In [102]:

```
d[1]=123
```

In [103]:

```
d
```

Out[103]:

```
{1: 123}
```

In [104]:

```
d[1]=13
```

In [105]:

```
d
```

Out[105]:

```
{1: 13}
```

In [106]:

```
d[2]=13
```

In [107]:

```
1 d
```

Out[107]:

```
{1: 13, 2: 13}
```

In [108]:

```
1 d[20]=152
```

In [109]:

```
1 d
```

Out[109]:

```
{1: 13, 2: 13, 20: 152}
```

In [110]:

```
1 d["college"]='VEMU'
```

In [111]:

```
1 d
```

Out[111]:

```
{1: 13, 2: 13, 20: 152, 'college': 'VEMU'}
```

In [112]:

```
1 d['college']="Lendi"
```

In [113]:

```
1 d
```

Out[113]:

```
{1: 13, 2: 13, 20: 152, 'college': 'Lendi'}
```

In [114]:

```
1 d[20]
```

Out[114]:

```
152
```

In [115]:

```
1 dir(dict)
```

Out[115]:

```
['__class__',
 '__contains__',
 '__delattr__',
 '__delitem__',
 '__dir__',
 '__doc__',
 '__eq__',
 '__format__',
 '__ge__',
 '__getattribute__',
 '__getitem__',
 '__gt__',
 '__hash__',
 '__init__',
 '__init_subclass__',
 '__iter__',
 '__le__',
 '__len__',
 '__lt__',
 '__ne__',
 '__new__',
 '__reduce__',
 '__reduce_ex__',
 '__repr__',
 '__setattr__',
 '__setitem__',
 '__sizeof__',
 '__str__',
 '__subclasshook__',
 'clear',
 'copy',
 'fromkeys',
 'get',
 'items',
 'keys',
 'pop',
 'popitem',
 'setdefault',
```

```
 'update',
 'values']
```

In [121]:

```
1 d
```

Out[121]:

```
{1: 13, 2: 13, 20: 152, 'college': 'Lendi'}
```

In [123]:

```
1 d.pop(2)
```

Out[123]:

```
13
```

In [124]:

```
1 d
```

Out[124]:

```
{1: 13, 20: 152, 'college': 'Lendi'}
```

In [125]:

```
1 d.popitem()
```

Out[125]:

```
('college', 'Lendi')
```

In [127]:

```
1 d.setdefault('name','vemu')
```

Out[127]:

```
'vemu'
```

In [128]:

```
1 d
```

Out[128]:

```
{1: 13, 20: 152, 'name': 'vemu'}
```

In [129]:

```
1 d.clear()
2
```

In [130]:

```
1 d
```

Out[130]:

```
{}
```

In [150]:

```
1 help(dict.fromkeys)
```

```
Help on built-in function fromkeys:

fromkeys(iterable, value=None, /) method of builtin
s.type instance
    Create a new dictionary with keys from iterable
and values set to value.
```

In [133]:

```
1 d[1]=13
```

In [134]:

```
1 d
```

Out[134]:

```
{1: 13}
```

In [136]:

```
1 d.setdefault(2,20)
```

Out[136]:

```
20
```

In [137]:

```
1 d
```

Out[137]:

```
{1: 13, 2: 20}
```

In [145]:

```
1 d.update({23:3})
```

In [146]:

```
1 d
```

Out[146]:

```
{1: 13, 2: 20, 23: 3}
```

In [147]:

```
1 d.values()
```

Out[147]:

```
dict_values([13, 20, 3])
```

In [149]:

```
1 d.fromkeys(1)
```

```
---------------------------------------------------------
----------------------
TypeError                                 Traceback
 (most recent call last)
<ipython-input-149-06ca9d97420c> in <module>
----> 1 d.fromkeys(1)

TypeError: 'int' object is not iterable
```

In [151]:

```
1 l=[1,2,3]
```

In [152]:

```
1 l1=[10,20,30]
```

In [154]:

```
1 d.fromkeys(l)
```

Out[154]:

```
{1: None, 2: None, 3: None}
```

In [155]:

```
1 d
```

Out[155]:

```
{1: 13, 2: 20, 23: 3}
```

In [158]:

```
1 d1=d.fromkeys(l)
```

In [159]:

```
1 d1
```

Out[159]:

```
{1: None, 2: None, 3: None}
```

In [162]:

```
1 name=['rfna','ram','sam']
2 phone=[8801241231,9848272564]
3 d2.fromkeys(name,phone)
```

Out[162]:

```
{'rfna': [8801241231, 9848272564],
 'ram': [8801241231, 9848272564],
 'sam': [8801241231, 9848272564]}
```

In [161]:

```
1 d2={}
```

In [163]:

```
1 d3={}
```

In [166]:

```
1 t=(1,'college',30.5)
2 val=(100,'Vemu',192.5)
3 d3.fromkeys(t,val)
```

Out[166]:

```
{1: (100, 'Vemu', 192.5),
 'college': (100, 'Vemu', 192.5),
 30.5: (100, 'Vemu', 192.5)}
```

In [167]:

```
1 d3.update({1:123})
```

In [168]:

```
1 d3
```

Out[168]:

```
{1: 123}
```

In [169]:

```
1 d3[1]=123
```

In [170]:

```
1 d3
```

Out[170]:

```
{1: 123}
```

Packages and Modules

```
Package - > college
    sub-Package -> years
        Modules -> branches

Package -> Folder -> VEMU
    Modules -> cse.py,ece.py,eee.py
        no of functions -> cse.py
            - stucnt()
            - stupas()
            - stufail()
```

In [48]:

```
from VEMU import cse as c
n = int(input())
c.createUser(n)
```

```
2
rajesh
987464
rajesh@gmail.com
somasekhar
9874654545
somu@gmail.com
Name:  rajesh
Phone:  987464
Mailid:  rajesh@gmail.com
Name:  somasekhar
Phone:  9874654545
Mailid:  somu@gmail.com
```

In [1]:

```
from VEMU import cse as cd
cd.Nat(5)
```

```
1 2 3 4 5
```

In [2]:

```
import math
print(math.pi)
```

```
3.141592653589793
```

In [3]:

```
import random as r
print(r.random())
```

```
0.11180845689064034
```

In [10]:

```
print(r.randint(1,50))
```

```
5
```

In [8]:

```
print(r.randrange(10,20))
```

```
10
```

In [15]:

```
print(print.__doc__)
```

```
print(value, ..., sep=' ', end='\n', file=sys.stdou
t, flush=False)

Prints the values to a stream, or to sys.stdout by d
efault.
Optional keyword arguments:
file:  a file-like object (stream); defaults to the
current sys.stdout.
sep:   string inserted between values, default a spa
ce.
end:   string appended after the last value, default
a newline.
flush: whether to forcibly flush the stream.
```

In [16]:

```
print(len.__doc__)
```

```
Return the number of items in a container.
```

In [1]:

```
from VEMU import cse as c
```

In [3]:

```
print(c.createUser.__doc__)
```

```
Creating User Details
```

Files:

```
-file can be created -> w,a,x
-values read -> r
-values are removed and existing content
will be added -> w
-values are not removed it can adds the content
for existing file -> a

fopen("path","mode")
fclose("filehandler")

with open("path","mode") as "filehandler":
    closing of a file is not necessary
```

In [ ]:

```

```