In [ ]:
```
s=input('enter a value')
```

In [ ]:
```

```

In [2]:
```
s="diwakar"
```

In [3]:
```
s[0]
```

Out[3]:
```
'd'
```

In [5]:
```
s[1]

```

Out[5]:
```
'i'
```

In [6]:
```
dir(str),
```

Out[6]:
```
(['__add__',
  '__class__',
  '__contains__',
  '__delattr__',
  '__dir__',
  '__doc__',
  '__eq__',
  '__format__',
  '__ge__',
  '__getattribute__',
  '__getitem__',
  '__getnewargs__',
  '__gt__',
  '__hash__',
  '__init__',
  '__init_subclass__',
  '__iter__',
  '__le__',
  '__len__',
  '__lt__',
  '__mod__',
  '__mul__',
  '__ne__',
  '__new__',
  '__reduce__',
  '__reduce_ex__',
  '__repr__',
  '__rmod__',
  '__rmul__',
  '__setattr__',
  '__sizeof__',
  '__str__',
  '__subclasshook__',
  'capitalize',
  'casefold',
  'center',
  'count',
  'encode',
  'endswith',
  'expandtabs',
  'find',
  'format',
  'format_map',
  'index',
  'isalnum',
  'isalpha',
  'isascii',
  'isdecimal',
  'isdigit',
  'isidentifier',
  'islower',
  'isnumeric',
  'isprintable',
  'isspace',
  'istitle',
```

```
 'isupper',
 'join',
 'ljust',
 'lower',
 'lstrip',
 'maketrans',
 'partition',
 'replace',
 'rfind',
 'rindex',
 'rjust',
 'rpartition',
 'rsplit',
 'rstrip',
 'split',
 'splitlines',
 'startswith',
 'strip',
 'swapcase',
 'title',
 'translate',
 'upper',
 'zfill'],)
```

In [7]:
```
print(dir(str),end='')
```

```
['__add__', '__class__', '__contains__', '__delattr__', '__dir__', '__doc__',
'__eq__', '__format__', '__ge__', '__getattribute__', '__getitem__', '__getnewa
rgs__', '__gt__', '__hash__', '__init__', '__init_subclass__', '__iter__', '__l
e__', '__len__', '__lt__', '__mod__', '__mul__', '__ne__', '__new__', '__reduce
__', '__reduce_ex__', '__repr__', '__rmod__', '__rmul__', '__setattr__', '__siz
eof__', '__str__', '__subclasshook__', 'capitalize', 'casefold', 'center', 'cou
nt', 'encode', 'endswith', 'expandtabs', 'find', 'format', 'format_map', 'inde
x', 'isalnum', 'isalpha', 'isascii', 'isdecimal', 'isdigit', 'isidentifier', 'i
slower', 'isnumeric', 'isprintable', 'isspace', 'istitle', 'isupper', 'join',
'ljust', 'lower', 'lstrip', 'maketrans', 'partition', 'replace', 'rfind', 'rind
ex', 'rjust', 'rpartition', 'rsplit', 'rstrip', 'split', 'splitlines', 'startsw
ith', 'strip', 'swapcase', 'title', 'translate', 'upper', 'zfill']
```

In [ ]:
```
```

In [8]:
```
s='abc1223'
s.isalpha
```

Out[8]:
```
<function str.isalpha()>
```

In [9]:
```
s.isdigit()
```

Out[9]:
```
False
```

In [10]:
```
s.isnumeric
```

Out[10]:
```
<function str.isnumeric()>
```

In [4]:
```
s= 'hello ece'
s.str,captalize( )
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
<ipython-input-4-111896fe9ae5> in <module>
      1 s= 'hello ece'
----> 2 s.str,captalize( )

AttributeError: 'str' object has no attribute 'str'
```

In [17]:
```
s1='hello world'
s1.casefold
```

Out[17]: <function str.casefold()>

In [19]:
```
s2='HELLO ECE'
s1.lower()
```

Out[19]: 'hello world'

In [20]:
```
s2.center(10)
```

Out[20]: 'HELLO ECE '

In [21]:
```
s2.count('e')
```

Out[21]: 0

In [22]:
```
s2.center(15)
```

Out[22]: '   HELLO ECE   '

In [30]:
```
S1='problem solving and programming python'
s1.count('p')
```

Out[30]: 0

In [13]:
```
s1[2]='a'
```

In [10]:
```
s1='apssdc'
s2='python'
s1.join(s2)
```

Out[10]: 'papssdcyapssdctapssdchapssdcoapssdcn'

In [11]:
```
# split method
s1.split('s')
```

Out[11]:
```
['ap', '', 'dc']
```

In [12]:
```
# split method
s1='apssdc'
s1=s1.split('s')
```

In [46]:
```
s1[0]
```

Out[46]:
```
'a'
```

In [49]:
```
s2='hello ece'
s2[0]
```

Out[49]:
```
'h'
```

In [50]:
```
s2=s2.split(' ')
s2
```

Out[50]:
```
['hello', 'ece']
```

In [51]:
```
s2[0]
```

Out[51]:
```
'hello'
```

In [ ]:
```
# in= 'python workshop'
# o/p = w. python
st=input('enter a value')
print(len(st))
st=st.split()
print(st)
print(st[1][0]+'.',st[0])
```

In [57]:
```
len(st)
```

Out[57]:
```
1
```

In [2]:
```
s='hello'
s[::-1]
```

Out[2]:
```
'olleh'
```

In [4]:
```
s='hello'
s[:1]
```

Out[4]:
```
'h'
```

In [7]:
```
s='s  stars students'
s.endswith('s')
```

Out[7]: True

In [15]:
```
#strip - to remove unwanted space
s1='hello world'
s1.strip()
```

Out[15]: 'hello world'

In [16]:
```
s1.title()
```

Out[16]: 'Hello World'

In [17]:
```
s1.swapcase()
```

Out[17]: 'HELLO WORLD'

In [19]:
```
s1='HELLo woRLD'
s1.swapcase()
```

Out[19]: 'hellO WOrld'

data structure in python

- lists
- tuples
- dicttionires
- sets

lists

- list is a collection of data of different data types
- list are mutable
- represented with [], comma seperates the values

In [20]:
```
li=[]
type(li)
```

Out[20]: list

In [25]:
```
li=[1,2,3,4,5,'a','abc']
li[0]
```

Out[25]: 1

In [26]:
```
len(li)
```

Out[26]:
```
7
```

In [27]:
```
li[::-1]
```

Out[27]:
```
['abc', 'a', 5, 4, 3, 2, 1]
```

In [33]:
```
lil=[1,2,3,4,5,]
print(max(lil))
print(min(lil))
print(sum(lil))
```

```
5
1
15
```

In [36]:
```
print(dir(list),end='')
```

```
['__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__', '__setat
tr__', '__setitem__', '__sizeof__', '__str__', '__subclasshook__', 'append', 'c
lear', 'copy', 'count', 'extend', 'index', 'insert', 'pop', 'remove', 'revers
e', 'sort']
```

In [45]:
```
12=['abc',1,4]
ll.append(12)
11
```

```
  File "<ipython-input-45-1738c1d4c4bf>", line 1
    12=['abc',1,4]
      ^
SyntaxError: can't assign to literal
```

In [46]:
```
11
```

Out[46]:
```
11
```

In [56]:
```
l2=[1,2,3,'a','b','c']
l1.append(5)
print(l1)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-56-340bc53ffa6e> in <module>
      1 l2=[1,2,3,'a','b','c']
----> 2 l1.append(5)
      3 print(l1)

NameError: name 'l1' is not defined
```

In [57]:
```
12
```

Out[57]:
```
12
```

In [58]:
```
l1=[1,2,3,'a','b','c']
l1.append(5)
print(l1)
```

```
[1, 2, 3, 'a', 'b', 'c', 5]
```

In [71]:
```
l1
```

Out[71]:
```
[1, 2, 3, 'a', 'b', 'c', 5, 5]
```

In [64]:
```
l1.count(6)
```

Out[64]:
```
0
```

In [66]:
```
l1.index(5)
```

Out[66]:
```
6
```

In [68]:
```
l2=[1,2,3,'a','b','c']
l1.append(5)
print(l1)
```

```
[1, 2, 3, 'a', 'b', 'c', 5, 5]
```

In [72]:
```
l1.count(1)
```

Out[72]:
```
1
```

In [73]:
```
s='apssdc'
s[0]
s=s.split('s')
print(s)
```

```
['ap', '', 'dc']
```

In [76]:
```
s='apssdc'
s[0]
#s[0]='h'
s=s.split('s')
print(s)
print(s[0])
s[1]='h'
print(s)
```

```
['ap', '', 'dc']
ap
['ap', 'h', 'dc']
```

In [77]:
```
l1[1]
```

Out[77]:
```
2
```

In [10]:
```
l=[1,9,2,0,3,89]
l.sort()
l
```

Out[10]:
```
[0, 1, 2, 3, 9, 89]
```

In [15]:
```
l=[1,6,7,7]
l.reverse()
l
```

Out[15]:
```
[7, 7, 6, 1]
```

In [16]:
```
l.sort(reverse=True)
l
```

Out[16]:
```
[7, 7, 6, 1]
```

In [18]:
```
l.clear()
l
```

Out[18]:
```
[]
```

In [ ]:
```

```