Assignment Instructions

Hello Innominion,

- **Try to attempt all the questions in every possible way.**
- **Some other topics are required to solve some questions. don't panic.**
- **Those questions can be answered after the topics are taught.**

- Join Mentoring Session for the Support/Doubts Resolving with Our Technical Mentors (2.00 PM - 6.00 PM Mon-Sat)

Happy Learning !!!

In [ ]:

Strings - Execrise ¶

In [5]:
```
text = """The University of Hawaii began using radio to send digital information
Friedhelm Hillebrand conceptualised SMS in 1984 while working for Deutsche Telekc
Hillebrand typed out random sentences and counted every letter, number, punctuati
Almost every time, the messages contained fewer than 160 characters, thus giving
limit one could type via text messaging. With Bernard Ghillebaert of France Téléc
a proposal for the GSM (Groupe Spécial Mobile) meeting in February 1985 in Oslo.
The first technical solution evolved in a GSM subgroup under the leadership of Fi
It was further developed under the leadership of Kevin Holley and Ian Harris (see
SMS forms an integral part of SS7 (Signalling System No. 7). Under SS7, it is a '
coded in the ITU-T "T.56" text format, that has a "sequence lead in" to determine
and may have special character codes that permits, for example, sending simple gr
This was part of ISDN (Integrated Services Digital Network) and since GSM is base
made its way to the mobile phone. Messages could be sent and received on ISDN phc
and these can send SMS to any GSM phone. The possibility of doing something is or
implementing it another, but systems existed from 1988 that sent SMS messages to
```

Question: How many characters in text

In [6]:
```
# CODE HERE
len(text)
```

Out[6]: 1507

Question: How many words are there in the "text"

In [7]:
```
# CODE HERE
word=text.split()
len(word)
```

Out[7]: 244

> Question: How many unique words in the "text"

In [8]:
```
# CODE
var=text.split()
var=set(var)
var=list(var)
len(var)
```

Out[8]: 174

> Question: Find Lexical diversity

lexical_diversity = (number of words)/(number of unique words)

In [9]:
```
lexical_diversity=len(word)/len(var)
lexical_diversity
```

Out[9]: 1.4022988505747127

> Question: Count how many "the" in text

In [10]:
```
# CODE HERE
```

In [11]:
```
text.count("the")+text.count("The")
```

Out[11]: 14

> Question: Count how many "a" in text

In [12]:
```
text.count("a")+text.count("A")
```

Out[12]: 92

> Question: Extract First 10 words in text

In [13]:
```
# CODE HERE
word=text.split()
x=word[0:10]
" ".join(x)
```

Out[13]:
```
'The University of Hawaii began using radio to send digital'
```

Question: Append " Innomatics Reseach Labs" after first 10 words in the text

In [14]:
```
# CODE HERE
word=text.split()
x=word[0:10]
" ".join(x)
x.append("Innomatics Research Labs ")
" ".join(x)
```

Out[14]:
```
'The University of Hawaii began using radio to send digital Innomatics Research
Labs '
```

Question: Extract First Fourteen (14) character in text

In [15]:
```
# CODE HERE
text[0:15]
```

Out[15]:
```
'The University '
```

Question: Extract first Fourteen (14) words in text

In [16]:
```
# CODE HERE
```

In [47]:
```
words=text.split()
x=words[0:14]
" ".join(x)
```

Out[47]:
```
'The University of Hawaii began using radio to send digital information as earl
y as'
```

Question: Extract First 10 words in text

- Convert every letter into ***upper*** case

- Convert every letter into ***lower*** case

In [18]:
```
# CODE HERE
words=text.split()
x=words[0:10]
" ".join(x).upper()
```

Out[18]: 'THE UNIVERSITY OF HAWAII BEGAN USING RADIO TO SEND DIGITAL'

In [19]:
```
# CODE HERE
words=text.split()
x=words[0:10]
" ".join(x).lower()
```

Out[19]: 'the university of hawaii began using radio to send digital'

> Question: Find the list of letter starting with

- u
- o

> hint - You need to use for loop for this

In [20]:
```
# CODE HERE
k=text.lower()
t=k.split()
startswith=[]
for y in t:
    if y.startswith("u"):
        startswith.append(y)
print(set(startswith))
```

```
{'university', 'under', 'using'}
```

In [ ]:

In [21]:
```
k=text.lower()
t=k.split()
startswith=[]
for y in t:
    if y.startswith("o"):
        startswith.append(y)
print(set(startswith))
```

```
{'out', 'oslo.', 'on', 'of', 'one'}
```

In [ ]:

> Question: Find the list of letter ending with

- e
- n

> hint - You need to use for loop for this

In [22]:
```
# CODE HERE
k=text.lower()
t=k.split()
endswith=[]
for y in t:
    if y.endswith("e"):
        endswith.append(y)
print(set(endswith))
```

```
{'deutsche', 'language', 'france', 'determine', '(see', 'made', 'the', '(group
e', 'have', 'message', 'since', '(compare', 'these', 'be', 'he', 'type', '"sequ
ence', 'while', 'mobile', 'simple', 'one'}
```

In [23]:
```
k=text.lower()
t=k.split()
endswith=[]
for y in t:
    if y.endswith("n"):
        endswith.append(y)
print(set(endswith))
```

```
{'solution', 'ian', 'isdn', 'information', 'kevin', 'began', 'than', 'on', 'ca
n', 'in', 'finn', 'an'}
```

> Question: Extract first 10 words of text and Capitalize first letter of each word

In [24]:
```
# CODE HERE
words=text.split()
x=words[0:10]
" ".join(x).title()
```

Out[24]: 'The University Of Hawaii Began Using Radio To Send Digital'

Question: Replace the word "University" with name "Innomatics" in text

In [25]:
```
# CODE HERE
word=text.split()
t=words[0: ]
" ".join(t).replace("University","Innomatics")
```

Out[25]:
```
'The Innomatics of Hawaii began using radio to send digital information as earl
y as 1971,using ALOHAnet. Friedhelm Hillebrand conceptualised SMS in 1984 while
working for Deutsche Telekom. Sitting at a typewriter at home, Hillebrand typed
out random sentences and counted every letter, number, punctuation, and space.
Almost every time, the messages contained fewer than 160 characters, thus givin
g the basis for the limit one could type via text messaging. With Bernard Ghill
ebaert of France Télécom, he developed a proposal for the GSM (Groupe Spécial M
obile) meeting in February 1985 in Oslo. The first technical solution evolved i
n a GSM subgroup under the leadership of Finn Trosby. It was further developed
under the leadership of Kevin Holley and Ian Harris (see Short Message Servic
e). SMS forms an integral part of SS7 (Signalling System No. 7). Under SS7, it
is a "state" with a 160 character data, coded in the ITU-T "T.56" text format,
that has a "sequence lead in" to determine different language codes, and may ha
ve special character codes that permits, for example, sending simple graphs as
text. This was part of ISDN (Integrated Services Digital Network) and since GSM
is based on this, made its way to the mobile phone. Messages could be sent and
received on ISDN phones, and these can send SMS to any GSM phone. The possibili
ty of doing something is one thing, implementing it another, but systems existe
d from 1988 that sent SMS messages to mobile phones (compare ND-NOTIS).'
```

Question: Convert the "text" into sentances and store those into one variable called "sentance"

In [26]:
```
# CODE HERE
sentance=text.split('.')
sentance
```

Out[26]:
```
['The University of Hawaii began using radio to send digital information as ear
ly as 1971,using ALOHAnet',
 ' \nFriedhelm Hillebrand conceptualised SMS in 1984 while working for Deutsche
Telekom',
 ' Sitting at a typewriter at home, \nHillebrand typed out random sentences and
counted every letter, number, punctuation, and space',
 ' \nAlmost every time, the messages contained fewer than 160 characters, thus
giving the basis for the \nlimit one could type via text messaging',
 ' With Bernard Ghillebaert of France Télécom, he developed \na proposal for th
e GSM (Groupe Spécial Mobile) meeting in February 1985 in Oslo',
 ' \nThe first technical solution evolved in a GSM subgroup under the leadershi
p of Finn Trosby',
 ' \nIt was further developed under the leadership of Kevin Holley and Ian Harr
is (see Short Message Service)',
 ' \nSMS forms an integral part of SS7 (Signalling System No',
 ' 7)',
 ' Under SS7, it is a "state" with a 160 character data, \ncoded in the ITU-T
"T',
 '56" text format, that has a "sequence lead in" to determine different languag
e codes, \nand may have special character codes that permits, for example, send
ing simple graphs as text',
 ' \nThis was part of ISDN (Integrated Services Digital Network) and since GSM
is based on this, \nmade its way to the mobile phone',
 ' Messages could be sent and received on ISDN phones, \nand these can send SMS
to any GSM phone',
 ' The possibility of doing something is one thing, \nimplementing it another,
but systems existed from 1988 that sent SMS messages to mobile phones (compare
ND-NOTIS)',
 '']
```

Question:

1.From the above sentance remove '\n'

In [27]:
```
sentance=text.split("\n")
sentance
```

Out[27]:
```
['The University of Hawaii began using radio to send digital information as ear
ly as 1971,using ALOHAnet. ',
 'Friedhelm Hillebrand conceptualised SMS in 1984 while working for Deutsche Te
lekom. Sitting at a typewriter at home, ',
 'Hillebrand typed out random sentences and counted every letter, number, punct
uation, and space. ',
 'Almost every time, the messages contained fewer than 160 characters, thus giv
ing the basis for the ',
 'limit one could type via text messaging. With Bernard Ghillebaert of France T
élécom, he developed ',
 'a proposal for the GSM (Groupe Spécial Mobile) meeting in February 1985 in Os
lo. ',
 'The first technical solution evolved in a GSM subgroup under the leadership o
f Finn Trosby. ',
 'It was further developed under the leadership of Kevin Holley and Ian Harris
(see Short Message Service). ',
 'SMS forms an integral part of SS7 (Signalling System No. 7). Under SS7, it is
a "state" with a 160 character data, ',
 'coded in the ITU-T "T.56" text format, that has a "sequence lead in" to deter
mine different language codes, ',
 'and may have special character codes that permits, for example, sending simpl
e graphs as text. ',
 'This was part of ISDN (Integrated Services Digital Network) and since GSM is
based on this, ',
 'made its way to the mobile phone. Messages could be sent and received on ISDN
phones, ',
 'and these can send SMS to any GSM phone. The possibility of doing something i
s one thing, ',
 'implementing it another, but systems existed from 1988 that sent SMS messages
to mobile phones (compare ND-NOTIS).']
```

2. From the above sentance print the first word from each sentance

In [32]:
```
sentance=text.split('\n')
for g in sentance:
    k=g.split(' ')
    print(k[0])
```

```
The
Friedhelm
Hillebrand
Almost
limit
a
The
It
SMS
coded
and
This
made
and
implementing
```

3. From the above sentace print even posioned sentances

In [40]:
```
sentance[::2]
```

Out[40]:
```
['The University of Hawaii began using radio to send digital information as ear
ly as 1971,using ALOHAnet. ',
 'Hillebrand typed out random sentences and counted every letter, number, punct
uation, and space. ',
 'limit one could type via text messaging. With Bernard Ghillebaert of France T
élécom, he developed ',
 'The first technical solution evolved in a GSM subgroup under the leadership o
f Finn Trosby. ',
 'SMS forms an integral part of SS7 (Signalling System No. 7). Under SS7, it is
a "state" with a 160 character data, ',
 'and may have special character codes that permits, for example, sending simpl
e graphs as text. ',
 'made its way to the mobile phone. Messages could be sent and received on ISDN
phones, ',
 'implementing it another, but systems existed from 1988 that sent SMS messages
to mobile phones (compare ND-NOTIS).']
```

`Question:` If the following string is given as input to the program:

- H1e2l3l4o5w6o7r8l9d

`Output:` Then, the output of the program should be:

- Helloworld

In [45]:
```
# CODE HERE
sentance="H1e2l3l4o5w6o7r8l9d"
alpha=[]
for x in sentance:
    if x.isalpha():
        alpha.append(x)
print(alpha)
"".join(alpha)
```

```
['H', 'e', 'l', 'l', 'o', 'w', 'o', 'r', 'l', 'd']
```

Out[45]:
```
'Helloworld'
```

Innomatics Research Labs (https:/innomatics.in/)

www.innomatics.in (https:/innomatics.in/)