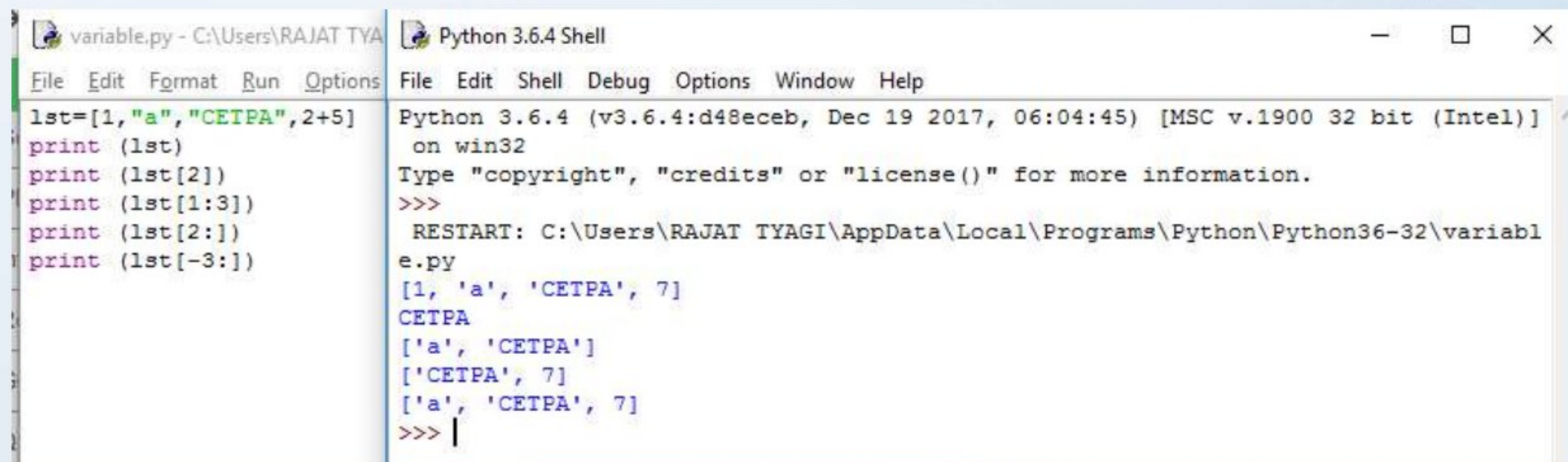


Python Lists

Lists are one of the most powerful tools in python. They are just like the arrays declared in other languages. But the most powerful thing is that list need not be always homogenous. A single list can contain strings, integers, as well as objects. Lists can also be used for implementing stacks and queues.



The screenshot displays a Python IDE with two windows. The left window, titled 'variable.py - C:\Users\RAJAT TYA', contains the following code:

```
lst=[1,"a","CETPA",2+5]
print (lst)
print (lst[2])
print (lst[1:3])
print (lst[2:])
print (lst[-3:])
```

The right window, titled 'Python 3.6.4 Shell', shows the execution output:

```
Python 3.6.4 (v3.6.4:d48eceb, Dec 19 2017, 06:04:45) [MSC v.1900 32 bit (Intel)]
on win32
Type "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\RAJAT TYAGI\AppData\Local\Programs\Python\Python36-32\variabl
e.py
[1, 'a', 'CETPA', 7]
CETPA
['a', 'CETPA']
['CETPA', 7]
['a', 'CETPA', 7]
>>> |
```


A stack of books with a blue background. The books are stacked on the left side of the image, with their spines facing right. The pages are a light brown color, and the spines are a dark blue color. The background is a solid light blue color.

List

Lists are one of the most powerful tools in python. They are just like the arrays declared in other languages. But the most powerful thing is that list need not be always homogenous.

Manipulation and Operations

```
*list_manipulation_and_Operation.py - C:\Users\RAJA
File Edit Format Run Options Window Help
x=[34,25,"abc",True];
# Printing
print ( x)

# Indexing
print ( x[0])

# Slicing
print ( x[0::2])

# Reverse Slicing
print ( x[-1::-2])

# Concatenation
a,b=[11,5,7],[3,5,1]
print ( a+b)

# Repeatation
print ( a*3)

# Membership
if 'abc' in x:
    print ( True)

*list_manipulation_and_Operation.py - C:\Users\RAJAT
File Edit Format Run Options Window Help
# Add new value
x.append ( 10)
print ( x)

# Add multiple values
x.extend ( [51,23,19,25])
print ( x)

# Add value on a specific index
x.insert ( 1,"Rajat")
print ( x)

# Update a value
x[1]="Ankit"
print ( x)

# Remove a value from list
x.remove ( 25)
print ( x)

# Remove value using index
del x[1],x[4]
print ( x)

File Edit Format Run Options Window Help
# Remove value using index slicing with step
lst=[12,'a',True,21,15.24,5e-2,'\u0915',0x12,0o12,0b110]
print ( lst)
del lst[0::+2]
print ( lst)

# Clear a list
lst.clear ()
print ( lst)

# Calculate length of list
print ( len ( x) )

# Maximum digit in list
print ( max ( x) )

# Minimum number in list
print ( min ( x) )

# Sum of digits in a list
print ( sum ( x) )

# Sorting a list
print ( sorted ( x) )
```


Program to get the largest number from a list.

<pre>List_find_max_num.py - D:/Documents/Python/List_find_max_num.py (3.6.4) File Edit Format Run Options Window Help # program to get the largest number from a list. lst=[5,1,6,-12,8] max = lst[0] for a in lst: if a > max: max = a print (max)</pre>	<pre>Python 3.6.4 Shell File Edit Shell Debug Options Window Python 3.6.4 (v3.6.4:d48ec Type "copyright", "credits" or >>> ===== RESTART: 8 >>></pre>
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Program to count the number of strings where the string length is 2 or more and the first and last character are same from a given list of strings.

<pre>List_count_num_of_string.py - D:/Documents/Python/List_count_num_of_string.py (3.6.4) File Edit Format Run Options Window Help # program to count the number of strings where the s #and the first and last character are same from a give lst=["121",525,"abc","dad","SAS"] ctr = 0 for str1 in lst: if type (str1) ==int: pass else: if len (str1) > 1 and str1[0] == str1[-1]: ctr += 1 print (ctr)</pre>	<pre>Python 3.6.4 Shell File Edit Shell Debug Options Window Help Python 3.6.4 (v3.6.4:d48eceb, Dec 19 2 Type "copyright", "credits" or "license () >>> ===== RESTART: D:/Documents/F 3 >>></pre>
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