**EX:11c REMOTE PROCEDURE CALL FOR LIST OPERATIONS- XMLRPC**

**DATE:02.10.24**

**Aim:**

To Implement an XML RPC code for the following functions,

a. No of items in a list

b. Smallest element in a list

c. Largest element in the list

d. Converting a list to a set.

**Algorithm:**

**Server Side**

1. Import SimpleXMLRPCServer.
2. Define Functions: Implement list_length, list_maximum, list_minimum, list_to_set, and list_concate.
3. Set Up Server on localhost:8000 and register functions.
4. Start Server using serve_forever().

**Client Side**

1. Import ServerProxy.
2. Connect to Server at http://localhost:8000/.
3. Get User Input: Prompt for lists a and b.
4. Call Server Functions: Execute list operations and display results.
5. Exit if user selects the stop option.

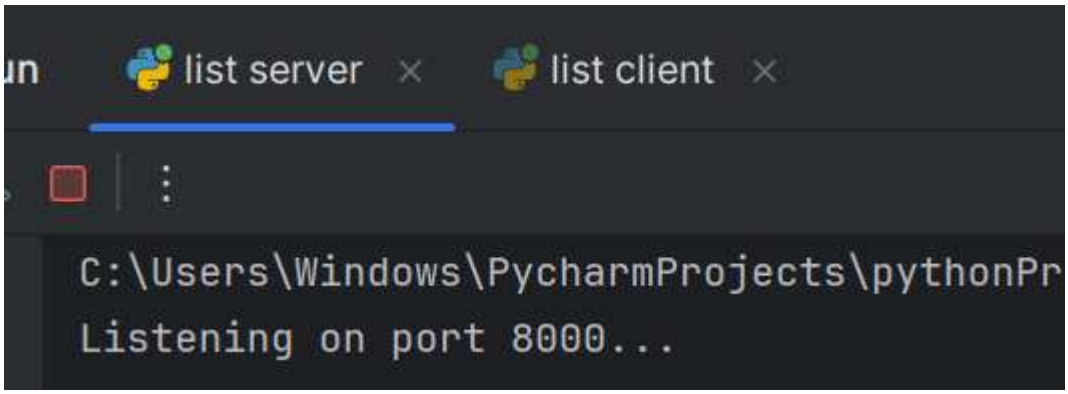
**Program:**

**Server.py**

```
from xmlrpc.server import SimpleXMLRPCServer
def list_length(a):
 return len(a)
```

```
def list_maximum(a):
 return max(a)
def list_minimum(a):
 return min(a)
def list_to_set(a):
 f=list(set(a))
 return f
def list_concate(a,b):
 return a+b
server = SimpleXMLRPCServer(("localhost", 8000))
print("Listening on port 8000...")
server.register_function(list_length,"list_length")
server.register_function(list_maximum, "list_maximum")
server.register_function(list_minimum, "list_minimum")
server.register_function(list_to_set, "list_to_set")
server.register_function(list_concate, "list_concate")
server.serve_forever()
```

**Output:**




**Client.py**

```
import xmlrpc.client
proxy= xmlrpc.client.ServerProxy('http://localhost:8000/')
while True:
 print("PRESS 1-->START || 2--> STOP ")
 c=int(input("ENTER YOUR CHOICE"))
```

```
a=[]
b=[]
if c==1:
 print("ENTER THE ELEMENTS TO ADD FIRST LIST")
 print("PRESS -1 TO EXIT THIS LIST")
 while True:
  d=int(input("--->"))
  if d==-1:
    break
  a.append(d)
 print("ENTER THE ELEMENTS TO ADD SECOND LIST")
 print("PRESS -2 TO EXIT THIS LIST")
 while True:
  e=int(input("--->"))
  if e==-2:
   break
  b.append(e)
if c == 2:
    break
print(a)
print(b)
print("list_length", proxy.list_length(a))
print("list_maximum", proxy.list_maximum(a))
print("list_minimum", proxy.list_minimum(a))
print("list_to_set", proxy.list_to_set(a))
print("list_concate", proxy.list_concate(a, b))
```

**Output:**

```
C:\Users\Windows\PycharmProjects\pythonProje
PRESS 1-->START || 2--> STOP
ENTER YOUR CHOICE1
ENTER THE ELEMENTS TO ADD FIRST LIST
PRESS -1 TO EXIT THIS LIST
--->3
--->5
--->7
--->-1
ENTER THE ELEMENTS TO ADD SECOND LIST
PRESS -2 TO EXIT THIS LIST
--->4
--->8
--->6
--->-2
[3, 5, 7]
[4, 8, 6]
list_length 3
list_maximum 7
list_minimum 3
list_to_set [3, 5, 7]
list_concate [3, 5, 7, 4, 8, 6]
PRESS 1-->START || 2--> STOP
ENTER YOUR CHOICE2

Process finished with exit code 0
```

**Result:**

Procedure call for list operations-XMLRPC is remoted.