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REMOTE PROCEDURE CALL FOR LIST OPERATIONS-XMLRPC

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.

Code:

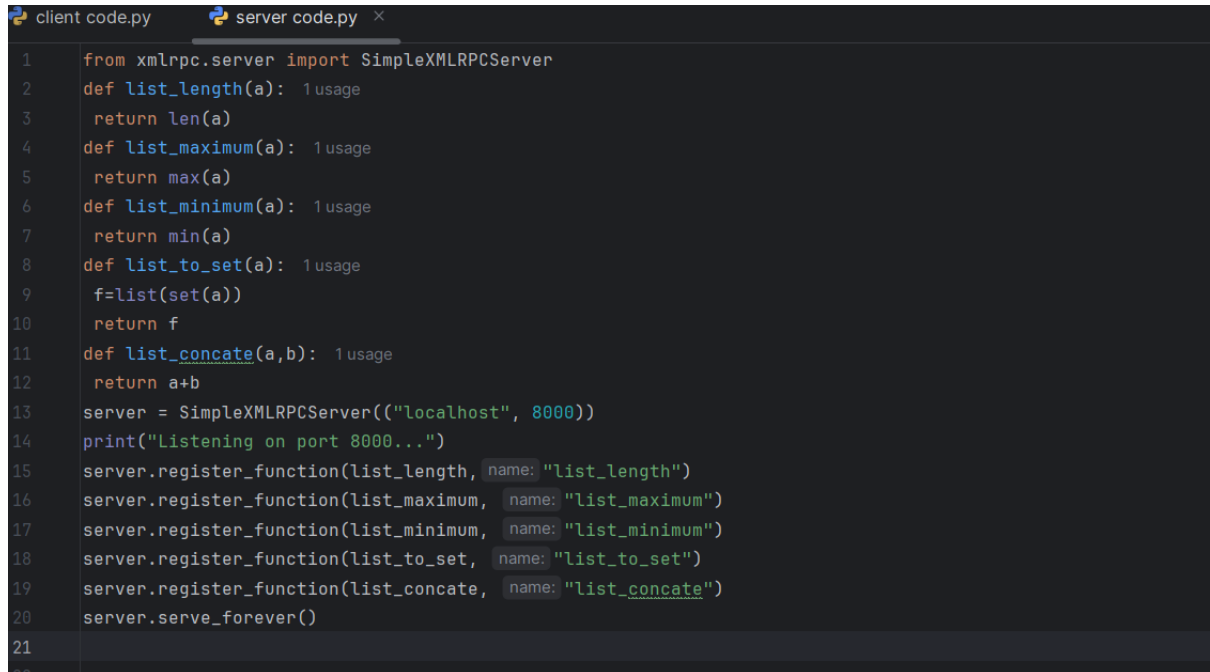
Server code:

```
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_concat, "list_concat")
server.serve_forever()

```



The screenshot shows a code editor with two tabs: 'client code.py' and 'server code.py'. The 'server code.py' tab is active, displaying the following Python code:

```

1  from xmlrpc.server import SimpleXMLRPCServer
2  def list_length(a): 1 usage
3      return len(a)
4  def list_maximum(a): 1 usage
5      return max(a)
6  def list_minimum(a): 1 usage
7      return min(a)
8  def list_to_set(a): 1 usage
9      f=list(set(a))
10     return f
11  def list_concat(a,b): 1 usage
12     return a+b
13  server = SimpleXMLRPCServer(("localhost", 8000))
14  print("Listening on port 8000...")
15  server.register_function(list_length, name="list_length")
16  server.register_function(list_maximum, name="list_maximum")
17  server.register_function(list_minimum, name="list_minimum")
18  server.register_function(list_to_set, name="list_to_set")
19  server.register_function(list_concat, name="list_concat")
20  server.serve_forever()
21

```

Client code:

```

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))
```

```

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))

```

ect >  client code.py

Output:

For server:

```

Run  XML RPC PROGRAM- SERVER SIDE  XML RPC PROGRAM- CLIENT SIDE
C:\Users\Sivarangini\PycharmProjects\python\.venv\Scripts\python.exe "C:\Users\Sivarangini\PycharmProjects\python\XML RPC PROGRAM- SERVER SIDE.py"
Listening on port 8000...

```

For client:

```
PRESS 1-->START || 2--> STOP
ENTER YOUR CHOICE1
ENTER THE ELEMENTS TO ADD FIRST LIST
PRESS -1 TO EXIT THIS LIST
--->5
--->10
--->15
--->20
--->25
--->-1
ENTER THE ELEMENTS TO ADD SECOND LIST
PRESS -2 TO EXIT THIS LIST
--->25
--->30
--->35
--->-1
--->-2
[5, 10, 15, 20, 25]
[25, 30, 35, -1]
list_length 5
list_maximum 25
list_minimum 5
list_to_set [5, 10, 15, 20, 25]
list_concat [5, 10, 15, 20, 25, 25, 30, 35, -1]
PRESS 1-->START || 2--> STOP
ENTER YOUR CHOICE|
ject > client code.py
```

Result:

A list is created and list operations are performed using XMLRPC.

