

**Ex No. 05**

## **Calculator Using XMLRPC**

**Date:** 01-09-2025

### **Aim:**

To develop a client server application that perform basic arithmetic operation (addition, subtraction, multiplication and division) using XML-RPC protocol, demonstration remote procedure calls overall network.

### **Algorithm:**

1. Start the server on a specific ip or port
2. Define function (add, Sub, Mul, Div)
3. Register all function with the server using their names.
4. Start listening for incoming client requests.
5. ASK the user to enter (add, Sub, Mul, Div).
6. Choose an operation (add, Sub, Mul, Div)
7. Receive the result from the server.

### **Program:**

#### [Server.py](#)

```
from xmlrpc.server import SimpleXMLRPCServer
```

```
def add(a, b):
```

```
    return a + b
```

```
def sub(a, b):
```

```
    return a - b
```

```
def mul(a, b):
```

```
    return a * b
```

```
def div(a, b):
```

```
    if b == 0:
```

```
        return "Error: Division by zero"
```

```
    return a / b
```

```
def mod(a, b):
```

```
    if b == 0:
```

```
        return "Error: Modulus by zero"
```

```
    return a % b
```

```
server = SimpleXMLRPCServer(("localhost", 8000))
```

```
print("Listening on port 8000...")
```

```
server.register_function(add, "add")
```

```
server.register_function(sub, "sub")
```

```
server.register_function(mul, "mul")
```

```
server.register_function(div, "div")
```

```
server.register_function(mod, "mod")
```

```
server.serve_forever()
```

```
*****
```

### Client.py

```
import xmlrpc.client
```

```
proxy = xmlrpc.client.ServerProxy('http://localhost:8000')
```

```
count = int(input("Enter how many calculations you want to do: "))
```

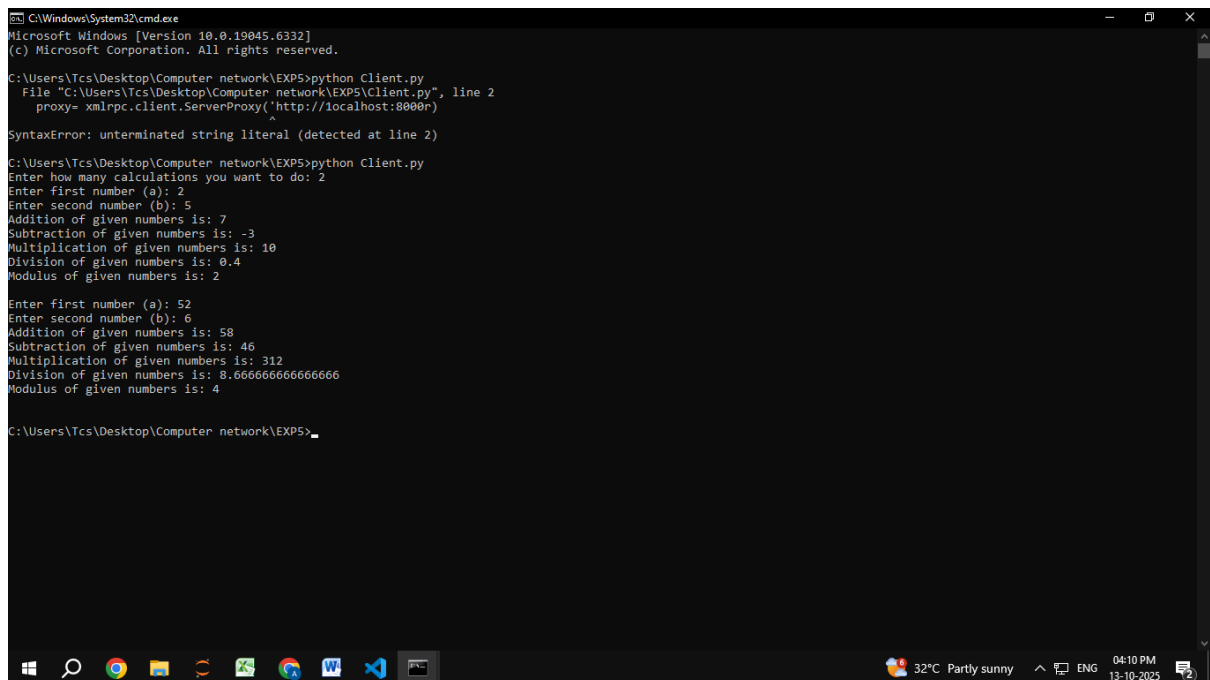
```
for i in range(count):
```

```
    a = int(input("Enter first number (a): "))
```

```
    b = int(input("Enter second number (b): "))
```

```
print("Addition of given numbers is:", proxy.add(a, b))  
print("Subtraction of given numbers is:", proxy.sub(a, b))  
print("Multiplication of given numbers is:", proxy.mul(a, b))  
print("Division of given numbers is:", proxy.div(a, b))  
print("Modulus of given numbers is:", proxy.mod(a, b))  
print() # Blank line for readability
```

## Output:



```
C:\Windows\System32\cmd.exe  
Microsoft Windows [Version 10.0.19045.6332]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\Tcs\Desktop\Computer network\EXP5>python client.py  
File "C:\Users\Tcs\Desktop\Computer network\EXP5\client.py", line 2  
    proxy= xmlrpc.client.ServerProxy('http://localhost:8000r')  
                                   ^  
SyntaxError: unterminated string literal (detected at line 2)  
  
C:\Users\Tcs\Desktop\Computer network\EXP5>python Client.py  
Enter how many calculations you want to do: 2  
Enter first number (a): 2  
Enter second number (b): 5  
Addition of given numbers is: 7  
Subtraction of given numbers is: -3  
Multiplication of given numbers is: 10  
Division of given numbers is: 0.4  
Modulus of given numbers is: 2  
  
Enter first number (a): 52  
Enter second number (b): 6  
Addition of given numbers is: 58  
Subtraction of given numbers is: 46  
Multiplication of given numbers is: 312  
Division of given numbers is: 8.6666666666666666  
Modulus of given numbers is: 4  
  
C:\Users\Tcs\Desktop\Computer network\EXP5>
```

## Result:

Thus, the communication between an XML-RPC client and server was successfully implemented and demonstrated using Python.