

EXPT: 5 DEVELOP A SIMPLE CALCULATOR USING XML-RPC

Aim:

Create a basic XML-RPC server that offers calculator operations and a client program that remotely calls these functions.

Algorithm:

1. Set up an XML-RPC server and register the calculator functions on it.
2. Run the server on localhost using a specific port number.
3. The client connects to the server URL and sends function calls with input values.
4. The server processes the request, returns the output, and the client displays the result.

Code:

Server:

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

```
import xmlrpc.client
proxy=xmlrpc.client.ServerProxy("http://localhost:8000/")
for i in range(5):
    a=int(input("Enter a number:"))
    b=int(input("Enter b number:"))
```

```
print("addition of given number is %d "%(proxy.add(a,b)))
print("sub of given number is %d "%(proxy.sub(a,b)))
print("multiplication of given number is %d "%(proxy.mul(a,b)))
print("division of given number is %d "%(proxy.div(a,b)))
print("mod of given number is %d "%(proxy.mod(a,b)))
```

Output:

Server:

```
PS H:\bala> python .\server.py
Listening on port 8000...
127.0.0.1 - - [17/Nov/2025 09:23:08] "POST / HTTP/1.1" 200 -
127.0.0.1 - - [17/Nov/2025 09:23:10] "POST / HTTP/1.1" 200 -
127.0.0.1 - - [17/Nov/2025 09:23:12] "POST / HTTP/1.1" 200 -
127.0.0.1 - - [17/Nov/2025 09:23:14] "POST / HTTP/1.1" 200 -
127.0.0.1 - - [17/Nov/2025 09:23:16] "POST / HTTP/1.1" 200 -
```

Client:

```
PS H:\bala> python .\client.py
Enter a number:14
Enter b number:18
addition of given number is 32
sub of given number is -4
multiplication of given number is 252
division of given number is 0
mod of given number is 14
```

Result:

The XML-RPC calculator server worked successfully. The client was able to call all the arithmetic functions remotely, and the server returned correct results for addition, subtraction, multiplication, division, and modulo operations.