

Ex No : 11 B**Date :7/11/2024****Develop a simple calculator using XMLRPC****AIM : Develop a simple calculator using XMLRPC****XML RPC PROGRAM- SERVER SIDE:**

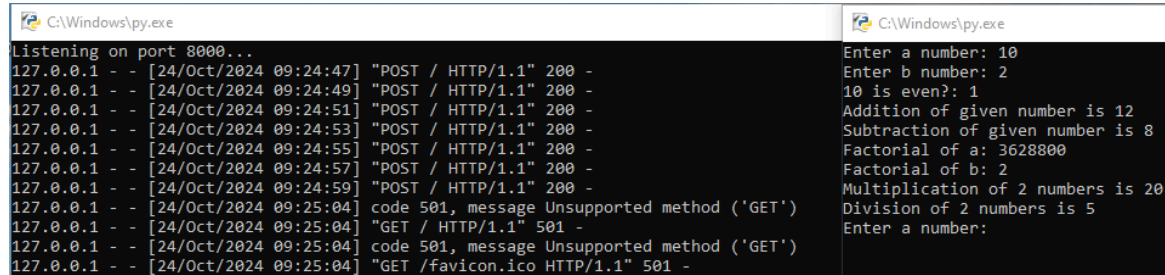
```
from xmlrpc.server import SimpleXMLRPCServer
# Define a function
def is_even(n):
    return n % 2 == 0
def add(a,b):
    return a+b
def sub(a,b):
    return a-b
def factorial(n):
    factorial=1
    for i in range(1,n+1):
        factorial = factorial*i
    return factorial
def multiply(x, y):
    return x * y
def divide(x, y):
    return x // y
# Create server
server = SimpleXMLRPCServer(("localhost", 8000))
print("Listening on port 8000...")
# Register a function under a different name
server.register_function(is_even, "is_even")
server.register_function(add, "add")
server.register_function(sub, "sub")
server.register_function(factorial, "factorial")
#server.register_function(factorial, "factorial")
server.register_function(multiply, 'multiply')
server.register_function(divide, 'divide')
# Run the server's main loop
server.serve_forever()
```

XML RPC PROGRAM- CLIENT SIDE:

```
import xmlrpc.client
```

```
proxy= xmlrpc.client.ServerProxy('http://localhost:8000/') # local server for i in range(5):  
    a=int(input("Enter a number:"))  
    b=int(input("Enter b number:"))  
    print("%d is even?: %d" % (a, (proxy.is_even(a)))) #access XML-RPC server through proxy  
    print("addition of given number is %d" %((proxy.add(a,b)))) print("sub of given number is %d"  
"%((proxy.sub(a,b)))) print("factorial: %d" %((proxy.factorial(a))))  
    print("factorial: %d" %((proxy.factorial(b))))  
    print("Multiplication of 2 numbers is %d" %((proxy.multiply(a,b))) print("Division  
of 2 numbers is %d" %((proxy.divide(a,b)))
```

Output



The image shows two side-by-side screenshots of a Python terminal window. The left window shows the server's output, and the right window shows the client's output.

Left Window (Server Output):

```
C:\Windows\py.exe  
Listening on port 8000...  
127.0.0.1 - - [24/Oct/2024 09:24:47] "POST / HTTP/1.1" 200 -  
127.0.0.1 - - [24/Oct/2024 09:24:49] "POST / HTTP/1.1" 200 -  
127.0.0.1 - - [24/Oct/2024 09:24:51] "POST / HTTP/1.1" 200 -  
127.0.0.1 - - [24/Oct/2024 09:24:53] "POST / HTTP/1.1" 200 -  
127.0.0.1 - - [24/Oct/2024 09:24:55] "POST / HTTP/1.1" 200 -  
127.0.0.1 - - [24/Oct/2024 09:24:57] "POST / HTTP/1.1" 200 -  
127.0.0.1 - - [24/Oct/2024 09:24:59] "POST / HTTP/1.1" 200 -  
127.0.0.1 - - [24/Oct/2024 09:25:04] code 501, message Unsupported method ('GET')  
127.0.0.1 - - [24/Oct/2024 09:25:04] "GET / HTTP/1.1" 501 -  
127.0.0.1 - - [24/Oct/2024 09:25:04] code 501, message Unsupported method ('GET')  
127.0.0.1 - - [24/Oct/2024 09:25:04] "GET /favicon.ico HTTP/1.1" 501 -
```

Right Window (Client Output):

```
C:\Windows\py.exe  
Enter a number: 10  
Enter b number: 2  
10 is even?: 1  
Addition of given number is 12  
Subtraction of given number is 8  
Factorial of a: 3628800  
Factorial of b: 2  
Multiplication of 2 numbers is 20  
Division of 2 numbers is 5  
Enter a number:
```