**Ex. No:11B Date:15/10/2024**

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**Develop a simple calculator using XMLRPC Aim:**

To develop a simple calculator using XMLRPC with basic arithmetic operations.

**Algorithm:**

**Server.py:**

1. Import XMLRPCServer package
2. Define functions for addition, subtraction, multiplication, division and modulus
3. Initialize simple XMLRPCServer with IP address (or localhost) and port number
4. Register the functions add, sub, mul, div and mod with the server
5. Handle the request
6. Close the connection

**Client.py**

1. Import XMLRPC Client package
2. Define functions for addition, subtraction, multiplication, division and modulus
3. Initialize simple XMLRPC Client with Server IP address (or localhost) and port number
4. Get two numbers a and b for arithmetic operations
5. Call add() function and print the result
6. Call sub() function and print the result
7. Call mul() function and print the result
8. Call div() function and print the result
9. Call mod() function and print the result
10. Close the connection

**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()

**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**

Enter a number: 6

Enter b number: 3

6 is even? :1

Addition of given numbers:9

Subtraction of given numbers:3

Factorial of 6:720

Factorial of 3:6

Multiplication of given numbers:18

Division of given numbers:2

**Result:**

Thus,the simple calculator with arithmetic operations using XMLRPC was developed.