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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:

```python
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:

```python
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.