EX.NO:6

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DEVELOP A SIMPLE CALCULATOR USING XML-RPC

INTRO TO XML-RPC:

XML-RPC (Extensible Markup Language - Remote Procedure Call) is a simple protocol that allows a program running on one computer to execute functions on another computer (server) over a network.

AIM:

To develop a simple calculator application using XML-RPC in Python where the server performs arithmetic operations based on inputs sent from the client.

ALGORITHM:

SERVER:

1. Import simple XML-RPC (server from xmlrpc.server).
2. Define arithmetic functions (add, sub, mul, div).
3. Create an XML-RPC server object with host and port (e.g., localhost:8000).
4. Register the functions with the server.
5. Start the server.

CLIENT:

1. Import xmlrpc.client.
2. Create a ServerProxy object to connect to the server.

3. Ask the user for the operation and input values.
4. Call the appropriate function (add, sub, mul, div) through the proxy.
5. Display the result received from the server.

SERVER PROGRAM:

```
from xmlrpc.server import SimpleXMLRPCServer

# Define arithmetic functions
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

# Create server object
server = SimpleXMLRPCServer(("localhost", 8000))
print("Server is running on port 8000...")
```

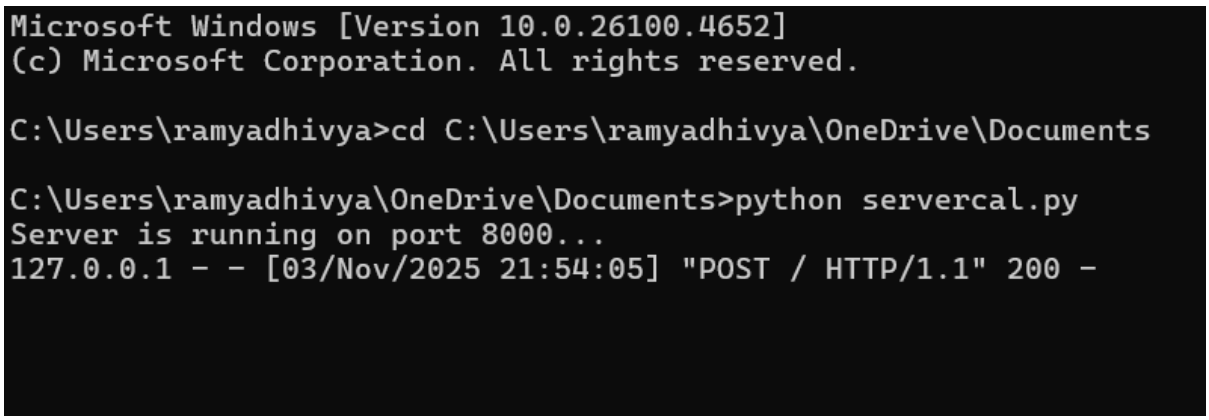
```
# Register functions
server.register_function(add, "add")
server.register_function(sub, "sub")
server.register_function(mul, "mul")
server.register_function(div, "div")

# Start the server
server.serve_forever()
```

CLIENT PROGRAM:

```
import xmlrpc.client

# Connect to the server
proxy = xmlrpc.client.ServerProxy("http://localhost:8000/")

# Ask user for operation and inputs
print("Simple Calculator - Operations: add, sub, mul, div")
operation = input("Enter operation: ").strip()
a = float(input("Enter first number: "))
b = float(input("Enter second number: "))

# Call appropriate function
if operation == "add":
    result = proxy.add(a, b)
```

```
elif operation == "sub":
    result = proxy.sub(a, b)
elif operation == "mul":
    result = proxy.mul(a, b)
elif operation == "div":
    result = proxy.div(a, b)
else:
    result = "Invalid operation"

# Display result
print("Result:", result)
```

SERVER:



CLIENT:

```
PS C:\Users\ramyadhivya> cd C:\Users\ramyadhivya\OneDrive\Documents
PS C:\Users\ramyadhivya\OneDrive\Documents> python clientcal.py
Simple Calculator - Operations: add, sub, mul, div
Enter operation: add
Enter first number: 7
Enter second number: 9
Result: 16.0
PS C:\Users\ramyadhivya\OneDrive\Documents>
```

RESULT:

A simple calculator using XML-RPC in python is successfully developed and performed arithmetic operation.