Program 5

Spyne (SOAP library) is not compatible with Python 3.12+.
If we use Python 3.12, we get errors like:

ModuleNotFoundError: spyne.util.six.moves

So we install Python 3.11, which is stable and fully supported by Spyne.

✅ Reason: To ensure SOAP service runs without library errors.

Install Python 3.11

1. Download Python 3.11 from official website
2. Install it
3. Tick ✓ **Add Python to PATH**

Verify installation:

py -3.11 --version

STEP 1: Create Project Folder

1. Create a new folder anywhere on your system
   Example:
2. HelloSOAPService
3. Open **VS Code**
4. Click **File → Open Folder → Select HelloSOAPService**

STEP 2: Create Virtual Environment

Open **VS Code Terminal**
(Menu → Terminal → New Terminal)

Type:

python -m venv venv

This creates a virtual environment folder named **venv**

STEP 3: Activate Virtual Environment

▶ **On Windows:**

venv\Scripts\activate

After activation, you will see:

(venv) C:\HelloSOAPService>

STEP 4: Install Required Libraries

- pip install spyne==2.14.0
- pip install lxml
- pip install six

STEP 5: Create Python SOAP Server File

1. In VS Code → Click **New File**
2. Name it:

   hello_service.py
3. Paste this code:

```
from spyne import Application, rpc, ServiceBase, Unicode
from spyne.protocol.soap import Soap11
from spyne.server.wsgi import WsgiApplication
from wsgiref.simple_server import make_server


class HelloService(ServiceBase):


    @rpc(Unicode, _returns=Unicode)
    def SayHello(ctx, name):
        return f"Hello, {name}!"


application = Application(
    [HelloService],
    tns='http://example.com/helloservice',
    in_protocol=Soap11(),
    out_protocol=Soap11()
```

)

wsgi_app = WsgiApplication(application)

if __name__ == '__main__':

print("SOAP Service Started...")

print("Open WSDL at: http://localhost:8000/?wsdl")

server = make_server('0.0.0.0', 8000, wsgi_app)

server.serve_forever()

Save the file 💾

STEP 6: Run the SOAP Service

1.In the terminal (inside project folder) run:

python hello_service.py

2.You should see:

SOAP Service Started...

Open WSDL at: http://localhost:8000/?wsdl

3.Your SOAP server is now running!

STEP 7: Check WSDL in Browser

1.Open browser and go to:

http://localhost:8000/?wsdl

2.You should see an XML file — this is your **WSDL description**.

This confirms the service is running correctly.

STEP 8: Open SoapUI to Test Service

1. Open **SoapUI**
2. Click **File → New SOAP Project**
3. Fill the form:

Field	Value
Project Name	HelloServiceProject
Initial WSDL	http://localhost:8000/?wsdl

Click **OK**

STEP 9: Send Request from SoapUI

1. Expand project → Expand **SayHello**
2. Double click **Request 1**

Replace request body with:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
                  xmlns:tns="http://example.com/helloservice">
  <soapenv:Header/>
  <soapenv:Body>
    <tns:SayHello>
      <tns:name>Sinchana</tns:name>
    </tns:SayHello>
  </soapenv:Body>
</soapenv:Envelope>
```

3. Click the green ▶ **Submit** button

STEP 10: See the Response

You will get:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Body>
    <tns:SayHelloResponse xmlns:tns="http://example.com/helloservice">
      <tns:greeting>Hello, Sinchana!</tns:greeting>
    </tns:SayHelloResponse>
  </soapenv:Body>
```

</soapenv:Envelope>

🎉 SUCCESS! Your SOAP Web Service is working.