

## **Practical -7**

**Aim** : Create a calculator web service using netbeans

**New Web Service**

**Steps**

1. Choose File Type
2. **Name and Location**

**Name and Location**

Web Service Name:

Project:

Location:

Package:

☒ Create Web Service from Scratch

☐ Create Web Service from Existing Session Bean

Enterprise Bean:

☐ Implement Web Service as Stateless Session Bean

< Back   Next >   **Finish**   Cancel   Help

The screenshot shows the 'Add Operation...' dialog box. The 'Name' field is set to 'addition' and the 'Return Type' is 'int'. The 'Parameters' tab is active, showing a table with two parameters: 'val1' and 'val2', both of type 'int'. The 'Final' column has checkboxes, with 'val2' selected. The 'Add' button is highlighted.

Name	Type	Final
val1	int	<input type="checkbox"/>
val2	int	<input checked="" type="checkbox"/>

The screenshot shows the 'Add Operation...' dialog box. The 'Name' field is set to 'subtraction' and the 'Return Type' is 'int'. The 'Parameters' tab is active, showing a table with two parameters: 'val1' and 'val2', both of type 'int'. The 'Final' column has checkboxes, with 'val2' selected. The 'Add' button is highlighted.

Name	Type	Final
val1	int	<input type="checkbox"/>
val2	int	<input checked="" type="checkbox"/>

## Calculator Web Services

```
package Calculator;  
import javax.jws.WebService;
```

```
import javax.jws.WebMethod;
import javax.jws.WebParam;
import javax.ejb.Stateless;
@WebService(serviceName = "Calculator")
@Stateless()
public class Calculator {
    /**
     * This is a sample web service operation
     */
    /**@WebMethod(operationName = "hello")
    public String hello(@WebParam(name = "name") String txt) {
return "Hello " + txt + " !";

    }*/
    @WebMethod(operationName = "ADDITION")
    public int ADDITION(@WebParam(name = "Value1") int Value1, @WebParam(name =
"Value2") int Value2) {
//TODO write your implementation code here:
return (Value1 + Value2);
    }
    /**
     * Web service operation
     */
    @WebMethod(operationName = "SUBTRACTION")
    public int SUBTRACTION(@WebParam(name = "Value1") int Value1,
@WebParam(name = "Value2") int Value2) {
//TODO write your implementation code here:
return (Value1 - Value2);
    }
    /**
     * Web service operation
     */
    @WebMethod(operationName = "MULTIPLICATION")
    public int MULTIPLICATION(@WebParam(name = "Value1") int Value1,
@WebParam(name = "Value2") int Value2) {
//TODO write your implementation code here:
return (Value1 * Value2);
    }

    /**
```

\* Web service operation

\*/

@WebMethod(operationName = "DIVISION")

public int DIVISION(@WebParam(name = "Value1") int Value1, @WebParam(name = "Value2") int Value2) {

//TODO write your implementation code here:

return (Value1 / Value2);

}

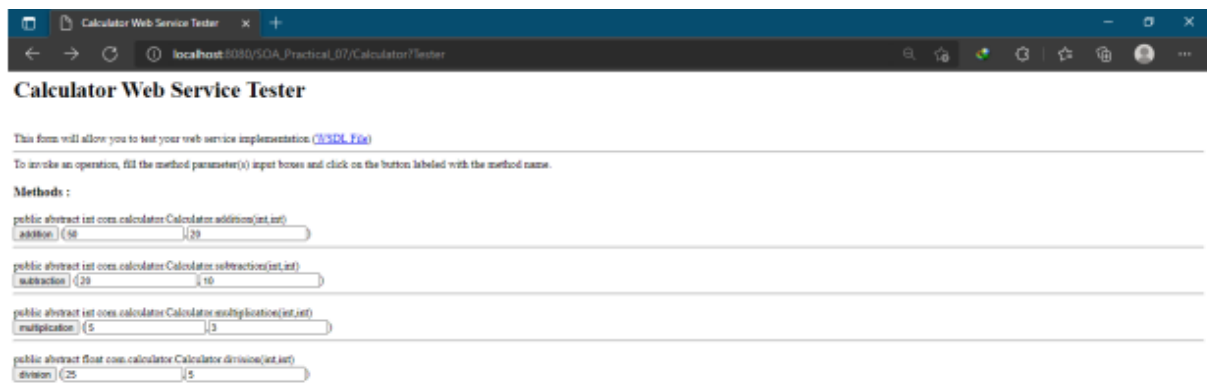
/\*\*

\* Web service operation

\*/

}

## OUTPUT



Method invocation trace

localhost:8080/SOA\_Practical\_07/Calculator/Tester

### addition Method invocation

---

Method parameter(s)

Type	Value
int	20
int	20

---

Method returned

int : "10"

---

SOAP Request

```
<?xml version='1.0' encoding='UTF-8'?><Envelope xmlns:S='http://schemas.xmlsoap.org/soap/envelope/' xmlns:SOAP-ENV='http://schemas.xmlsoap.org/soap/envelope/'>
  <SOAP-ENV:Header>
  </SOAP-ENV:Header>
  <S:Body>
    <m2:addition xmlns:m2='http://calculator.com/'>
      <v01>20</v01>
      <v02>20</v02>
    </m2:addition>
  </S:Body>
</Envelope>
```

---

SOAP Response

```
<?xml version='1.0' encoding='UTF-8'?><Envelope xmlns:S='http://schemas.xmlsoap.org/soap/envelope/' xmlns:SOAP-ENV='http://schemas.xmlsoap.org/soap/envelope/'>
  <SOAP-ENV:Header>
  </SOAP-ENV:Header>
  <S:Body>
    <m2:additionResponse xmlns:m2='http://calculator.com/'>
      <return0>10</return0>
    </m2:additionResponse>
  </S:Body>
</Envelope>
```

Method invocation trace

localhost:8080/SOA\_Practical\_07/Calculator/Tester

### subtraction Method invocation

---

Method parameter(s)

Type	Value
int	20
int	20

---

Method returned

int : "10"

---

SOAP Request

```
<?xml version='1.0' encoding='UTF-8'?><Envelope xmlns:S='http://schemas.xmlsoap.org/soap/envelope/' xmlns:SOAP-ENV='http://schemas.xmlsoap.org/soap/envelope/'>
  <SOAP-ENV:Header>
  </SOAP-ENV:Header>
  <S:Body>
    <m2:subtraction xmlns:m2='http://calculator.com/'>
      <v01>20</v01>
      <v02>20</v02>
    </m2:subtraction>
  </S:Body>
</Envelope>
```

---

SOAP Response

```
<?xml version='1.0' encoding='UTF-8'?><Envelope xmlns:S='http://schemas.xmlsoap.org/soap/envelope/' xmlns:SOAP-ENV='http://schemas.xmlsoap.org/soap/envelope/'>
  <SOAP-ENV:Header>
  </SOAP-ENV:Header>
  <S:Body>
    <m2:subtractionResponse xmlns:m2='http://calculator.com/'>
      <return0>10</return0>
    </m2:subtractionResponse>
  </S:Body>
</Envelope>
```

Method invocation trace

localhost:8080/50A\_Practical\_07/Calculator?tester

### multiplication Method invocation

Method parameter(s)

Type	Value
int	5
int	3

Method returned

int : "15"

SOAP Request

```
<?xml version='1.0' encoding='UTF-8'?><Envelope xmlns:S='http://schemas.xmlsoap.org/soap/envelope/' xmlns:SOAP-ENV='http://schemas.xmlsoap.org/soap/envelope/'>
  <SOAP-ENV:Header/>
  <S:Body>
    <m2:multiplication xmlns:m2='http://calculator.com/'>
      <val1>5</val1>
      <val2>3</val2>
    </m2:multiplication>
  </S:Body>
</Envelope>
```

SOAP Response

```
<?xml version='1.0' encoding='UTF-8'?><Envelope xmlns:S='http://schemas.xmlsoap.org/soap/envelope/' xmlns:SOAP-ENV='http://schemas.xmlsoap.org/soap/envelope/'>
  <SOAP-ENV:Header/>
  <S:Body>
    <m2:multiplicationResponse xmlns:m2='http://calculator.com/'>
      <return>15</return>
    </m2:multiplicationResponse>
  </S:Body>
</Envelope>
```

Method invocation trace

localhost:8080/50A\_Practical\_07/Calculator?tester

### division Method invocation

Method parameter(s)

Type	Value
int	25
int	5

Method returned

float : "5.0"

SOAP Request

```
<?xml version='1.0' encoding='UTF-8'?><Envelope xmlns:S='http://schemas.xmlsoap.org/soap/envelope/' xmlns:SOAP-ENV='http://schemas.xmlsoap.org/soap/envelope/'>
  <SOAP-ENV:Header/>
  <S:Body>
    <m2:division xmlns:m2='http://calculator.com/'>
      <val1>25</val1>
      <val2>5</val2>
    </m2:division>
  </S:Body>
</Envelope>
```

SOAP Response

```
<?xml version='1.0' encoding='UTF-8'?><Envelope xmlns:S='http://schemas.xmlsoap.org/soap/envelope/' xmlns:SOAP-ENV='http://schemas.xmlsoap.org/soap/envelope/'>
  <SOAP-ENV:Header/>
  <S:Body>
    <m2:divisionResponse xmlns:m2='http://calculator.com/'>
      <return>5.0</return>
    </m2:divisionResponse>
  </S:Body>
</Envelope>
```