

## 1. HelloWorldEndpoint:

```
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this
 * license
 * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
 */
package com.chat;

import jakarta.websocket.Encoder;

import java.io.StringWriter;

import jakarta.websocket.EncodeException;
import jakarta.websocket.Encoder;
import jakarta.websocket.EndpointConfig;
import jakarta.xml.bind.JAXBContext;
import jakarta.xml.bind.Marshaller;

public class MessageEncoder implements Encoder.Text<Person> {

    @Override
    public String encode(Person object) throws EncodeException {

        JAXBContext jaxbContext = null;
        StringWriter st = null;
        try {
            jaxbContext = JAXBContext.newInstance(Person.class);

            Marshaller marshaller = jaxbContext.createMarshaller();
            st = new StringWriter();
            marshaller.marshal(object, st);
        }
    }
}
```

```
System.out.println("OutGoing XML " + st.toString());
```

```
    } catch (Exception ex) {  
        ex.printStackTrace();  
    }  
    return st.toString();  
}
```

```
@Override
```

```
public void init(EndpointConfig endpointConfig) {  
    // do nothing.  
}
```

```
@Override
```

```
public void destroy() {  
    // do nothing.  
}  
}
```

## 2. MessageDecoder:

```
/*  
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 */
```

```
package com.chat;
```

```
import java.io.StringReader;
```

```
import jakarta.websocket.Decoder;
```

```
import jakarta.websocket.EndpointConfig;
```

```
import jakarta.xml.bind.*;
```

```
public class MessageDecoder implements Decoder.Text<Person> {
```

```
    @Override
```

```
    public Person decode(String s) {
```

```
        System.out.println("Incoming XML " + s);
```

```
        Person person = null;
```

```
        JAXBContext jaxbContext;
```

```
        try {
```

```
            jaxbContext = JAXBContext.newInstance(Person.class);
```

```
            Unmarshaller unmarshaller = jaxbContext.createUnmarshaller();
```

```
            StringReader reader = new StringReader(s);
```

```
            person = (Person) unmarshaller.unmarshal(reader);
```

```
        } catch (Exception ex) {
```

```
            ex.printStackTrace();
```

```
        }
```

```
        return person;
```

```
    }
```

```
    @Override
```

```
    public boolean willDecode(String s) {
```

```
        return (s != null);
```

```
    }
```

```
    @Override
```

```
    public void init(EndpointConfig endpointConfig) {
```

```

        // do nothing.
    }

    @Override
    public void destroy() {
        // do nothing.
    }
}

```

### 3. MessageEncoder:

```

/*
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 license
 * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
 */
package com.chat;

import jakarta.websocket.Encoder;

import java.io.StringWriter;

import jakarta.websocket.EncodeException;
import jakarta.websocket.Encoder;
import jakarta.websocket.EndpointConfig;
import jakarta.xml.bind.JAXBContext;
import jakarta.xml.bind.Marshaller;

public class MessageEncoder implements Encoder.Text<Person> {

    @Override

```

```

public String encode(Person object) throws EncodeException {

    JAXBContext jaxbContext = null;

    StringWriter st = null;

    try {

        jaxbContext = JAXBContext.newInstance(Person.class);

        Marshaller marshaller = jaxbContext.createMarshaller();

        st = new StringWriter();

        marshaller.marshal(object, st);

        System.out.println("OutGoing XML " + st.toString());

    } catch (Exception ex) {

        ex.printStackTrace();

    }

    return st.toString();

}

@Override

public void init(EndpointConfig endpointConfig) {

    // do nothing.

}

@Override

public void destroy() {

    // do nothing.

}

}

```

#### 4. Person

```
/*  
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this  
license  
 * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template  
 */  
  
package com.chat;  
  
  
/**  
 *  
 * @author Administrator  
 */  
class Person {  
    private String name;  
  
    public String getName() {  
        return name;  
    }  
  
    public void setName(String name) {  
        this.name = name;  
    }  
}
```

Simple chat:

##### 1. WebSocketChatServer:

```
package com;
```

```
import jakarta.websocket.*;
import jakarta.websocket.server.ServerEndpoint;
import java.io.IOException;
import java.util.Collections;
import java.util.HashSet;
import java.util.Set;

@ServerEndpoint("/chat")
public class WebSocketChatServer {

    private static final Set<Session> sessions = Collections.synchronizedSet(new HashSet<>());

    @OnOpen
    public void onOpen(Session session) {
        sessions.add(session);
        broadcast("User joined the chat.");
    }

    @OnMessage
    public void onMessage(String message, Session session) {
        broadcast("User: " + message);
    }

    @OnClose
    public void onClose(Session session) {
        sessions.remove(session);
        broadcast("User left the chat.");
    }

    private void broadcast(String message) {
        for (Session session : sessions) {
            try {
```

```

        session.getBasicRemote().sendText(message);
    } catch (IOException e) {
        e.printStackTrace();
    }
}
}
}
}

```

2. index.html:

```
<!DOCTYPE html>
```

```
<!--
```

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```
-->
```

```
<html>
```

```
<head>
```

```
<title>TODO supply a title</title>
```

```
<meta charset="UTF-8">
```

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
</head>
```

```
<body>
```

```
<h1>Chat Application</h1>
```

```
<input type="text" name="messageToSend" id="messageToSend">
```

```
<button onclick="sendMessage()">Send</button>
```

```
<br>
```

```
<br>
```

```
<div id="msg-chat">
```

```
</div>
```

```
<script>
```



```
var uri = "ws://localhost:8080/WebSocketNew/chat";  
var websocket = new WebSocket(uri);  
var inputMessage = document.getElementById("messageToSend");  
var chatDisplay = document.getElementById("msg-chat");
```

```
function connect(){  
    websocket.onopen = function(event){  
  
        console.log("WebSocket Connection Established.");  
    };  
  
    websocket.onmessage = function(event){  
        var message = event.data;  
        console.log(message);  
        appendMessage(message);  
    };  
  
    websocket.onclose = function(event){  
        console.log("WebSocket Connection Closed.");  
    };  
}
```

```
function sendMessage(){  
    var message = inputMessage.value.trim();  
    console.log(message);  
  
    if(message !== ""){  
        //chatDisplay.innerHTML = "";  
        websocket.send(message);  
        //appendMessage(message);  
        inputMessage.value = "";  
    }
```

```
}  
}
```

```
function appendMessage(message){  
    var msg = document.createElement("div");  
    msg.innerHTML = `<li>${message}</li>`;   
    inputMessage.value = "";  
    chatDisplay.appendChild(msg);  
}
```

```
connect();
```

```
</script>
```

```
</body>
```

```
</html>
```