

Perfect 👍

Here's a student-friendly explanation and example summary for each JSTL Formatting (fmt) tag you listed – suitable for notes or lab materials.

🌱 JSTL Formatting (fmt) Tags – Overview

Library declaration (include this at the top of JSP):

```
<%@ taglib prefix="fmt" uri="http://java.sun.com/jsp/jstl/fmt" %>
```

These tags are used to format and internationalize (i18n) text, numbers, and dates in JSP pages.

1. <fmt:formatNumber>

✅ Purpose: Formats numeric values (integer, decimal, currency, or percentage).

Example:

```
<%@ taglib prefix="fmt" uri="http://java.sun.com/jsp/jstl/fmt" %>
```

```
<fmt:formatNumber value="12345.6789" type="currency" />
```

```
<fmt:formatNumber value="0.85" type="percent" />
```

```
<fmt:formatNumber value="12345.6789" maxFractionDigits="2" />
```

2. <fmt:parseNumber>

✅ Purpose: Converts a string to a numeric value (Number, Currency, or Percentage).

Example:

```
<fmt:parseNumber value="1,234.56" var="num" />
```

Parsed Number: \${num}

3. <fmt:formatDate>

✅ Purpose: Formats date and/or time based on a given pattern or style.

Example:

```
<jsp:useBean id="now" class="java.util.Date" />
```

```
<fmt:formatDate value="${now}" type="both" dateStyle="long" timeStyle="short" />
```

```
<fmt:formatDate value="${now}" pattern="dd-MM-yyyy HH:mm:ss" />
```

4. <fmt:parseDate>

✓ Purpose: Parses a string into a java.util.Date object.

Example:

```
<fmt:parseDate value="13-10-2025" pattern="dd-MM-yyyy" var="parsedDate" />
```

Parsed Date: \${parsedDate}

5. <fmt:bundle>

✓ Purpose: Loads a resource bundle for internationalization.

Example (bundle.properties):

welcome=Welcome to JSP

JSP:

```
<fmt:bundle basename="bundle">
```

```
    <fmt:message key="welcome" />
```

```
</fmt:bundle>
```

6. <fmt:setLocale>

✓ Purpose: Sets a specific locale (language & region).

Example:

```
<fmt:setLocale value="fr_FR" />
```

```
<fmt:formatNumber value="12345.67" type="currency" />
```

7. <fmt:setBundle>

✓ Purpose: Loads a bundle and stores it in a scoped variable.

Example:

```
<fmt:setBundle basename="messages" var="msg" />
```

```
<fmt:message key="greeting" bundle="${msg}" />
```

8. <fmt:timeZone>

✓ Purpose: Defines a timezone for nested formatting or parsing.

Example:

```
<jsp:useBean id="now" class="java.util.Date" />
<fmt:timeZone value="GMT">
    <fmt:formatDate value="{now}" type="both" />
</fmt:timeZone>
```

9. <fmt:setTimeZone>

✓ Purpose: Stores a timezone setting in configuration.

Example:

```
<fmt:setTimeZone value="Asia/Kolkata" />
<fmt:formatDate value="{now}" type="both" />
```

10. <fmt:message>

✓ Purpose: Displays localized messages from a resource bundle.

Example:

```
<fmt:bundle basename="messages">
    <fmt:message key="welcome.message" />
</fmt:bundle>
```

11. <fmt:requestEncoding>

✓ Purpose: Sets the request's character encoding (for international characters).

Example:

```
<fmt:requestEncoding value="UTF-8" />
```

-----Example Programs-----

✚ 1. Currency and Number Formatting (e-commerce example)

priceDisplay.jsp

```
<%@ page contentType="text/html; charset=UTF-8" %>
<%@ taglib prefix="fmt" uri="http://java.sun.com/jsp/jstl/fmt" %>
<html>
```

```
<head><title>Price Display</title></head>

<body>

<h2>Product Price Display</h2>

<form action="priceDisplay.jsp" method="post">
    Enter Product Price: <input type="text" name="price" /><br><br>
    <input type="submit" value="Format Price" />
</form>

<hr>

<fmt:setLocale value="en_US" />
<c:if test="${not empty param.price}">
    <h3>Formatted Prices:</h3>
    <p><b>Original:</b> ${param.price}</p>
    <p><b>Currency Format:</b>
        <fmt:formatNumber value="${param.price}" type="currency"/>
    </p>
    <p><b>Two Decimal Points:</b>
        <fmt:formatNumber value="${param.price}" maxFractionDigits="2"/>
    </p>
    <p><b>As Percentage (10% discount example):</b>
        <fmt:formatNumber value="0.10" type="percent"/>
    </p>
</c:if>

</body>

</html>
```

Tags used:

<fmt:formatNumber> and <fmt:setLocale>

 **Real use:** Showing product prices in shopping sites.

2. Date & Time Formatting (Event Scheduler example)

dateFormatter.jsp

```
<%@ page contentType="text/html; charset=UTF-8" %>

<%@ taglib prefix="fmt" uri="http://java.sun.com/jsp/jstl/fmt" %>

<html>

<head><title>Date Formatter</title></head>

<body>

<h2>Event Date Formatter</h2>

<form action="dateFormatter.jsp" method="post">

    Enter Date (yyyy-MM-dd): <input type="text" name="eventDate"
placeholder="2025-11-25" /><br><br>

    <input type="submit" value="Format Date" />

</form>

<hr>

<c:if test="${not empty param.eventDate}">

    <fmt:parseDate value="${param.eventDate}" pattern="yyyy-MM-dd" var="parsedDate" />

    <h3>Formatted Output:</h3>

    <p><b>Original:</b> ${param.eventDate}</p>

    <p><b>Full Format:</b>

        <fmt:formatDate value="${parsedDate}" type="both" dateStyle="full"
timeStyle="long"/>

    </p>
```

```

<p><b>Short Date Only:</b>

    <fmt:formatDate value="{parsedDate}" type="date" dateStyle="short"/>

</p>

</c:if>

</body>

</html>

```

● Tags used:

<fmt:parseDate>, <fmt:formatDate>

 **Real use:** Formatting exam schedules, booking systems, deadlines.

3. Multi-Language Messages (Localization example)

messages.properties

welcome=Welcome to LBRCE Student Portal

thanks=Thank you for visiting!

messages_te.properties

welcome=ఎల్బీఆర్సీఈ విద్యార్థి పోర్టల్ కి స్వాగతం

thanks=మీ సందర్శనకు ధన్యవాదాలు!

i18nExample.jsp

```

<%@ page contentType="text/html; charset=UTF-8" %>

<%@ taglib prefix="fmt" uri="http://java.sun.com/jsp/jstl/fmt" %>

<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>

<html>

<head><title>Internationalized Message Example</title></head>

<body>

<h2>Language Selection</h2>

<form action="i18nExample.jsp" method="post">

```

```

<select name="lang">
    <option value="en_US">English</option>
    <option value="te_IN">Telugu</option>
</select>

<input type="submit" value="Change Language"/>
</form>

<hr>

<fmt:setLocale value="${param.lang}" />
<fmt:setBundle basename="messages" var="bundle" />

<h3><fmt:message key="welcome" bundle="${bundle}"/></h3>
<p><fmt:message key="thanks" bundle="${bundle}"/></p>

</body>
</html>

```

Tags used:

<fmt:setLocale>, <fmt:setBundle>, <fmt:message>

 **Real use:** Multilingual websites and dashboards.

4. Time Zone Formatting (Travel or University Portal)

timezoneDemo.jsp

```

<%@ page contentType="text/html; charset=UTF-8" %>
<%@ taglib prefix="fmt" uri="http://java.sun.com/jsp/jstl/fmt" %>
<html>
<head><title>Time Zone Display</title></head>
<body>

```

<h2>World Clock Example</h2>

```
<fmt:formatDate value="<%= new java.util.Date() %>" pattern="yyyy-MM-dd HH:mm:ss"
var="localTime"/>
```

```
<p><b>Server Time:</b> ${localTime}</p>
```

```
<fmt:timeZone value="Asia/Kolkata">
```

```
  <p><b>India (Asia/Kolkata):</b>
```

```
    <fmt:formatDate value="<%= new java.util.Date() %>" pattern="HH:mm:ss"/>
```

```
  </p>
```

```
</fmt:timeZone>
```

```
<fmt:timeZone value="America/New_York">
```

```
  <p><b>New York:</b>
```

```
    <fmt:formatDate value="<%= new java.util.Date() %>" pattern="HH:mm:ss"/>
```

```
  </p>
```

```
</fmt:timeZone>
```

```
<fmt:timeZone value="Europe/London">
```

```
  <p><b>London:</b>
```

```
    <fmt:formatDate value="<%= new java.util.Date() %>" pattern="HH:mm:ss"/>
```

```
  </p>
```

```
</fmt:timeZone>
```

```
</body>
```

```
</html>
```



Tags used:

<fmt:timeZone>, <fmt:formatDate>



Real use: Showing event times in different countries.

✔ Summary Table of JSTL fmt Tag Usage

Tag	Description	Example Use
<fmt:formatNumber>	Format numbers, currency, percentage	Billing, shopping cart
<fmt:parseNumber>	Convert string to number	Validating numeric input
<fmt:formatDate>	Display date/time with pattern	Exam/meeting schedule
<fmt:parseDate>	Parse date input	Booking forms
<fmt:setLocale>	Define locale	Language change
<fmt:setBundle>	Load message bundle	i18n text
<fmt:message>	Display localized text	Dynamic UI
<fmt:timeZone>	Apply timezone formatting	World clock
<fmt:setTimeZone>	Store timezone globally	Multi-country users