

Ex No : 9

Practice with XML Formatters

Date :26.09.24

QUESTION

1. Create XML file for your chosen application
 - a. Draw a tree structure
2. Use XSLT and XQuery to filter your xml document's contents
3. Apply sorting in XSLT:
 - a. Modify your XSLT to sort the elements in your web page in descending/ascending order.
4. Display the contents in a table using XSLT
5. Use `xsl:output` to convert your xml file into output types (e.g., HTML5, XML, or plain text)
6. Apply XML DOM for the selected application.

AIM

To practice XML formatter with above given questions.

CODE**1.mental.xml**

```
<mentalHealthApp>
  <pages>
    <page id="1">
      <title>Home</title>
      <content>Welcome to the Mental Health App. Explore our resources to support your mental health.</content>
      <route>/home</route>
    </page>
    <page id="2">
      <title>Resources</title>
      <content>A list of helpful resources for mental health improvement.</content>
      <route>/resources</route>
    </page>
    <page id="3">
      <title>About</title>
      <content>Learn more about our mission and values.</content>
      <route>/about</route>
    </page>
  </pages>
</mentalHealthApp>
```

```
<page id="4">
  <title>Contact</title>
  <content>Reach out to us for support and inquiries.</content>
  <route>/contact</route>
</page>
<page id="5">
  <title>Mental Health Form</title>
  <content>Check in on your mental health by submitting this form.</content>
  <route>/mental-health-form</route>
</page>
</pages>
<resources>
  <resource id="1">
    <title>Coping strategies</title>
    <description>Effective strategies for coping with mental health challenges.</description>
    <url>https://example.com/coping-strategies</url>
  </resource>
  <resource id="2">
    <title>Therapist directory</title>
    <description>A directory of therapists in your area.</description>
    <url>https://example.com/therapist-directory</url>
  </resource>
  <resource id="3">
    <title>Self-help articles</title>
    <description>Articles to improve your mental health and well-being.</description>
    <url>https://example.com/self-help-articles</url>
  </resource>
  <resource id="4">
    <title>Mental health assessments</title>
    <description>Online assessments to evaluate mental health conditions.</description>
    <url>https://example.com/assessments</url>
  </resource>
```

```
</resources>

<users>
  <user id="1">
    <username>user1</username>
    <email>user1@example.com</email>
    <password>hashedPassword1</password>
  </user>
  <user id="2">
    <username>user2</username>
    <email>user2@example.com</email>
    <password>hashedPassword2</password>
  </user>
</users>

<settings>
  <theme>light</theme>
  <language>en</language>
  <notifications>true</notifications>
</settings>

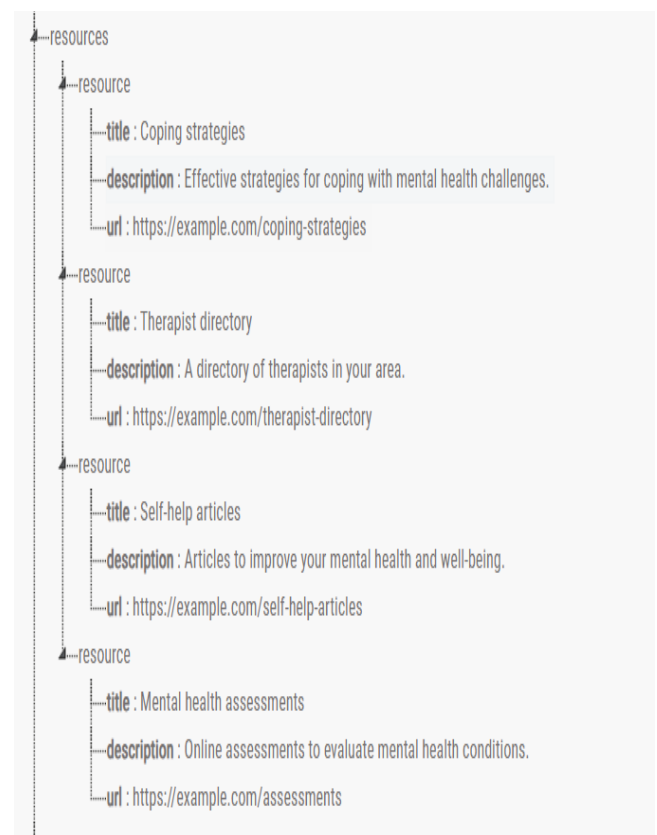
<moodForm>
  <mood id="1">
    <type>Happy</type>
  </mood>
  <mood id="2">
    <type>Neutral</type>
  </mood>
  <mood id="3">
    <type>Sad</type>
  </mood>
  <stressLevel>
    <min>0</min>
    <max>10</max>
  </stressLevel>
```

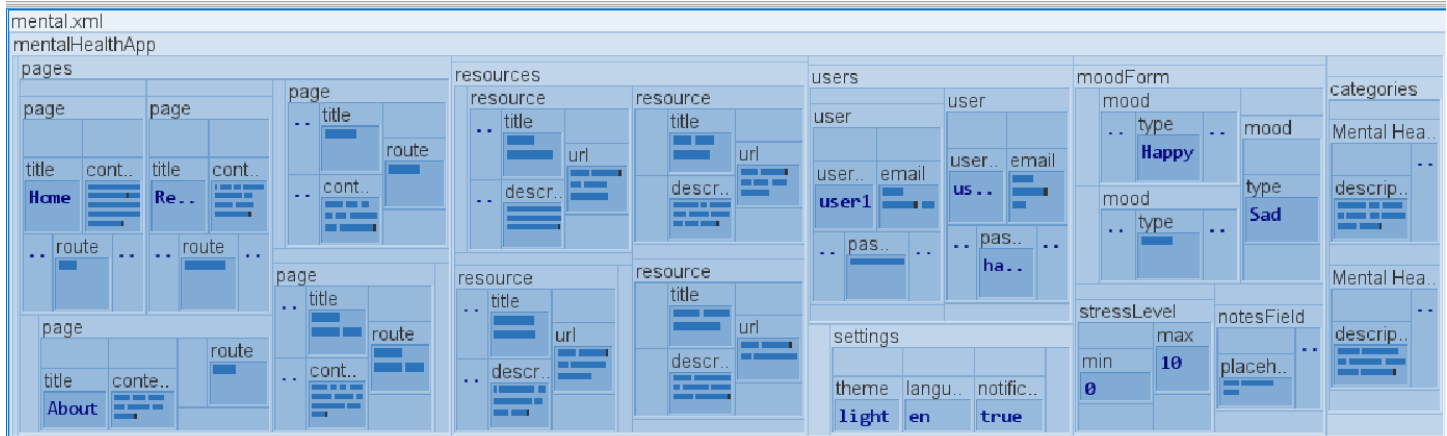
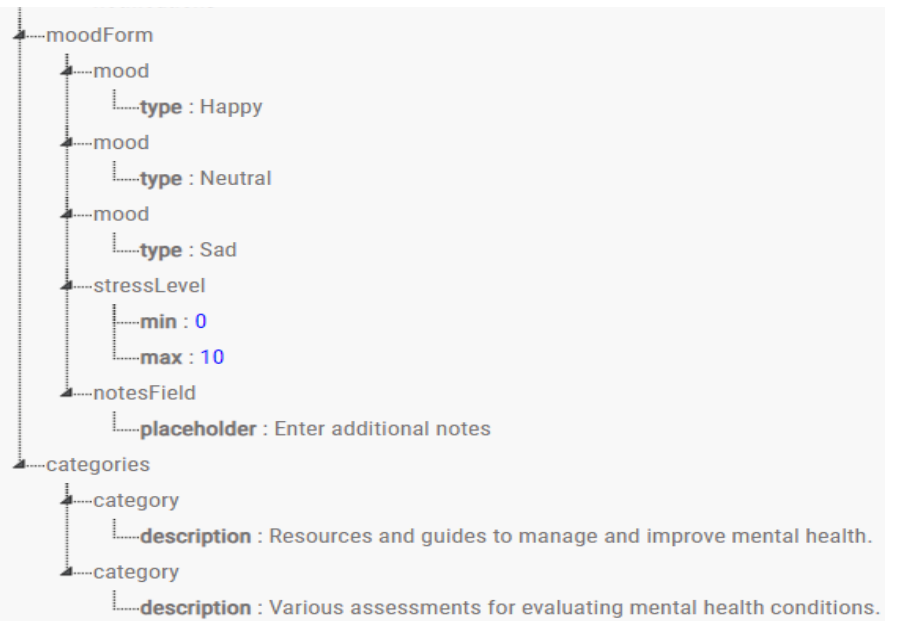
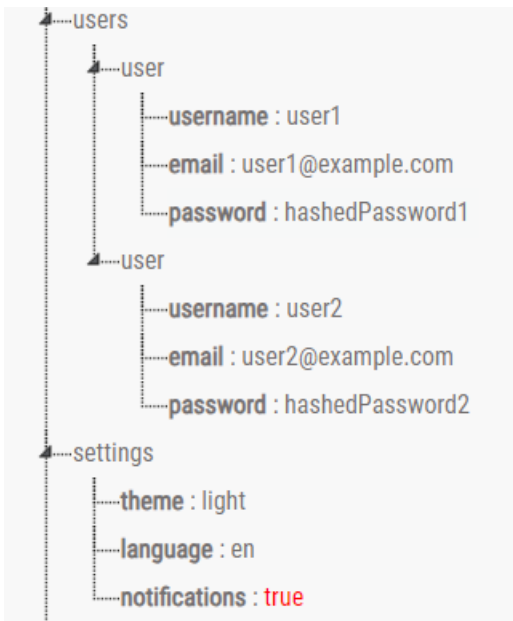
```

<notesField>
  <placeholder>Enter additional notes</placeholder>
</notesField>
</moodForm>
<categories>
  <category name="Mental Health Resources">
    <description>Resources and guides to manage and improve mental health.</description>
  </category>
  <category name="Mental Health Assessments">
    <description>Various assessments for evaluating mental health conditions.</description>
  </category>
</categories>
</mentalHealthApp>

```

A.





2.

XQuery

a) for \$resource in doc("mentalHealth/mental.xml")//resource

return <resource>

<title>{ \$resource/title/text() }</title>

<url>{ \$resource/url/text() }</url>

</resource>

<resource><title>Coping strategies</title><url>https://example.com/coping-strategies</url>

</resource>

<resource><title>Therapist directory</title><url>https://example.com/therapist-directory</url></resource>

</resource>

<resource><title>Self-help articles</title><url>https://example.com/self-help-articles</url></resource>

</resource>

<resource><title>Mental health assessments</title><url>https://example.com/assessments</url></resource>

</resource>

- b) for \$user in doc("mentalHealth/mental.xml")//user
 return \$user/email
 <email>user1@example.com</email>
 <email>user2@example.com</email>
- c) for \$mood in doc("mentalHealthApp.xml")//mood
 return \$mood/type
 <type>Happy</type>
 <type>Neutral</type>
 <type>Sad</type>
- d) let \$settings := doc("mentalHealth/mental.xml")//settings
 return <settings>
 <theme>{ \$settings/theme/text() }</theme>
 <language>{ \$settings/language/text() }</language>
 <notifications>{ \$settings/notifications/text() }</notifications>
 </settings>
 <settings><theme>light</theme><language>en</language><notifications>true</notifications></settings>
- e) let \$stress := doc("mentalHealth/mental.xml")//stressLevel
 return <stressLevel>
 <min>{ \$stress/min/text() }</min>
 <max>{ \$stress/max/text() }</max>
 </stressLevel>
 <stressLevel><min>0</min><max>10</max></stressLevel>

XSLT

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="1.0">
  <xsl:output method="html" indent="yes"/>
  <!-- Template to match the root element -->
  <xsl:template match="/">
    <html>
      <head>
        <title>Mental Health App</title>
        <style>
          table { border-collapse: collapse; width: 100%; }
          th, td { border: 1px solid black; padding: 8px; text-align: left; }
          th { background-color: #f2f2f2; }
```

```
</style>
</head>
<body>
  <h1>Mental Health App Overview</h1>
  <!-- Pages Section -->
  <h2>Pages</h2>
  <table>
    <tr>
      <th>Page ID</th>
      <th>Title</th>
      <th>Content</th>
      <th>Route</th>
    </tr>
    <xsl:for-each select="mentalHealthApp/pages/page">
      <tr>
        <td><xsl:value-of select="@id"/></td>
        <td><xsl:value-of select="title"/></td>
        <td><xsl:value-of select="content"/></td>
        <td><xsl:value-of select="route"/></td>
      </tr>
    </xsl:for-each>
  </table>
  <!-- Resources Section -->
  <h2>Resources</h2>
  <table>
    <tr>
      <th>Resource ID</th>
      <th>Title</th>
      <th>Description</th>
      <th>URL</th>
    </tr>
    <xsl:for-each select="mentalHealthApp/resources/resource">
```

```
<tr>
  <td><xsl:value-of select="@id"/></td>
  <td><xsl:value-of select="title"/></td>
  <td><xsl:value-of select="description"/></td>
  <td><xsl:value-of select="url"/></td>
</tr>
</xsl:for-each>
</table>

<!-- Users Section -->
<h2>Users</h2>
<table>
  <tr>
    <th>User ID</th>
    <th>Username</th>
    <th>Email</th>
  </tr>
  <xsl:for-each select="mentalHealthApp/users/user">
    <tr>
      <td><xsl:value-of select="@id"/></td>
      <td><xsl:value-of select="username"/></td>
      <td><xsl:value-of select="email"/></td>
    </tr>
  </xsl:for-each>
</table>

<!-- Settings Section -->
<h2>Settings</h2>
<table>
  <tr>
    <th>Theme</th>
    <th>Language</th>
    <th>Notifications</th>
```



```

</tr>
<tr>
  <td><xsl:value-of select="mentalHealthApp/settings/theme"/></td>
  <td><xsl:value-of select="mentalHealthApp/settings/language"/></td>
  <td><xsl:value-of select="mentalHealthApp/settings/notifications"/></td>
</tr>
</table>

```

```

<!-- Mood Form Section -->

```

```

<h2>Mood Form</h2>

```

```

<table>

```

```

  <tr>
    <th>Mood ID</th>
    <th>Type</th>
  </tr>

```

```

  <xsl:for-each select="mentalHealthApp/moodForm/mood">

```

```

    <tr>
      <td><xsl:value-of select="@id"/></td>
      <td><xsl:value-of select="type"/></td>
    </tr>

```

```

  </xsl:for-each>

```

```

</table>

```

```

<!-- Stress Level -->

```

```

<h3>Stress Level Range</h3>

```

```

<p>Min: <xsl:value-of select="mentalHealthApp/moodForm/stressLevel/min"/></p>

```

```

<p>Max: <xsl:value-of select="mentalHealthApp/moodForm/stressLevel/max"/></p>

```

```

<!-- Categories Section -->

```

```

<h2>Categories</h2>

```

```

<table>

```

```

  <tr>
    <th>Category Name</th>
    <th>Description</th>
  </tr>

```

```

<xsl:for-each select="mentalHealthApp/categories/category">
  <tr>
    <td><xsl:value-of select="@name"/></td>
    <td><xsl:value-of select="description"/></td>
  </tr>
</xsl:for-each>
</table>
</table>
</body>
</html>
</xsl:template>
</xsl:stylesheet>

```

3.

```

<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="html" indent="yes"/>
  <!-- Template for the root element -->
  <xsl:template match="/">
    <html>
      <head>
        <title>Mental Health Resources</title>
      </head>
      <body>
        <h1>Mental Health Resources</h1>
        <h2>Therapists</h2>
        <table border="1">
          <tr>
            <th>Name</th>
            <th>Specialization</th>
            <th>Contact</th>
            <th>Email</th>

```

```

        <th>Location</th>
    </tr>
    <xsl:for-each select="mental_health_resources/therapists/therapist">
        <xsl:sort select="name" order="ascending"/> <!-- Sort therapists by name -->
        <tr>
            <td><xsl:value-of select="name"/></td>
            <td><xsl:value-of select="specialization"/></td>
            <td><xsl:value-of select="contact"/></td>
            <td><xsl:value-of select="email"/></td>
            <td><xsl:value-of select="location"/></td>
        </tr>
    </xsl:for-each>
</table>
<h2>Helplines</h2>
<table border="1">
    <tr>
        <th>Name</th>
        <th>Contact Number</th>
        <th>Hours</th>
        <th>Website</th>
    </tr>
    <xsl:for-each select="mental_health_resources/helplines/helpline">
        <xsl:sort select="name" order="ascending"/> <!-- Sort helplines by name -->
        <tr>
            <td><xsl:value-of select="name"/></td>
            <td><xsl:value-of select="number"/></td>
            <td><xsl:value-of select="hours"/></td>
            <td><xsl:value-of select="website"/></td>
        </tr>
    </xsl:for-each>
</table>

```

<h2>Support Groups</h2>

<table border="1">

<tr>

<th>Name</th>

<th>Meeting Time</th>

<th>Location</th>

</tr>

<xsl:for-each select="mental_health_resources/support_groups/group">

<xsl:sort select="name" order="ascending"/> <!-- Sort support groups by name -->

<tr>

<td><xsl:value-of select="name"/></td>

<td><xsl:value-of select="meeting_time"/></td>

<td><xsl:value-of select="location"/></td>

</tr>

</xsl:for-each>

</table>

</body>

</html>

</xsl:template>

</xsl:stylesheet>

Therapists

Name	Specialization	Contact	Email	Location
Dr. Jane Doe	Psychiatry	098-765-4321	jane.doe@example.com	Los Angeles
Dr. John Smith	Clinical Psychology	123-456-7890	john.smith@example.com	New York

Helplines

Name	Contact Number	Hours	Website
Crisis Text Line	Text "HELLO" to 741741	24/7	www.crisistextline.org
National Suicide Prevention Lifeline	1-800-273-8255	24/7	www.suicidepreventionlifeline.org

Support Groups

Name	Meeting Time	Location
Anxiety Support Group	Every Thursday at 7 PM	Library Meeting Room
Depression Support Group	Every Wednesday at 6 PM	Community Center, Room 101

4.mental_health.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="mental_health_resources.xsl"?>
<mental_health_resources>
  <therapists>
    <therapist>
      <name>Dr. John Smith</name>
      <specialization>Clinical Psychology</specialization>
      <contact>123-456-7890</contact>
      <email>john.smith@example.com</email>
      <location>New York</location>
    </therapist>
    <therapist>
      <name>Dr. Jane Doe</name>
      <specialization>Psychiatry</specialization>
      <contact>098-765-4321</contact>
      <email>jane.doe@example.com</email>
      <location>Los Angeles</location>
    </therapist>
  </therapists>
  <helplines>
    <helpline>
      <name>National Suicide Prevention Lifeline</name>
      <number>1-800-273-8255</number>
      <hours>24/7</hours>
      <website>www.suicidepreventionlifeline.org</website>
    </helpline>
    <helpline>
      <name>Crisis Text Line</name>
      <number>Text "HELLO" to 741741</number>
      <hours>24/7</hours>
      <website>www.crisistextline.org</website>
    </helpline>
  </helplines>
</mental_health_resources>
```

```
</helpline>
```

```
</helplines>
```

```
<support_groups>
```

```
<group>
```

```
<name>Depression Support Group</name>
```

```
<meeting_time>Every Wednesday at 6 PM</meeting_time>
```

```
<location>Community Center, Room 101</location>
```

```
</group>
```

```
<group>
```

```
<name>Anxiety Support Group</name>
```

```
<meeting_time>Every Thursday at 7 PM</meeting_time>
```

```
<location>Library Meeting Room</location>
```

```
</group>
```

```
</support_groups>
```

```
</mental_health_resources>
```

Mental_health.xml

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
```

```
<xsl:output method="html" indent="yes"/>
```

```
<!-- Template for the root element -->
```

```
<xsl:template match="/">
```

```
<html>
```

```
<head>
```

```
<title>Mental Health Resources</title>
```

```
</head>
```

```
<body>
```

```
<h1>Mental Health Resources</h1>
```

```
<h2>Therapists</h2>
```

```
<table border="1">
```

```
<tr>
```

```
<th>Name</th>
```

```

    <th>Specialization</th>
    <th>Contact</th>
    <th>Email</th>
    <th>Location</th>
</tr>
<xsl:for-each select="mental_health_resources/therapists/therapist">
    <tr>
        <td><xsl:value-of select="name"/></td>
        <td><xsl:value-of select="specialization"/></td>
        <td><xsl:value-of select="contact"/></td>
        <td><xsl:value-of select="email"/></td>
        <td><xsl:value-of select="location"/></td>
    </tr>
</xsl:for-each>
</table>
<h2>Helplines</h2>
<table border="1">
    <tr>
        <th>Name</th>
        <th>Contact Number</th>
        <th>Hours</th>
        <th>Website</th>
    </tr>
    <xsl:for-each select="mental_health_resources/helplines/helpline">
        <tr>
            <td><xsl:value-of select="name"/></td>
            <td><xsl:value-of select="number"/></td>
            <td><xsl:value-of select="hours"/></td>
            <td><xsl:value-of select="website"/></td>
        </tr>
    </xsl:for-each>
</table>

```

<h2>Support Groups</h2>

<table border="1">

<tr>

<th>Name</th>

<th>Meeting Time</th>

<th>Location</th>

</tr>

<xsl:for-each select="mental_health_resources/support_groups/group">

<tr>

<td><xsl:value-of select="name"/></td>

<td><xsl:value-of select="meeting_time"/></td>

<td><xsl:value-of select="location"/></td>

</tr>

</xsl:for-each>

</table>

</body>

</html>

</xsl:template>

</xsl:stylesheet>

Therapists

Name	Specialization	Contact	Email	Location
Dr. John Smith	Clinical Psychology	123-456-7890	john.smith@example.com	New York
Dr. Jane Doe	Psychiatry	098-765-4321	jane.doe@example.com	Los Angeles

Helplines

Name	Contact Number	Hours	Website
National Suicide Prevention Lifeline	1-800-273-8255	24/7	www.suicidepreventionlifeline.org
Crisis Text Line	Text "HELLO" to 741741	24/7	www.crisistextline.org

Support Groups

Name	Meeting Time	Location
Depression Support Group	Every Wednesday at 6 PM	Community Center, Room 101
Anxiety Support Group	Every Thursday at 7 PM	Library Meeting Room

5.

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="transform.xsl"?>
<mentalHealthApp>
  <pages>
    <page id="1">
      <title>Home</title>
      <content>Welcome to the Mental Health App. Explore our resources to support your mental health.</content>
      <route>/home</route>
    </page>
    <page id="2">
      <title>Resources</title>
      <content>A list of helpful resources for mental health improvement.</content>
      <route>/resources</route>
    </page>
    <page id="3">
      <title>About</title>
      <content>Learn more about our mission and values.</content>
      <route>/about</route>
    </page>
    <page id="4">
      <title>Contact</title>
      <content>Reach out to us for support and inquiries.</content>
      <route>/contact</route>
    </page>
    <page id="5">
      <title>Mental Health Form</title>
      <content>Check in on your mental health by submitting this form.</content>
      <route>/mental-health-form</route>
    </page>
  </pages>
```

```
<resources>
  <resource id="1">
    <title>Coping strategies</title>
    <description>Effective strategies for coping with mental health challenges.</description>
    <url>https://example.com/coping-strategies</url>
  </resource>
  <resource id="2">
    <title>Therapist directory</title>
    <description>A directory of therapists in your area.</description>
    <url>https://example.com/therapist-directory</url>
  </resource>
  <resource id="3">
    <title>Self-help articles</title>
    <description>Articles to improve your mental health and well-being.</description>
    <url>https://example.com/self-help-articles</url>
  </resource>
  <resource id="4">
    <title>Mental health assessments</title>
    <description>Online assessments to evaluate mental health conditions.</description>
    <url>https://example.com/assessments</url>
  </resource>
</resources>
```

```
<users>
  <user id="1">
    <username>user1</username>
    <email>user1@example.com</email>
    <password>hashedPassword1</password>
  </user>
  <user id="2">
    <username>user2</username>
    <email>user2@example.com</email>
```

```

    <password>hashedPassword2</password>

  </user>

</users>

<settings>
  <theme>light</theme>
  <language>en</language>
  <notifications>true</notifications>

</settings>
</mentalHealthApp>

```

Home Welcome to the Mental Health App. Explore our resources to support your mental health. /home Resources A list of helpful resources for mental health improvement. /resources About Learn more about our mission and values. /about Contact Reach out to us for support and inquiries. /contact Mental Health Form Check in on your mental health by submitting this form. /mental-health-form Coping strategies Effective strategies for coping with mental health challenges. <https://example.com/coping-strategies> Therapist directory A directory of therapists in your area. <https://example.com/therapist-directory> Self-help articles Articles to improve your mental health and well-being. <https://example.com/self-help-articles> Mental health assessments Online assessments to evaluate mental health conditions. <https://example.com/assessments> user1 user1@example.com hashedPassword1 user2 user2@example.com hashedPassword2 light en true Happy Neutral Sad 0 10 Enter additional notes Resources and guides to manage and improve mental health. Various assessments for evaluating mental health conditions.

6.

```

<!DOCTYPE html>

<html>
<head>
  <title>Mental Health Resources</title>
</head>
<body>

  <h2>Mental Health Resources</h2>

  <div id="therapists"></div>
  <div id="helplines"></div>
  <div id="support_groups"></div>

  <script>
    var xhttp = new XMLHttpRequest();
    xhttp.onreadystatechange = function() {
      // Ensure the request is complete (readyState == 4) and successful (status == 200)
      if (this.readyState == 4 && this.status == 200) {
        displayData(this);
      }
    };
    xhttp.open("GET", "data.json", true);
    xhttp.send();
  </script>

```

```

    }
};

xhttp.open("GET", "mental_health_resources.xml", true); // Make sure the file path is correct
xhttp.send();

function displayData(xml) {
    var parser = new DOMParser();
    var xmlDoc = parser.parseFromString(xml.responseText, "text/xml");

    // Display Therapists
    var therapists = xmlDoc.getElementsByTagName("therapist");
    var therapistsHtml = "<h3>Therapists</h3>";
    for (var i = 0; i < therapists.length; i++) {
        therapistsHtml += "<p><strong>Name:</strong> " +
            therapists[i].getElementsByTagName("name")[0].childNodes[0].nodeValue + "<br>" +
            "<strong>Specialization:</strong> " +
            therapists[i].getElementsByTagName("specialization")[0].childNodes[0].nodeValue + "<br>" +
            "<strong>Contact:</strong> " +
            therapists[i].getElementsByTagName("contact")[0].childNodes[0].nodeValue + "<br>" +
            "<strong>Email:</strong> " +
            therapists[i].getElementsByTagName("email")[0].childNodes[0].nodeValue + "<br>" +
            "<strong>Location:</strong> " +
            therapists[i].getElementsByTagName("location")[0].childNodes[0].nodeValue + "</p>";
    }
    document.getElementById("therapists").innerHTML = therapistsHtml;

    // Display Helplines
    var helplines = xmlDoc.getElementsByTagName("helpline");
    var helplinesHtml = "<h3>Helplines</h3>";
    for (var i = 0; i < helplines.length; i++) {
        helplinesHtml += "<p><strong>Name:</strong> " +
            helplines[i].getElementsByTagName("name")[0].childNodes[0].nodeValue + "<br>" +

```

```

"<strong>Number:</strong> " +
helplines[i].getElementsByTagName("number")[0].childNodes[0].nodeValue + "<br>" +
"<strong>Hours:</strong> " +
helplines[i].getElementsByTagName("hours")[0].childNodes[0].nodeValue + "<br>" +
"<strong>Website:</strong> " +
helplines[i].getElementsByTagName("website")[0].childNodes[0].nodeValue + "</p>";
}
document.getElementById("helplines").innerHTML = helplinesHtml;

// Display Support Groups
var supportGroups = xmlDoc.getElementsByTagName("group");
var supportGroupsHtml = "<h3>Support Groups</h3>";
for (var i = 0; i < supportGroups.length; i++) {
    supportGroupsHtml += "<p><strong>Name:</strong> " +
        supportGroups[i].getElementsByTagName("name")[0].childNodes[0].nodeValue + "<br>" +
        "<strong>Meeting Time:</strong> " +
        supportGroups[i].getElementsByTagName("meeting_time")[0].childNodes[0].nodeValue + "<br>" +
        "<strong>Location:</strong> " +
        supportGroups[i].getElementsByTagName("location")[0].childNodes[0].nodeValue + "</p>";
}
document.getElementById("support_groups").innerHTML = supportGroupsHtml;
}
</script>

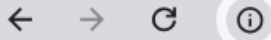
</body>
</html>

```

```

E:\>python -m http.server 8000
Serving HTTP on :: port 8000 (http://[::]:8000/) ...
::1 - - [07/Oct/2024 19:54:30] "GET /web.html HTTP/1.1" 200 -
::1 - - [07/Oct/2024 19:54:30] "GET /mental_health_resources.xml HTTP/1.1" 304 -

```

 localhost:8000/web.html

Mental Health Resources

Therapists

Name: Dr. John Smith
Specialization: Clinical Psychology
Contact: 123-456-7890
Email: john.smith@example.com
Location: New York

Name: Dr. Jane Doe
Specialization: Psychiatry
Contact: 098-765-4321
Email: jane.doe@example.com
Location: Los Angeles

Helplines

Name: National Suicide Prevention Lifeline
Number: 1-800-273-8255
Hours: 24/7
Website: www.suicidepreventionlifeline.org

Name: Crisis Text Line
Number: Text "HELLO" to 741741
Hours: 24/7
Website: www.crisistextline.org

Support Groups

Name: Depression Support Group
Meeting Time: Every Wednesday at 6 PM
Location: Community Center, Room 101

Name: Anxiety Support Group
Meeting Time: Every Thursday at 7 PM
Location: Library Meeting Room

RESULT

Thus, practiced XML formatter with given questions.