COMPUTER SCIENCE ECOSYSTEM

GROUP TASK ASSIGNMENT

GROUP SIX (6)
(FAITH & FARIDA)

LZIFC005L

11TH JULY 2024

MARCO PONTILI

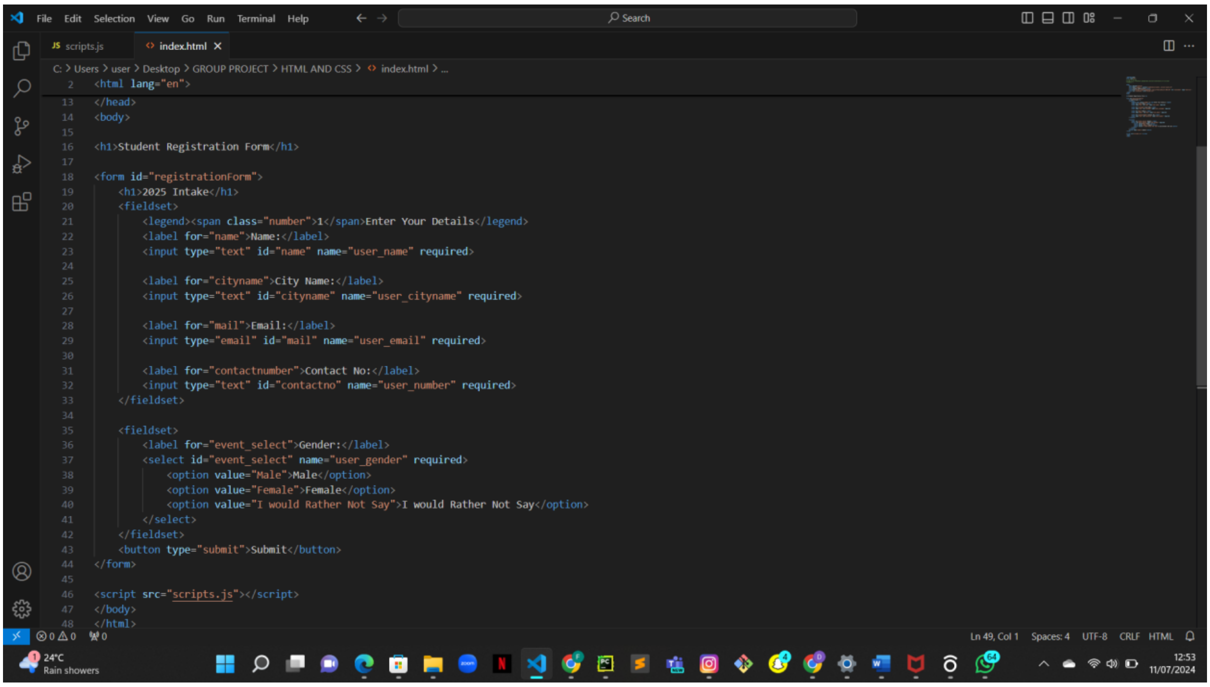
WEB-BASED DATA MANAGEMENT SYSTEM

This project aimed to equip foundation students with practical skills in Front-End Web Development, document typesetting, and data management. Our team, consisting of Faith Mulama and Farida Selima, we collaboratively tackled tasks involving JavaScript, LaTeX, XML, HTML/CSS, and JavaScript.

First of we thoroughly analysed the project to comprehend it.

CREATION OF WEB PAGE

By the use of HTML, CSS styling, and JavaScript, we created and implemented a webpage with a form. The form was for student registration where it took in the details of the students.

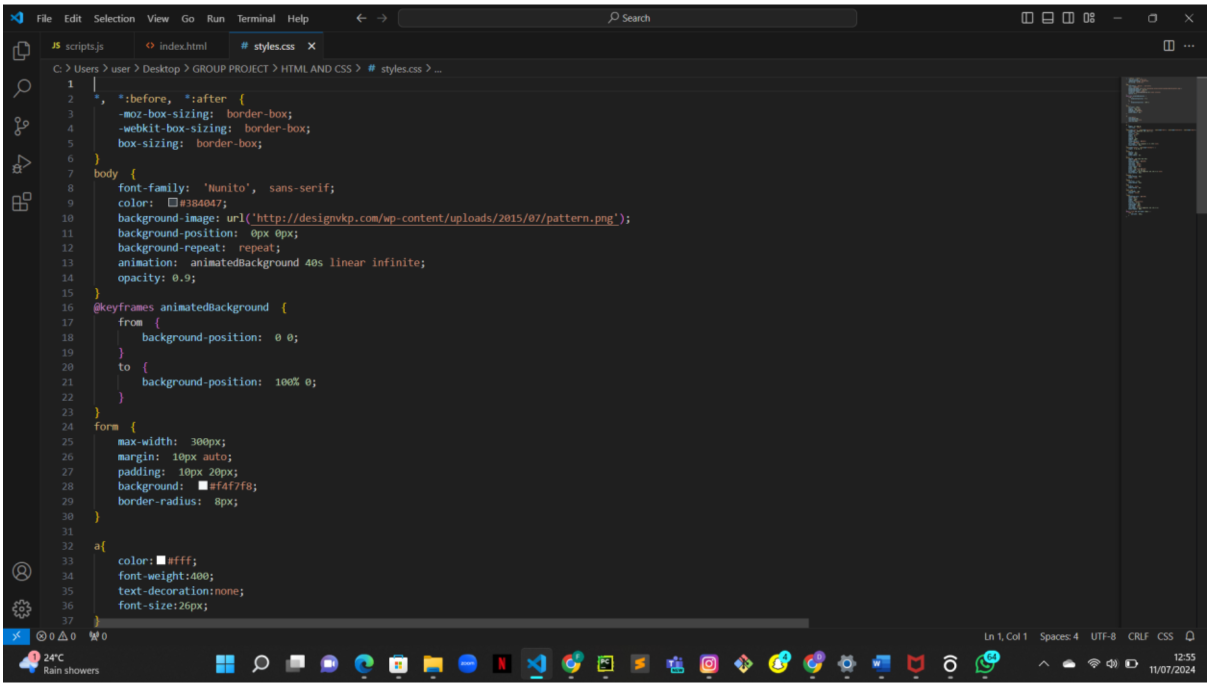


```html
<html lang="en">
</head>
<body>

<h1>Student Registration Form</h1>

<form id="registrationForm">
    <h1>2025 Intake</h1>
    <fieldset>
        <legend><span class="number">1</span>Enter Your Details</legend>
        <label for="name">Name:</label>
        <input type="text" id="name" name="user_name" required>

        <label for="cityname">City Name:</label>
        <input type="text" id="cityname" name="user_cityname" required>

        <label for="mail">Email:</label>
        <input type="email" id="mail" name="user_email" required>

        <label for="contactnumber">Contact No:</label>
        <input type="text" id="contactno" name="user_number" required>
    </fieldset>

    <fieldset>
        <label for="event_select">Gender:</label>
        <select id="event_select" name="user_gender" required>
            <option value="Male">Male</option>
            <option value="Female">Female</option>
            <option value="I would Rather Not Say">I would Rather Not Say</option>
        </select>
    </fieldset>
    <button type="submit">Submit</button>
</form>

<script src="scripts.js"></script>
</body>
</html>
```

Figure 1: HTML source code

CSS

To enhance visual appeal and capture reader's attention, I employed several styling elements to create a visually pleasing and readable webpage.



File Edit Selection View Go Run Terminal Help
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scripts.js
index.html
styles.css
C: > Users > user > Desktop > GROUP PROJECT > HTML AND CSS > styles.css > ...
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF CSS
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Rain showers
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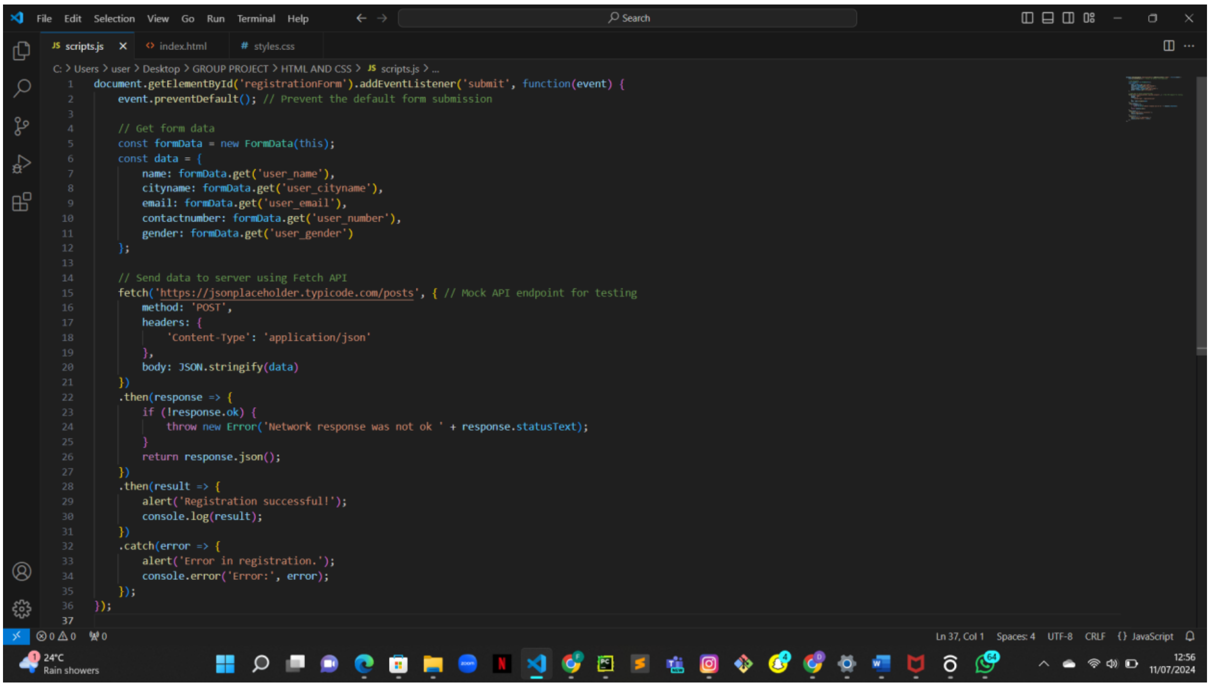
11/07/2024

```css

*,  *:before,  *:after  {
    -moz-box-sizing:  border-box;
    -webkit-box-sizing:  border-box;
    box-sizing:  border-box;
}
body  {
    font-family:  'Nunito',  sans-serif;
    color:  #384047;
    background-image: url('http://designvkp.com/wp-content/uploads/2015/07/pattern.png');
    background-position:  0px 0px;
    background-repeat:  repeat;
    animation:  animatedBackground 40s linear infinite;
    opacity: 0.9;
}
@keyframes animatedBackground  {
    from  {
        background-position:  0 0;
    }
    to  {
        background-position:  100% 0;
    }
}
form  {
    max-width:  300px;
    margin:  10px auto;
    padding:  10px 20px;
    background:  #f4f7f8;
    border-radius:  8px;
}

a{
    color:#fff;
    font-weight:400;
    text-decoration:none;
    font-size:26px;
}
```

Figure 2: CSS source code



File Edit Selection View Go Run Terminal Help
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scripts.js
index.html
styles.css
C: > Users > user > Desktop > GROUP PROJECT > HTML AND CSS > scripts.js > ...
Ln 37, Col 1 Spaces: 4 UTF-8 CRLF {} JavaScript
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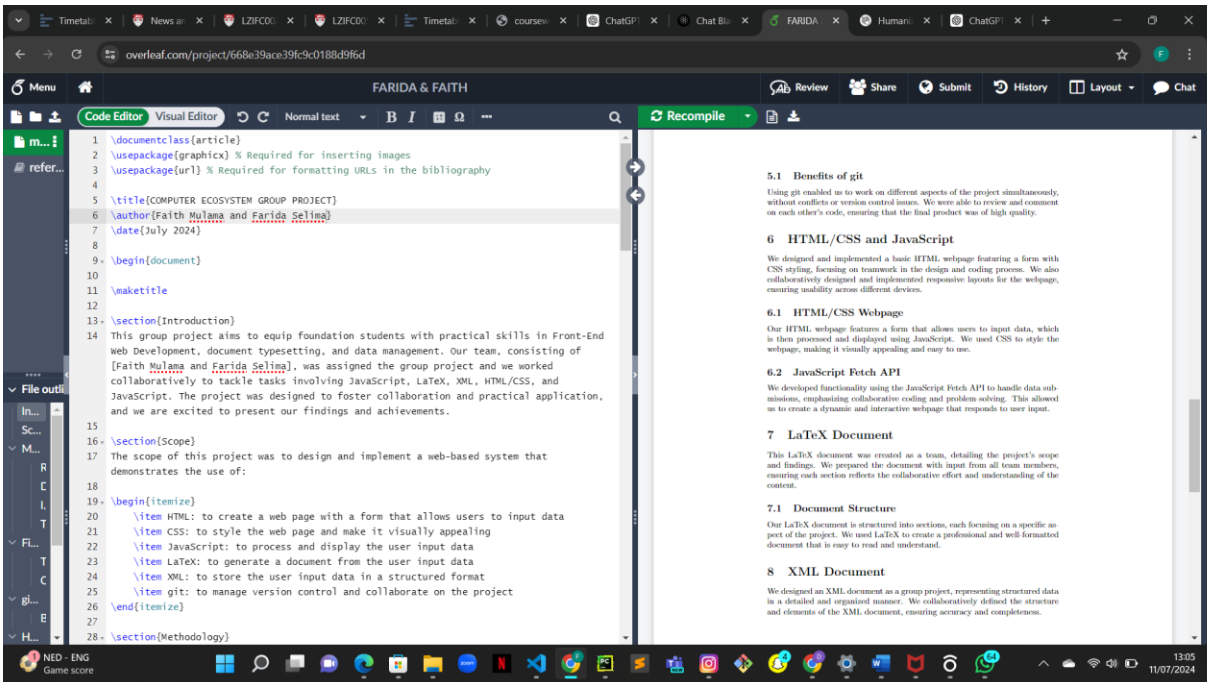
Rain showers
12:56
11/07/2024

```javascript
document.getElementById('registrationForm').addEventListener('submit', function(event) {
    event.preventDefault(); // Prevent the default form submission

    // Get form data
    const formData = new FormData(this);
    const data = {
        name: formData.get('user_name'),
        cityname: formData.get('user_cityname'),
        email: formData.get('user_email'),
        contactnumber: formData.get('user_number'),
        gender: formData.get('user_gender')
    };

    // Send data to server using Fetch API
    fetch('https://jsonplaceholder.typicode.com/posts', { // Mock API endpoint for testing
        method: 'POST',
        headers: {
            'Content-Type': 'application/json'
        },
        body: JSON.stringify(data)
    })
    .then(response => {
        if (!response.ok) {
            throw new Error('Network response was not ok ' + response.statusText);
        }
        return response.json();
    })
    .then(result => {
        alert('Registration successful!');
        console.log(result);
    })
    .catch(error => {
        alert('Error in registration.');
        console.error('Error:', error);
    });
});

```

Figure 3: JavaScript source code

LaTeX DOCUMENT

We collaboratively generated a LaTeX document that detailed the project scope. The document was structured into sections focusing on specific aspects of the project.



```latex
\documentclass{article}
\usepackage{graphicx} % Required for inserting images
\usepackage{url} % Required for formatting URLs in the bibliography

\title{COMPUTER ECOSYSTEM GROUP PROJECT}
\author{Faith Mulama and Farida Selima}
\date{July 2024}

\begin{document}

\maketitle

\section{Introduction}
This group project aims to equip foundation students with practical skills in Front-End Web Development, document typesetting, and data management. Our team, consisting of [Faith Mulama and Farida Selima], was assigned the group project and we worked collaboratively to tackle tasks involving JavaScript, LaTeX, XML, HTML/CSS, and JavaScript. The project was designed to foster collaboration and practical application, and we are excited to present our findings and achievements.

\section{Scope}
The scope of this project was to design and implement a web-based system that demonstrates the use of:

\begin{itemize}
    \item HTML: to create a web page with a form that allows users to input data
    \item CSS: to style the web page and make it visually appealing
    \item JavaScript: to process and display the user input data
    \item LaTeX: to generate a document from the user input data
    \item XML: to store the user input data in a structured format
    \item git: to manage version control and collaborate on the project
\end{itemize}

\section{Methodology}
```

5.1 Benefits of git

Using git enabled us to work on different aspects of the project simultaneously, without conflicts or version control issues. We were able to review and comment on each other's code, ensuring that the final product was of high quality.

6 HTML/CSS and JavaScript

We designed and implemented a basic HTML webpage featuring a form with CSS styling, focusing on teamwork in the design and coding process. We also collaboratively designed and implemented responsive layouts for the webpage, ensuring usability across different devices.

6.1 HTML/CSS Webpage

Our HTML webpage features a form that allows users to input data, which is then processed and displayed using JavaScript. We used CSS to style the webpage, making it visually appealing and easy to use.

6.2 JavaScript Fetch API

We developed functionality using the JavaScript Fetch API to handle data submissions, emphasizing collaborative coding and problem-solving. This allowed us to create a dynamic and interactive webpage that responds to user input.

7 LaTeX Document

This LaTeX document was created as a team, detailing the project's scope and findings. We prepared the document with input from all team members, ensuring each section reflects the collaborative effort and understanding of the content.

7.1 Document Structure

Our LaTeX document is structured into sections, each focusing on a specific aspect of the project. We used LaTeX to create a professional and well-formatted document that is easy to read and understand.

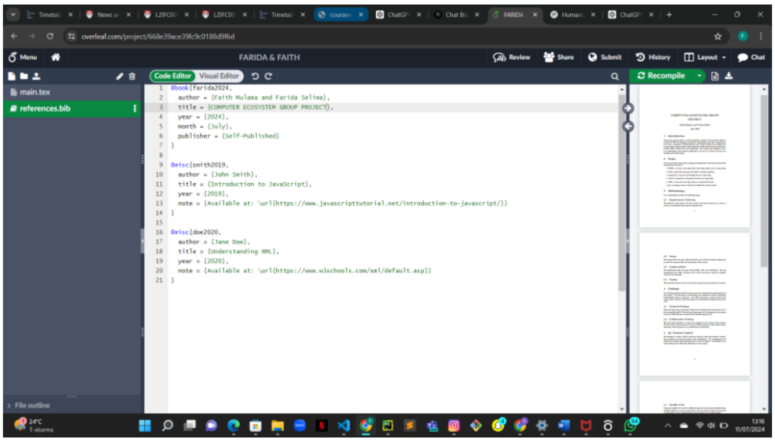
8 XML Document

We designed an XML document as a group project, representing structured data in a detailed and organized manner. We collaboratively defined the structure and elements of the XML document, ensuring accuracy and completeness.

Figure 4: LaTeX document

Bib Tex

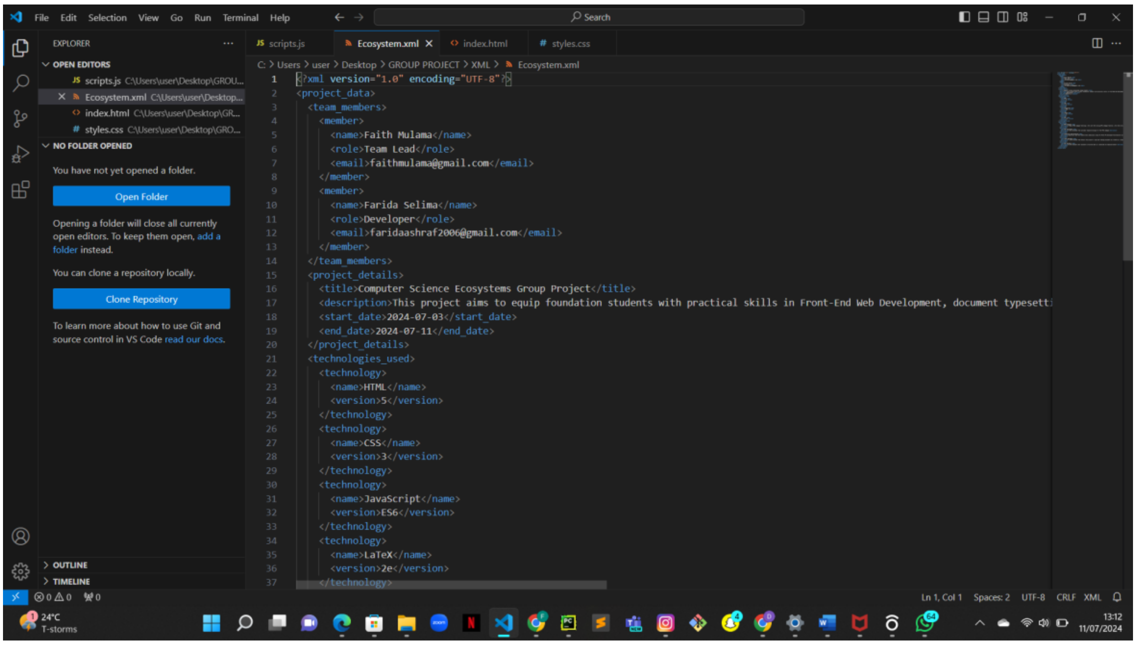
We created a reference bibliography on overleaf. This showed that we had written the work ourselves and we referenced some of the topics.



```bibtex
@book{farida2024,
  author = {Faith Mulama and Farida Selima},
  title = {COMPUTER ECOSYSTEM GROUP PROJECT},
  year = {2024},
  month = {July},
  publisher = {Self-Published}
}

@misc{smith2019,
  author = {John Smith},
  title = {Introduction to JavaScript},
  year = {2019},
  note = {Available at: \url{https://www.javascripttutorial.net/introduction-to-javascript/}}
}

@misc{doe2020,
  author = {Jane Doe},
  title = {Understanding XML},
  year = {2020},
  note = {Available at: \url{https://www.w3schools.com/xml/default.asp}}
}
```

XML DOCUMENT

We collaboratively keyed in designing the XML document to represent structured data effectively. The defined structure and elements ensured data accuracy and completeness.



```xml
<?xml version="1.0" encoding="UTF-8"?>
<project_data>
  <team_members>
    <member>
      <name>Faith Mulama</name>
      <role>Team Lead</role>
      <email>faithmulama@gmail.com</email>
    </member>
    <member>
      <name>Farida Selima</name>
      <role>Developer</role>
      <email>faridaashraf2006@gmail.com</email>
    </member>
  </team_members>
  <project_details>
    <title>Computer Science Ecosystems Group Project</title>
    <description>This project aims to equip foundation students with practical skills in Front-End Web Development, document typesetti
    <start_date>2024-07-03</start_date>
    <end_date>2024-07-11</end_date>
  </project_details>
  <technologies_used>
    <technology>
      <name>HTML</name>
      <version>5</version>
    </technology>
    <technology>
      <name>CSS</name>
      <version>3</version>
    </technology>
    <technology>
      <name>JavaScript</name>
      <version>ES6</version>
    </technology>
    <technology>
      <name>LaTeX</name>
      <version>2e</version>
    </technology>
```

File Edit Selection View Go Run Terminal Help
Search
EXPLORER
OPEN EDITORS
scripts.js C:\Users\user\Desktop\GROU...
Ecosystem.xml C:\Users\user\Desktop...
index.html C:\Users\user\Desktop\GR...
styles.css C:\Users\user\Desktop\GRO...
NO FOLDER OPENED
You have not yet opened a folder.
Open Folder
Opening a folder will close all currently open editors. To keep them open, add a folder instead.
You can clone a repository locally.
Clone Repository
To learn more about how to use Git and source control in VS Code read our docs.
OUTLINE
TIMELINE
C: > Users > user > Desktop > GROUP PROJECT > XML > Ecosystem.xml
Ln 1, Col 1 Spaces: 2 UTF-8 CRLF XML
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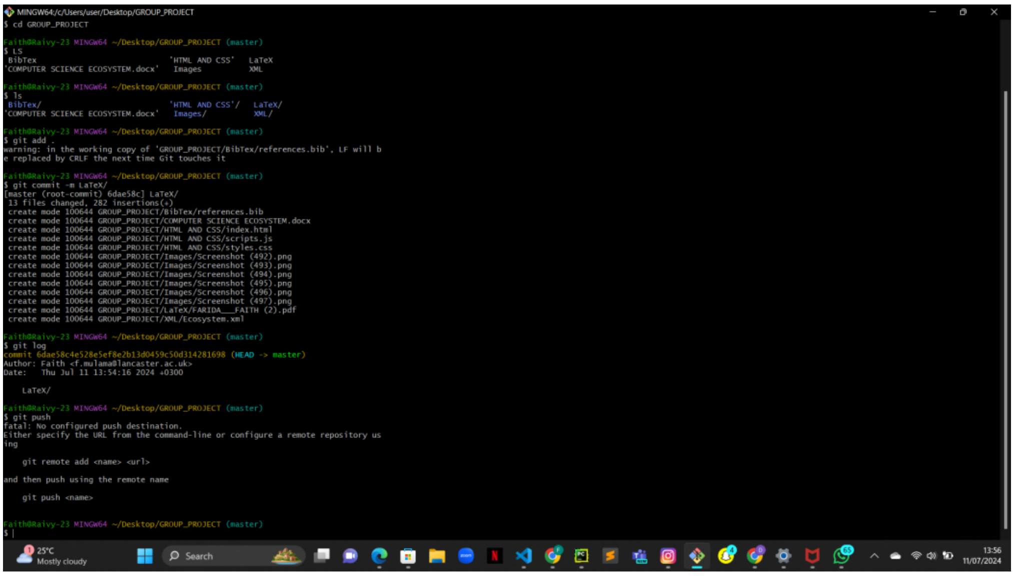
Figure 5: XML document

VERSION CONTROL WITH GITHUB

After we finished all the tasks assigned, we committed all the project files to a git hub repository ensuring version control and facilitating team collaboration where it allowed us to track changes and updates.



```
MINGW64:/c/Users/user/Desktop/GROUP_PROJECT
$ cd GROUP_PROJECT

Faith@Raivy-23 MINGW64 ~/Desktop/GROUP_PROJECT (master)
$ LS
 BibTex                              'HTML AND CSS'   LaTeX
'COMPUTER SCIENCE ECOSYSTEM.docx'    Images           XML

Faith@Raivy-23 MINGW64 ~/Desktop/GROUP_PROJECT (master)
$ ls
 BibTex/                             'HTML AND CSS'/   LaTeX/
'COMPUTER SCIENCE ECOSYSTEM.docx'    Images/           XML/

Faith@Raivy-23 MINGW64 ~/Desktop/GROUP_PROJECT (master)
$ git add .
warning: in the working copy of 'GROUP_PROJECT/BibTex/references.bib', LF will b
e replaced by CRLF the next time Git touches it

Faith@Raivy-23 MINGW64 ~/Desktop/GROUP_PROJECT (master)
$ git commit -m LaTeX/
[master (root-commit) 6dae58c] LaTeX/
 13 files changed, 282 insertions(+)
 create mode 100644 GROUP_PROJECT/BibTex/references.bib
 create mode 100644 GROUP_PROJECT/COMPUTER SCIENCE ECOSYSTEM.docx
 create mode 100644 GROUP_PROJECT/HTML AND CSS/index.html
 create mode 100644 GROUP_PROJECT/HTML AND CSS/scripts.js
 create mode 100644 GROUP_PROJECT/HTML AND CSS/styles.css
 create mode 100644 GROUP_PROJECT/Images/Screenshot (492).png
 create mode 100644 GROUP_PROJECT/Images/Screenshot (493).png
 create mode 100644 GROUP_PROJECT/Images/Screenshot (494).png
 create mode 100644 GROUP_PROJECT/Images/Screenshot (495).png
 create mode 100644 GROUP_PROJECT/Images/Screenshot (496).png
 create mode 100644 GROUP_PROJECT/Images/Screenshot (497).png
 create mode 100644 GROUP_PROJECT/LaTeX/FARIDA___FAITH (2).pdf
 create mode 100644 GROUP_PROJECT/XML/Ecosystem.xml

Faith@Raivy-23 MINGW64 ~/Desktop/GROUP_PROJECT (master)
$ git log
commit 6dae58c4e528e5ef8e2b13d0459c50d314281698 (HEAD -> master)
Author: Faith <f.mulama@lancaster.ac.uk>
Date:   Thu Jul 11 13:54:16 2024 +0300

    LaTeX/

Faith@Raivy-23 MINGW64 ~/Desktop/GROUP_PROJECT (master)
$ git push
fatal: No configured push destination.
Either specify the URL from the command-line or configure a remote repository us
ing

    git remote add <name> <url>

and then push using the remote name

    git push <name>

Faith@Raivy-23 MINGW64 ~/Desktop/GROUP_PROJECT (master)
$ |
```

Figure 6: Git