

XML and Data Fundamentals Notes

Hia Al Saleh

September 5th,2024

Contents

1	Introduction to XML	2
2	XML Document Structure Rules	2
3	Basic XML Example	2
4	XML Declaration	2
5	Character Data and Entities	2
6	Data Fundamentals	3
6.1	Definition of Data	3
6.2	Popular Data Formats	3
7	Course Information	3
7.1	Important Dates	3
7.2	Grading Breakdown	3
8	Email Etiquette	3

1 Introduction to XML

- XML stands for **Extensible Markup Language**, a technology used for data description and structuring.
- It is not a language itself but a standard for creating languages that meet XML criteria.
- XML files are text files with the `.xml` extension and are maintained by the World Wide Web Consortium (W3C).

2 XML Document Structure Rules

1. Tags are case-sensitive.
2. Opening tags must have corresponding closing tags.
3. Tags must be properly nested.
4. Attribute values must be quoted.
5. The root element must be unique and required.

3 Basic XML Example

```
<books>
  <book>
    <title>Cold Days</title>
    <author>Jim Butcher</author>
  </book>
</books>
```

4 XML Declaration

- XML declarations include the version and character encoding, e.g., `<?xml version="1.0" encoding="UTF-8"?>`.
- The `standalone` attribute indicates if the document relies on external files.

5 Character Data and Entities

- Predefined entities in XML: `<` (represents `<`), `>` (represents `>`), `&` (represents `&`), `'` (represents `'`) and `"` (represents `"`).
- CDATA sections are used to include large blocks of unparsed text: `<![CDATA[...]]>`.

6 Data Fundamentals

6.1 Definition of Data

- Factual information used for reasoning or calculation.
- Data can be transmitted or processed digitally.

6.2 Popular Data Formats

- XML (Extensible Markup Language).
- JSON (JavaScript Object Notation).

7 Course Information

7.1 Important Dates

- Start Date: September 3, 2024
- End Date: December 20, 2024
- Add/Drop Deadline: September 16, 2024
- Thanksgiving Break: October 14, 2024
- Exam Week: December 9-13, 2024

7.2 Grading Breakdown

- Assignments: 30% total, with each worth 2.5%.
- Quizzes: 10% total, with each quiz worth 1%.

8 Email Etiquette

- Use professional language in all communication.
- Include your full name, student number, and course section in all emails.
- Always use your college email account for correspondence.