

Unit 7: Seminar Preparation

Question:

What do you understand about the ontology that has been presented for your reading this week?

Could you attempt to define an ontology that would be relevant to the system that you are designing for the summative assessment?

You can share your responses for formative feedback from your tutor or share the next seminar.

Response:

Ontology, in software development, refers to a structured representation of knowledge that defines relationships between concepts within a specific domain (Rahayu et al., 2022). It helps systems process and interpret information in a meaningful way. In thinking about the system we are designing for the summative assessment, an ontology becomes crucial in organizing the various elements of my School Learning Management System (LMS).

In my LMS, the core entities would include Users, Courses, Grades, and Timetables. Users can be further categorized into Admins, Teachers, Students, and Parents, each with distinct roles and privileges. For instance, Admins would have the ability to manage the overall system, while Teachers would focus on managing courses and assigning grades. Students would only be able to view their own grades and timetables, and Parents would have access to view their children's progress.

The ontology we would define also considers the relationships between these entities. Courses would be linked to both Grades and Timetables, allowing Students and Parents to see a clear view of the academic progress and schedules. The system would need a clear structure to manage these relationships efficiently, ensuring that data is retrieved and displayed correctly (Rahayu et al., 2022)..

Additionally, security is a critical part of the ontology (Rahayu et al., 2022).. To ensure the system remains secure, I would incorporate elements like authentication, which would rely on passwords and multi-factor authentication (MFA). Role-based access control (RBAC) would be essential, ensuring that each user type has appropriate access to the system based on their role (Rahayu et al., 2022).

By structuring the ontology in this way, the system can manage both data flow and security efficiently, ensuring that sensitive information is accessible only to those with the proper authority. This helps ensure that the LMS operates securely while providing the necessary functionality for users.

References:

- Rahayu, N., Ferdiana, R., & Kusumawardani, S. (2022) A systematic review of ontology use in E-Learning recommender system. *Computers and Education: Artificial Intelligence* 3(1): 1-16. DOI: <https://doi.org/10.1016/j.caeai.2022.100047>