Capstone Project Ontology Requirements Specification Document

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Submitted to:

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1	Purpose
	The purpose of building the Capstone Ontology is to provide a clear and shared understanding of how capstone projects work in academic institutions. It helps organize information about the different people involved, the documents produced, and the steps followed in a capstone project, so that everyone from students to teachers can have a common view and easily manage the process.
2	Scope
	The ontology focuses specifically on university capstone projects. It includes important elements such as students, supervisors, project titles, technologies used, and evaluation criteria. The level of detail is designed to support the needs of academic staff, students, and project coordinators.

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3	Implementation Language
	OWL, serialized in RDF/XML (or Turtle) and edited in Protégé.
4	**Intended End-Users**
	1. **Academic administrators** and **faculty** managing capstone programs 2. **Students** and **project teams** 3. **Software developers** building capstone management or tracking tools 4. **Evaluators** involved in assessing capstone projects
5	**Intended Uses**
	1. **Guiding Students Through the Process.** A student asks, "What am I supposed to do after submitting my proposal?" the chatbot explains the next phase and its deliverables. 2. **Explaining Deliverable Requirements.** When a student asks, "What should be included in the SRS?" the chatbot lists the required sections (functional requirements, non-functional requirements, use-case diagrams, etc.). 3. **Submission Assistance.** If a student asks, "How do I upload my design diagrams?" — the chatbot provides step-by-step instructions on selecting the correct document type and linking it to the project.

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	4. **Retrieving Evaluation Criteria.** An evaluator asks, "What are the grading criteria for the final report?" — the chatbot lists the evaluation criteria (completeness, code quality, documentation clarity, presentation).
6	**Ontology Requirements**
	a) Non-Functional Requirements
	NFR1. Multilingual: Labels and comments in English and Urdu. **NFR2. Modular:** Core concepts separate from optional extensions. **NFR3. Performance:** OWL reasoning should complete quickly on typical datasets to ensure smooth system operation.
	b) Functional Requirements: Groups of Competency Questions
	Group 1: Academic Administrators
	CQ1. What are the main phases of a capstone project? CQ2. Who are the stakeholders in capstone projects? CQ3. What diagrams are part of the Design Document? CQ4. Who approves ProjectProposals? CQ5. What is the final deliverable of the project?
	Group 2: Students
	CQ1. What roles can I take as a student? CQ2. What documents do I submit in the first phase? CQ3. What diagrams are required for the DesignDocument? CQ4. Who evaluates my LiveDemo? CQ5. What is included in the FinalReport? CQ6. What phase follows Documentation?

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	Group 3: Software Developers					
	CQ1. What deliverables belong to CapstonePhase? CQ2. How are phases connected to deliverables? CQ3. What diagrams are part of DesignDocument? CQ4. What evaluators exist in the ontology? CQ5. What artifacts are part of SRS? CQ6. Is ProjectVideo a deliverable? CQ7. What is the parent class of GanttChart?					
	Group 4: Evaluators					
	CQ1. What criteria apply to SRS evaluation? CQ2. Who submits the FinalReport? CQ3. What deliverables do external evaluators assess? CQ4. How many deliverables exist in total? CQ5. What phase does ProjectManual belong to? CQ6. Is a GanttChart required?					
7	Pre-Glossary of Terms					
	a) Terms From Competency Questions + Frequency					
	Deliverable	15	Student	12	Supervisor	08
	CapstonePhase	10	DocumentationPhase	07	ProjectLeader	03
	DesignDocument	09	Evaluator	06	ProjectProposal	05
	SRS	05	FunctionalRequirement	03	FinalReport	04
	GanttChart	03	ImplementationPhase	07	LiveDemo	04