

## **Group Project – COSC601/AIT641**

### **Objective**

The objective of the group project is to provide hands on experience in collecting, understanding and specifying requirements for a proposed proof-of-concept project. The project has been designed to:

- 1) Expose students to the social interaction that underpins any Requirements Engineering (RE) Activity
- 2) Provide opportunity to apply various techniques related to the RE activity taught during the lecture of the COSC601/AIT641 course
- 3) Allow the research, prototyping, and iteration of potential solutions to the proposed project

### **Procedure**

Project groups, consisting of 3-4 students will be self-organized and remain throughout the remainder of the semester. The group project will, as best as possible, mimic an actual requirements engineering process with a product owner (me), requirements analysts/engineers (you), and user clients (me/you).

### **Problem**

Towson University requires undergraduate students to meet with their faculty academic advisor each semester to discuss their academic progress and plan for the courses that could be taken in the next semester(s) to make progress on their degree requirements. After this advising meeting, the faculty academic advisor removes a hold on the students' account, so that they can enroll for the courses they'd like to take in the following semester when their specific enrollment date arrives. Graduate students follow a similar process, although they do not have holds on their accounts requiring them to meet with an advisor.

During these advising meetings, several common issues/questions arise including:

- What classes should I take for my degree?
- If I add/drop my track, how will that change my graduation date?
- Can I take, for example, COSC 412 and COSC 432 at the same time?
- Is COSC 601 offered next semester?
- What are the Independent Study classes about? How do I enroll in them?
- What is COSC 603 about?
- How do I complete a Degree Completion Plan?
- How much longer until I can graduate?
- I am participating in an internship now, can I get credit for that?
- If I want to take a class at my local community college, how do I transfer it in?

While all of these questions could be answered without the need of a faculty advisor from several available university online resources (e.g., [university advising](#), [undergraduate/graduate](#) catalog,

[academic standards](#), etc.) and a student's particular academic record/progress, students and faculty don't know where/how to answer these questions and, too often, need to seek it from staff advisors and/or other faculty.

The Department of Computer and Information Sciences would like to conceptualize and see a partially functional, proof-of-concept prototype (for some use cases) system, using specialized/trained AI/LLMs, for our [undergraduate majors](#) (CIS, COSC, ITEC) and [masters-level graduate students](#) (AIT, COSC) to utilize as their personal academic advisor. This *CIS Advisor* system should be able to answer the common advising, listed previously, and all other common advising questions specific to the student. In addition, faculty, staff, and student advisors should be able to use the system to help in their advising of a student during their advising meeting. Finally, the staff of the [Advising Hub](#) are currently responsible for updating the department's public resources with the latest advising-related information.

The *CIS Advisor* system may only utilize publicly available information maintained by the department within the <https://www.towson.edu/fcsm/departments/computerinfosci> domain. That is, the system cannot access any information that would require TU authentication.

### **Phase 1 – Team Creation and Initial Project Analysis (9/30)**

Teams of 3-4 must be formed. Once formed, designate one team member to send me a Blackboard message with: 1. team name; and, 2., team members names. Once you have a team formed, you should begin by analyzing the problem to understand the project goals, context, scope, stakeholders, etc. in preparation for Phase 2 – First Requirements Gathering Meeting.

### **Phase 2 – First Requirements Gathering Meeting (10/7)**

During this phase each team will participate in two, 15-minute Requirements Gathering meetings with the product owner (me).

In one meeting, your team will act as observers of another group as they conduct their Requirements Gathering meeting with me, with the intention of further gathering product owner notes to further clarify requirements.

The other meeting, your team will run the meeting with the goal of forming a clear understanding of scope of work, measurable objectives and project constraints, based on the problem description for the proposed *CIS Advisor* system. Your group should plan for, following this meeting, to be able to develop a preliminary work-context diagram-based on the problem description, develop their understanding of the objectives, and finalize a stakeholder analysis.

The requirements engineering artifacts developed during, and following this phase should be appropriately documented in the Volere SRS document, provided on Blackboard. An interim SRS is due on 11/10.

Additional details will be provided in class.

### **Phase 3 – Second Requirements Gathering Meeting (10/21)**

During this phase each team will participate in two, 15-minute Requirements Gathering meetings with the product owner (me), as done in Phase 2.

In the meeting your team runs, the goal is to validate and/or seek further requirements following the prior meeting and any parts of the interim SRS document, but more importantly, to explore and seek an understanding of the business use cases, processes, and data flows of the proposed system. In particular, in this meeting with the product owner (me), you will hear the emphasis on the important business use cases that should be considered for the prototype implementation and demonstration.

The requirements engineering artifacts developed during, and following this phase should be appropriately documented in the Volere SRS document, provided on Blackboard. An interim SRS is due on 11/10.

Additional details will be provided in class.

#### **Phase 4 –Final Specification Document Development (11/11 - 12/13)**

Following feedback from the Peer Review session (11/11) and from the product owner, all teams must provide a final, completed SRS document due on 12/13). Additional details on the presentation will be provided in class.

#### **Phase 5 –Prototype Exploration and Business Use Case Development (ongoing)**

The requirements developed and documented throughout this project provides the definition of a general system to allow for advising assistance for TU CIS students. To understand and refine these requirements given the constraint of utilizing AI/LLMs, your team should explore partial implementations for some business use cases, possibly using some contrived/mock data, prompt engineering, etc.

While a team can elect to prototype and demonstrate any business use case(s) they'd like, each team should elicit/understand the important business use cases from the owner meetings. Each team will provide a maximum 1-page Project Demo Proposal outlining the business use cases / scenarios that will be demonstrated on the partially working prototype at the final meeting along with a brief technology description/illustration of how the prototype will be developed.

Additional details will be provided in class.

#### **Phase 6 – Project Prototype Pitch (12/1) and Demonstration Presentation (12/16)**

Along with a completed SRS document outline the overall requirements of the proposed *CIS Advisor* system, each team will provide a 15-minute project prototype pitch and demonstration presentation. This presentation must include: 1. a brief pitch of the proposed system (context, use cases, main features/requirements, implementation details); 2. a partially functional prototype for some, limited business use cases for demonstration; 3, a final Go/No Go analysis decision indicating whether this proposed system, given the goals, requirements and constraints, is worthwhile and feasible.

Additional details on the presentation will be provided in class.

## **Grading**

The overall grading for the semester project is as follows:

Requirements Gathering Meeting 1	5%
Requirements Gathering Meeting 2	5%
Peer Review Meeting	5%
Interim SRS	25%
Final SRS	30%
Functioning Demo	20%
Presentation	10%