CS 321 – Software Engineering

Fall 2019

Project Deliverable 2 – Software Architecture

Due date: October 12, 2019, 11:55 pm

The purpose of this assignment is to help you gain significant insights into the architecting process.

For this assignment, you are expected to do the following:

1. Review the requirements and refine them (modify, reprioritize, etc.) if necessary.
2. Research and identify the most suitable architectural pattern(s) for your system.
3. Justify the reasons for your choice and specify how the architecture would help engineer the non-functional requirements that have been previously identified.
4. Identify the different architectural views that would best suit your needs.
5. Consider the user experience of the system and determine how your architecture would accommodate that.
6. Reflect and document your team's experiences.
7. Meet with your GTA and discuss your team's progress

Deliverable:

1. System Overview [5 points]

Provide a high-level overview of the system. This is the product vision and should be stated in the user's vernacular. (*This can be modified based on current knowledge*).

2. Requirements [15 points]

a) Compile a comprehensive list of functional (with priorities and approximate estimates) and non-functional requirements (with measurable criteria).

b) Document the changes made to the requirements identified previously. Record any changes to priorities, levels of abstraction, etc. Also, discuss how those changes could affect your initial estimates. (*If your requirements have not changed, explicitly mention the same*).

3. System Architecture [30 points]

a) Discuss the architectural pattern(s) that you plan to apply to your system. Justify your decisions. Describe how the non-functional requirements are reflected in your architecture. (*You can apply multiple patterns. Provide the rationale for applying those patterns*).

b) Provide a visual representation of the complete system architecture. You can provide a high level view of the entire system and include separate detailed representations for the various components. You can also include multiple architectural views.

4. **User Experience [10 points]**

   Discuss the user experience considerations for the system. Does it affect any of the architectural decisions? (*Example: Let us assume that speed of execution is not one of the non-functional requirements that your system is striving to achieve. The architecture pattern chosen does not reflect this non-functional requirement. However, if speed is critical for delivering a rich user experience, you would have to review the architecture decisions and potentially modify the architecture pattern applied*).

5. **Team Retrospective [15 points]**

   Reflect on your team's experiences and document the following:
   a) What has gone well so far?
   b) What has not gone well?
   c) What steps have to be taken in order to address those issues?

6. **Contributions**

   Include information about the following:
   - Who managed the work for this deliverable?
   - Individual Contributions (*Briefly describe how the work was allocated and list who worked on the different aspects of the deliverable*).

Project Review Meeting with the GTA [25 points]

You have to meet with the GTA and discuss your team's progress with respect to the setting up version control and the other tools that will be used for implementation and testing, recording meeting minutes, and plans for design and implementation. You will also review your project's scope and discuss team dynamics.

The GTAs will use Piazza to schedule meeting times. If you are enrolled in section 001 or 004, please meet Bhargavi. If you are enrolled in section 002 or 005, please meet Roberto.

It is not required that every member of the team be present at the meeting. However, everyone's progress has to be reported to the GTA. So, if you are unable to attend the meeting, report your progress to your team's representative(s) and they will convey the same to the GTA.

Submission Instructions

The assignment should be submitted as a PDF file before the due date – October 12, 2019 at 11:55 pm. Make sure the name of the file includes the assignment number and the last names of all the team members, e.g., CS321-P2-<LastName1>-<LastName2>-<LastName3>-<LastName4>