CSIT883 System Analysis and Project Management
Group Project

Project title: Developing an intelligent system

Total marks: 30

Submission deadline: 23:59, 12 Dec. 2023 (Week 13)

Submission method: The report as well as deliverables (e.g., the software, source code, etc.) are to be submitted to the Moodle site. The software is to be demonstrated with the project presentation of Week 12.

Project description:

In this assignment, a team of 7-8 students will create a system with some intelligent functions. In developing this system, students need to exercise various system analysis and project management skills in different project management knowledge areas.

Suppose each group is contracted by the CIO of JI to develop an intelligent system. For example, systems providing intelligent services considering various scenarios, e.g., in a market environment, in a hospital environment, in a bank environment, in a university environment, etc. **Your designed system should include at least three subsystems, where each of the subsystems contains several modules/services/functions, etc.** You are encouraged to develop a system with some innovations (e.g., applying AI-based techniques/algorithms to developing the system, proposing new functions/models for common services, etc.).

The system can be developed in any programming language and database, so that the developed system can be demonstrated easily.

Each group is required to submit a project proposal by 28 Sep 2023 via Moodle, presenting the following contents.

- **a brief project introduction**
- **a description of your innovation idea of the project**
- **descriptions of all functions involved in the designed system**
- **planned individual job distribution for each team member (should be roughly equivalent)**
- **the role of each team member (encourage to be the manager in turn)**

Each group is to submit THREE files to the Moodle site, i.e., project proposal, final project report and the deliverables, containing the software you developed, test data and results, source code, etc. The evaluation of this assessment task is mainly based on the quality of the project report, the quality of how your team demonstrates the ability to apply system analysis and project management skills. Some other aspects will also be evaluated in the marking, e.g., the quality of project progress, and the quality of the presentation, etc.

Assignment Specification

Part 1. Project Integration Management

Tasks

1. Prepare a project charter for the top management, where a project charter should include at least the project's title and date of authorization, the project manager's information, a summary schedule, a summary of budget, project objectives, project success criteria, a summary of the planned approach for managing the project, roles and responsibilities. (Refer to lecture notes or Section 4.4 Developing a Project Charter in your textbook (Schwalbe, 2015).
2. Evaluate the project by preparing a weighted scoring model. You can make some reasonable assumptions.
3. Prepare a business case for the project.

Part 2. Project Scope Management

Tasks

1. Document your approach for collecting requirements for the project. Include all detailed descriptions/explanations of functional requirements and non-functional requirements (should include at least six functional requirements).
2. Develop a first version of a project scope statement for the project. Be as specific as possible in describing product characteristics and requirements, as well as all of the project's deliverables. Be sure to include testing and training as part of the project scope.
3. Develop a work breakdown structure for the project. Break down the work to Level 4, as appropriate. Be sure the WBS is based on the project charter earlier, the project scope statement created in Task 2, and other relevant information.
4. Use the WBS you developed in Task 3 to begin creating a Gantt chart using your choice of software. Do not enter any durations or dependencies. Add the resulting Gantt chart to your document.

Part 3. Project Schedule Management

Tasks

1. Identify at least ten milestones for the project. Discuss how determining these milestones might add activities or tasks to the Gantt chart. Remember that milestones normally have no duration, so you must have tasks that will lead to completing the milestone.
2. Using the Gantt chart you created earlier and the new activities and milestones you proposed in Tasks 1 and 2 above, modify your Gantt chart. Estimate the task durations and enter dependencies as appropriate. Add the Gantt chart and network diagram (both ADM and PDM), to your document.

Part 4. Project Quality Management

TASKS

1. Develop a list of at least eight quality standards/requirements of the system to be developed related to meeting the stakeholder expectations. Also provide a brief description of each of those quality standards/requirement. For example, a requirement might be that 90 percent of employees have logged into the system within two weeks after the system rolls out.

2. Based on the list created for Task 1, determine how you will measure progress on meeting the requirements. For example, you might have employees log into the system as part of the training program and track who attends the training. You could also build a feature into the system to track usage by user name, department, and other criteria.

Part 5. Project Resource Management

TASKS

1. Prepare a responsibility assignment matrix for the project based on the following information: The main tasks for testing include writing a test plan, unit testing, integration testing for each of the main system modules, system testing, and user acceptance testing. In addition to the project team members, a team of user representatives is available to help with testing. Prepare a RACI chart to help clarify roles and responsibilities for these testing tasks and for your project. Document key assumptions you make in preparing the chart.
2. The employees of the outside consulting firm and the user representatives have asked you to create a resource histogram to show how many people you think the project will need for testing, and to show when testing will occur. Assume that the consulting firm has junior and senior testers and that the user group has workers and managers. You estimate that you'll need the involvement of both groups in testing over a period of seven weeks. Assume that you'll need two senior tester for all seven weeks, three junior testers for the last four weeks, one user-group workers for the two weeks, four user-group workers for the last three weeks, and three user-group managers for the last two weeks. Create a resource histogram.

Part 6. Project Risk Management

TASKS

1. Create a risk register for the project. Identify eight potential risks, including risks related to the problems described in the previous paragraph. Include six negative and two positive risks with descriptions/analyses.
2. Plot the eight risks on a probability/impact matrix. Also assign a numeric value for the probability and impact of each risk on meeting the main project objective. Use a scale of 1 to 10 in assigning the values, with 1 representing the lowest values. For a simple risk factor calculation, multiply the probability score and the impact score. Add a column called Risk Score to your risk register to the right of the impact column. Enter the new data in the risk register. Write your rationale for how you determined the scores for each of the negative risks and each of the positive risks.
3. Develop a response strategy for each of the negative risks and each of the positive risks. Enter the information in the risk register. Also write a separate paragraph describing what specific tasks would be required to implement the strategy. Include time and cost estimates for each strategy as well.

Part 7. Project Stakeholder Management

Suppose the following people are also involved in your project:

- Jim Prince, the project manager
- Hillary, the project sponsor
- programmer/analysts in the IT department (three members)
- Tom, the network specialist in IT
- two business analysts in IT
- Gray, the sponsor and VP of human resources
- a human resources specialist
- a finance specialist
- Michael, the supplier who was hired to handle training on the new system
- 10,000 full-time employees and 3,000 part-time employees, all of whom are potential users of the new system

TASKS

1. Prepare a stakeholder register using the preceding information. Make up other information as needed.
2. Create a stakeholder management strategy for the project, focusing on members who are not on the project team, such as Hillary, Gray, the lead person from Supplier Michael, and a vocal member of a user group testing the new system. Be creative in developing potential management strategies.

Part 8. UML Diagrams

TASKS

The final task is to develop a set of UML Diagrams for the system that you have developed in the project, these diagrams should include:

- Domain Model Class Diagrams
- Use Case Diagrams
- Fully Developed Use Case Descriptions
- State Machine Diagrams
- System Sequence Diagrams
- Activity Diagrams

Note:
Your team is expected to practice applying various techniques of systems analysis taught in this subject to complete Part 8, and each diagram developed above should also provide corresponding descriptions/explanations.

Part 9. Supplementary Documents

TASKS

1. Meeting minutes: The project progress should be tracked regularly, and your team is required to provide at least 5 meeting minutes. (refer to the lecture notes for the template)

2. Project closing and lessons-learnt report: This part of the report should evaluate your project success against your initial plan. It should also provide detailed answers/analyses to questions like “Did the project meet scope, time, cost goals, and why?”, “What went right and what went wrong on this project?”, “What will you do differently on the next project based on your experience working on this project?” etc. You can refer to the lecture notes or Table 3-16 (p.116 in your textbook) for a sample lessons-learnt report.
3. Individual contribution of the team member: In the cover page of your report, please indicate the contribution of each team member, and everyone in the team should sign the cover page. Different team members may receive different marks based on their individual contribution rates claimed on the individual contribution form. Therefore, it is suggested to assign the overall workload evenly. The “individual contribution” of each team member is assessed by percentages by all the other members. In the “Individual Contribution Form”, please clearly state who complete which part of the project.

Marking Criteria:

The total mark for the project is 30, and the mark distribution is, project proposal and progress presentation (5 marks), final project oral presentation (5 marks), final project report (20 marks).

Some of the following criteria will be evaluated in the marking:

- Workload of the whole project as well as of each team member assigned
- Quality of the project progress
- Quality of slides in the presentation
- Quality of oral delivery and responses in the presentations
- Quality of applying system analysis and project management skills
- Quality of the report (presentation, English, correctness of applying the techniques, etc.)

Other information:

1. Team members are encouraged to play the role of the project manager in turn. For example, each team member can chair at least one meeting.
2. You might be suggested to adjust your work if the workload in the project proposal/progress presentation is too high/low.