315

Assignment One

Students use the university system as a pathway to the middle class and beyond, where educated labor is developed. Classes are assigned to each student, but each student must develop their own plan for work, after graduation. To decide, students must be engaged in career discovery in addition to their coursework.

System Goal

The goal of the new system is to cause each CIS student to arrive at a job, before graduation, that they are enthralled to have. This job must satisfy their long-term career objectives, for inclusion in an industry of their choosing, with clear paths to the role they most desire.

Are students informed enough to decide what they will do, post graduation? Do they know enough about the economy to make wise, long-term decisions? From whom do they receive advice and perspective? Can we do better, as a society, to influence and direct young people as they move through the university system?

In CIS 315, we propose the study of an enhanced career development toolset, to help each student discover an individual plan for professional development. Since the system is heretofore undeveloped, we will use the 11 week term to plan it, mapping out the needs of industries and students, and the modern capacities of information systems.

Deliver an analysis of the **problem domain** our proposed system seeks to solve. In it, use Venn diagrams, Value Stream Analysis, Kanban, Organization Charts and Data Flow Diagrams to illustrate the situation of student in relation to his/her career development while moving through his/her degree.

Perform the following five analyses. For each analysis, deliver a three page discussion on your observations. Conclude each analysis with a critical paragraph where you discover weak points (if any) in the existing mode of career development for students.

In your paper, treat the university as a production system, tasked with producing an educated workforce. Analyze this system using **value stream analysis**.

What challenges do students face in choosing a career? What information do they require to make informed career choices? Where does this information come from? How can they achieve some degree of information symmetry on the job market after graduation, in relation to their skills and academic interests? Utilize a **Venn diagram** to outline the complex interaction between university sources of information, and information input from the economy, on student decision making.

Using a **Kanban board**, map the existing process used by college students in general to arrive at a career decision while in school. What inputs acts in succession to inform and finalize a career decision? What bottlenecks exist in the decision-making process? Speculate as to what information is needed to overcome bottlenecks en route to informed career development, on behalf of students.

Develop an **organizational chart** of role players which interact with the student while in-school. Apply a **data flow analysis** to the org chart: what inputs flow from each actor, into the student's decision matrix? Elucidate how students arrive at career decisions as a product of advice and interactions with others.

Create a concluding analysis where you integrate the findings from each analysis.

Rubric
A
Discovers moments in our current system where inefficiency occurs, using five separate diagrammatic tools. Each tool delivers clear evidence of where inefficiency exists in the production system. Discovers **five** clear ways in which a new system could improve career development, one per complete analysis, above.

B
Concludes inefficiency exists by nature of written statements and stories, with partial diagrammatic analysis. Discovers **more than 2** clear ways in which a new system could improve career development, using 3 or 4 complete analyses, above.

C
Concludes inefficiency exists by storytelling or other narrative tools, but lacks diagrammatic support in his or her analysis. Discovers **2** ways in which a new system could improve career development, using 1 or 2 partially complete analyses, above.

D
Delivers a paper that could potentially be used toward systems analysis, with significant effort on behalf of the reader. Discovers **1** way in which a new system could improve career development, using 1 complete analysis, above.

Full letter grade applies where all of the following occurs:
1. APA format is employed,
2. diagrams include discussion,
3. grammar and spelling is perfect.
4. A table of contents is employed,
5. team mates are identified.
6. Work is clearly delegated among team mates in an Exhibit A portion after the bibliography, where each team mate's contribution is outlined.

Minus letter grade:
Any element missing or loosely complete, above.

Assignment Two

Assignment Two uses Assignment One's conclusions as a catalyst to develop a corporate strategy to avoid problems and deliver smoothly on a promise to develop an educated labor force.

Six Analyses are to take place:

1. SWOT Analysis
2. Case/Effect
3. Ishikawa Analysis
4. Business Motivation
5. Business Model Notation
6. Business Model Canvas

For each analysis, deliver a complete diagram that outlines clear direction for an operational strategy, assuming that an information system will provide an architecture for a collaborative solution.

Your diagram must drive each analysis. After each diagram is done, a series of three pages will accompany the analysis, clearly drawing out how a strategy should operate. Creative license should be taken to arrive at original conclusions. You should assume that any and all available information technologies are potentially applicable.

No outlines for any technology should be given at this time. However, very general suggestions can be made. The primary objective of each analysis is to provide a strategic direction to our goal.

Assignment three

Given the revealed strategies of Assignment Two, perform a Business Process Model Notation analysis to arrive at an ideal strategic information system, which arrives at our goal.

The BPMN will supply a clear business process which aligns with all strategy objectives. The BPMN supplies job roles, with clear activities and communication channels. Assume that an information system is present to serve each activity in the diagram. However, the actual specifics of how the IS will satisfy each operation will be left to the next exercise.

Your BPMN will identify the job responsibilities of each interacting person, in the career development matrix of the student. Your team's BPMN will prove that the strategic objectives are delivered through your functional model.

A UML Use Case is generated at the close of the BPMN analysis, and delivered to express the multi-stakeholder, multi-role nature of the new system.

Assignment Four

Given full knowledge of multi-stakeholder, strategic business processes, outline the Systems Analysis necessary to derive a working system. The following deliverables are necessary.

1. UML Use Case
2. UML Activity Diagrams
3. UML Class Diagrams
4. UML Sequence Diagrams

Upon completion of the Sequence Diagrams, a series of unit tests are written in a common programming language (java or C#).

A UI Wireframe narrative accompanies the UML diagrams.

Assignment Five

A network deployment diagram is delivered, consisting of a:

1. UML package diagram

2. physical architecture design, incorporating cloud computing elements from a major cloud provider.