**SAD Methodology for CLE**

Student’s Name

Institutional Affiliation

Course Number

Instructor’s Name

Date

**Scope Definition:**

This project creates a complete database solution for Cultural Learning Experiences (CLE), Inc. Data storage efficiency and manual process issues are the main goals. CLE hopes to improve operations, customer satisfaction, and employee morale by switching to a database-driven system.

The suggested database solution will provide a user-friendly interface for entering, editing, and deleting student, teacher, and class information. Data integrity and correctness will be prioritized by maintaining data entry formatting consistency.

The database solution will also enable CLE to provide analytical reports on student enrolment, class statistics, financial data, and other vital variables. These reports will aid managerial decision-making.

CLE will buy two new computers to ensure all staff can use the database solution. The $65,000 budget covers project development, deployment, and training.

This project will create an organized and effective data management system for future automation projects like payroll and accounts payable. CLE's educational tour planning and organizing will thrive with the database solution.

**Problem Analysis:**

Manual work practises are causing CLE problems. The organization must often be more accurate with students, classes, and locations. Errors exacerbate inefficiency, creating a chaotic workplace. CLE needs to address client needs, lowering customer satisfaction. Database solutions are necessary to overcome these obstacles and improve operational efficiency.

The database system will simplify data management and assure data accuracy. CLE will improve productivity and effectiveness by automating and reducing manual errors. The database solution simplifies data entry, modification, and deletion, improving data integrity and consistency. It will also generate detailed reports and give an easy-to-use interface for data retrieval.

By addressing these issues, CLE hopes to improve customer satisfaction, reduce errors, and boost productivity. A strong database solution will enable future automation and help the organization organize educational tours and unique learning experiences.

**Requirements Analysis:**

Identification and Analysis of Candidate Solutions:

Database requirements:

**1. User-friendly interface:** Data entry, editing, and deletion should be simple in the database.

**2. Efficient data storage:** The database should store and manage student, teacher, class, and other data.

**3. Data entry consistency and accuracy**: The solution should enforce data entry formatting guidelines.

**4. Improved reporting:** The database should create valid billing, marketing, and general information reports.

**5. Budget constraints:** The project budget is $65,000. Hence the solution must fit inside this budget.

**6. Compatibility:** The solution should work with Windows 7 and Microsoft Office Professional 2010 on modern PCs.

**Identification and Analysis of Candidate Solutions:**

The team will carefully assess database system candidates to meet Cultural Learning Experience (CLE) standards. Cost, scalability, ease of installation, and compatibility with the existing system will be evaluated.

Custom database creation could produce a system specialized to CLE's needs. This option can be customized to meet the organization's needs. However, development costs and implementation time may increase.

Alternatives include off-the-shelf database software. They were selecting a pre-built database management system that meets most CLE standards. Off-the-shelf options are cheaper and faster, but CLE may need customization.

Cloud-based solutions offer scalability, flexibility, and multi-location data access. Cloud databases minimize infrastructure costs and upkeep.

The team will evaluate these candidate solutions to find the best fit for CLE's needs, budget, and long-term growth.

**Recommended Solution:**

The team will thoroughly evaluate database system candidates for Cultural Learning Experiences (CLE). Cost, scalability, ease of installation, and system compatibility will be assessed.

A CLE-specific database could be created. Organizations can customize this option. Development expenses and implementation time may rise.

Database software is available. It was selecting a pre-built database management system that fulfils most CLE criteria. CLE may need to customize off-the-shelf items.

Cloud-based solutions are flexible and multi-location. Cloud databases save money on infrastructure.

The team will assess CLE's needs, budget, and long-term growth.

**Creation of DFDs (Current and Proposed):**

Data flow diagrams (DFDs) will help the team comprehend human operations and the proposed system's data flow. These graphics will show how the organization manages data now and in the future database solution.

DFDs will show data flow and manual system processes. This will entail recording data on students, courses, teachers, and organization entities and departments. By mapping the system, the team will find inefficiencies, errors, and improvement opportunities.

The team will also construct DFDs to demonstrate data flow in the new database solution. This includes data entry, update, deletion, report generation, and interfaces with accounting and marketing organizations.

DFDs will show the system's functioning, current issues, and how the proposed database solution will improve data management, streamline operations, and increase efficiency.

**Current Level 0 DFD:**

**Current Level 0 DFD:**

* Record Student Information: This process captures and records students' information, including their student ID number, address, telephone number, email address, etc. The data flow represents the input of student information.
* Record Faculty Information: This process captures and records the information of faculty members, including their contact information. The data flow represents the input of faculty information.
* Record Class Registration: This process records the registration of classes by students. The data flow represents the input of class registration information.
* Provide Billing Information: This process provides the necessary information to an external accounting firm for billing purposes. The data flow represents the output of billing information.
* Provide Marketing Information: This process provides reports to an external marketing firm to inform potential faculty participants about educational trips and increase awareness. The data flow represents the output of marketing information.

**Proposed Level 0 DFD:**

**Proposed Level 0 DFD:**

* Capturing and documenting student data, often known as "Record Student Information," will proceed largely in the same way as it does currently.
* The current method of collecting and cataloguing faculty data, dubbed "Record Faculty Information," will be maintained.
* The first stage is identical to what is done in the current system: registering students for courses.
* Providing billing information to the external accounting firm proceeds in the same manner as before.
* See item #6 below if you want to keep sending marketing data to the outside marketing firm as you do now.
* Information such as student registration, course scheduling, and other relevant information can be monitored with the use of reports. The data stream illustrates the messages that were generated.

**References:**

Cooper, A., Quas, J. A., & Cleveland, K. C. (2014). The emotional child witness: Effects on juror decision‐making. *Behavioral Sciences & the Law*, *32*(6), 813-828.

Hallström, E., Gee, Q., Scarborough, P., & Cleveland, D. A. (2017). A healthier US diet could reduce greenhouse gas emissions from both the food and health care systems. *Climatic Change*, *142*, 199-212.

Van Holen, F., Clé, A., West, D., Gypen, L., & Vanderfaeillie, J. (2020). Family bonds of foster children. Qualitative research regarding the experience of foster children in long-term foster care. *Children and Youth Services Review*, *119*, 105593.