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System Analysis and Design-CST 2406

Professor Garrett

Company: Eagle Tutoring

Company Description

The company the information system will be designed for is a nationwide tutoring company. What's the company's name? *Eagle Tutoring*. The company offers tutoring services for a variety of subjects. The subjects include but are not limited to math, science, history, english, and test prepping for the various major test in each of the states. Secondary services include lessons in music, art, and language classes. This company was formed through the consolidation of several tutoring entities which were once individual tutoring companies throughout all of the states in the country. How many locations do they have? *The company has fifty locations one in each state.* Which allows the company to provide the most optimal amount of service as well as have its services be available to a vast amount of clients. How many employees? *The company employs roughly a minimum of one thousand three hundred employees* throughout all the locations and all the departments within each location. Now that they have all been consolidated into one company the information system in place has centralized some of the aspects of the company and recorded some data about the employees, clients, and locations however it hasn't done so in the most efficient, complete, or effective ways.

The clients the company would provide its services to are very diverse in terms of level of ability and understanding in each of the subjects, current level of education, age, the way they learn, and how quickly they learn or understand the material being tutored. Identify who the *clients* are of your company's business? *The general range of clients would be students from elementary schools all the way through colleges and universities.* Each of the facilities currently has varying staff depending on the state of affairs of the individual location and the size of the location being looked at. However each location has a maintenance crew that is composed of a minimum of one or a maximum of two staff members depending on the size of the facility. Each location has an office staff which is in charge of scheduling tutoring session, updating existing sessions, keeping track of current clients and tutors in some manner. (paper work, electronically, Hybrid method), admit new customers, provide assistance to customers, terminate client accounts, provide customer service, as well as take care of the office work such as billing, book keeping, set up of the facilities for tutoring uses, and supply tracking and ordering. The size of the office staff ranges from one to eight employees depending on the location in question. Each and every facility has a minimum of twenty tutors and there is currently no maximum number of tutors for any location however that might change later on. Who are your company's *suppliers*? *The suppliers the business would be involved with are office supplies suppliers, test preparation material suppliers, and suppliers of tutoring material for all the subjects offered by the company.*

Eagle Tutoring has a variety of services which it uses to generate its yearly revenue. What do they sell or how do they generate revenue? *Tutoring services are the primary means of generating revenue the secondary means of generating revenue are music and art lessons as well as language classes.* What is an estimate of their gross annual revenue? *The minimum annual revenue expected for the company is roughly twenty seven million three hundred and sixty thousand dollars.* The annual sales in units for the company are represented in a minimum of

roughly nine hundred and twelve thousand tutoring session collectively from all the locations. How many transactions occurs per day? *The minimum number of transaction occurring per day are roughly three thousand.* What are the *transactions* that drive your company's operations? *The transactions that drive the company`s operations are tutoring sessions.* There are also details about each transaction or session that would need to be tracked. The company has several data requirements. What data archiving requirements characterize your company? *The company needs to record data for all the tutors working in all of their locations, the current operating location for tutors as well as the state they are in. The various subjects each tutor can offer their services in as well as to what level of complexity with in each subject each tutor can perform. The availability of the tutors time wise and location wise. The hourly rate of the tutor for each of the subjects (the rate also changes depending on the level of complexity).*

The company would also need to record data for the facilities staff such as the basic individual information (name, contact information, address). Company related information would also have to be recorded such as the hourly rate of each staff member, whether they are full-time or part-time, employee department, time working for the company, and employee experience. The company would also need to record data for each of the clients. The data that needs to be collected from the client is their contact information, the subjects they require tutoring in, the level of understating in each of the subjects the client is requiring tutoring in, the availability of the client, the location where the client would like to receive the services, the current facility the client is receiving services from, and the current address of the client (if the client should move the address would need to be updated and the client would have to be reassigned to the nearest available location should they desire to continue receiving services). Data about the session would also have to be recorded. Data such as what tutor gave the session, to what client, the subject of the session, the duration of the session, location of the session, and the rate of the session. The session data would have to be recorded every time a session takes place and updated in real time.

The data obtained from the client could be possibly mined later on to allow the company to offer exclusive discounts or promotions to loyal customers or customers who have been with the company for a certain amount of time. The data obtained from the tutors could also be possibly mined to see which tutors are the ones in demand the most so they can in turn be granted bonuses and things of the sort. What throughput requirements characterize your company? *Because the system would be dealing with a significant amount of tutoring sessions (transactions) and have to update them in real time as changes and modifications to sessions develop the system throughput would have to be high. System throughput should be high enough to accommodate for high activity time windows and ensure that the system will be able to keep functioning consistently, efficiently, and accurately.* In order to be able to cope with all the traffic and to keep the data flowing as fast as possible and reflect alterations to sessions as quickly as possible to keep all the parties involved accurately and efficiently informed.

Scope Definition

The information system currently in place has consolidated the company locations throughout the country to a certain degree. However, the company needs it to be replaced or drastically improved in order to meet all the requirements and needs of the company and increase efficiency, accuracy, and productivity. The company needs to make drastic improvements or implement a new information system for various reasons. Why the company needs the proposed information system? *Some of those reasons are the following inclusion of locations in the current system are inconsistent some locations and the data relating to them are present in their entirety in the system, some locations have some data, and some locations do not exist in the system. The data related to individuals involved with the company is incomplete and inconsistent. The data gathered needs to be centralized in its entirety for each and every company location and entity involved with the company. The company needs to be able to record, capture, and manipulate tutoring sessions and their data. The information system in place does not have any supplier functions which the company requires and needs.* Why the company would be better off after the information system is in place? *The opportunities the company could have if the information system is improved or replaced would be to increase data accuracy and usefulness, gain the availability to accurately and consistently stipulate the subjects that are definitely available for tutoring, have accurate and consistent data about the tutors, clients, and location staff, monitor the amount of sessions and their details, monitor the amount of tutors and clients currently active throughout the branches of the company and the data relating to them. Gain supplier functions to make restocking easier and consistent. Gain the ability to generate internally and externally useful statistics.*

The company would gain the opportunity to be able to continue providing tutoring services for loyal clients even if they were to move (change city or state). This would be done by accurately keeping data about the clients living location and redirecting them to another location of our company that would be closest to them and continue providing the services in order to diminish the loss of clients as well as diminish the interruptions in the services provided. The same concept would be able to apply to tutors if they are moving they could be relocated to a new location to continue on with the company and not have to lose their job or the company an employee. The company would also gain the opportunity to have the gathered data mined for several purposes. One purpose would be to produce statistics that would allow comparisons between the company and its competitors to gain insight on how they rank amongst the competition and if they aren't high in the ranks they could study the methods and best practices of companies that are in order to improve the company to have a greater competitive advantage. Another purpose would be to study client data in order to see what subjects the clients requesting the most to better accommodate them, special offers could be created based on service trends as well as exclusive offers or promotions for loyal customers who have been with the company for a certain amount of time. Another purpose would be to mine the tutor data in order to be aware of which tutors are requested more frequently and which tutors have the best practices which could be studied and implemented by the other tutors to increase the quality of the services

provided as well as the success rate of each tutor. The data could also be used in a way which would allow the company to recognize excelling tutors and reward them accordingly.

Approximately how long it will take to design, implement, and install it? *Since we are a nationwide company and we are still in the process of solidifying our methods of operations and organization the company is expecting the process of designing, developing, and implementing a new information system or improving the current one to take longer than normal. Because of these factors the time span the project would be given would be a year to a year and a half.* At which point there should be a functioning system in place. With a high degree of efficiency, data accuracy, reliability, recoverability, and available upgrade options. How many people will be needed to carry out everything? *Because of the wide spread of the locations throughout the country the company would have the project team be of medium to large size. The team would be composed of two system analysts so that they can gather information from the various locations in a timely fashion. From each office one or two of the most knowledgeable users would participate depending on the location. Two system designers to speed up the design process and get all the logical and physical modeling done as quickly and efficiently as possible. There would be one or two project managers leading the project. In terms of building we would like to get that done as quickly as possible so there would be either three or four system builders to expedite the last step as much as possible.* How much will the system design, implementation, and installation cost? *The initial project budget would be two and a half million dollars with room for expansion. This budget was derived by taking into account the salary of all the participants involved in the development of the system for a year and a half and it also accounts for the costs of servers and data centers.*

What information system is being proposed to be designed? *The proposed system would be a system which would be able to capture and record data about the various tutoring sessions and their details. The system would also have the capability to update and modify tutoring sessions as well as all the aspects involved with the sessions in real time as the updates and modifications happened. These system abilities would produce more accurate sessions and information for all those involved. It would also capture and record data about all the individuals involved in the company as well as the various locations of the company. The proposed information system would build off of the current ones functions and abilities by improving them and incorporating new abilities and functions in order to expand the amount of data captured from each of the transactions and the recorded inputs for the individuals working for the company or individuals involved with the company. The proposed information system would completely consolidate all the data of all the company locations in so doing increasing the accuracy of the services offered by the company as well as lead to a decrease in costs in certain fronts. The system would provide accurate numbers for the company in terms of staff, revenue, and location activity. The proposed information system would have the ability to mine the gathered data for various purposes and in various ways for the companies benefit.*

Problem Analysis & System Improvement Objectives

1) **Problem:** The existing information system in place did not completely consolidate the data of all the company locations and the data of the locations that was consolidated was not consolidated in the most efficient, consistent, or useful manner.

   System Improvement Objective: Complete, consistent, useful, and efficient centralization of all the data for all the locations throughout the country.

   The main problem with the current information system in place is that it did not completely consolidate all of the company locations and those that were consolidated were not done so in the most efficient or useful manner. Complete centralization of the data for all the locations throughout the country would be the first system improvement objective. As it stands the system has inconsistent data about the locations of the company. The locations that had implemented electronic practices in terms of organization, record keeping, tracking of tutors and clients were incorporated into the system and their data has been transferred into the system. While locations that where using a hybrid practices which consisted of some electronical and some manual records had partial data enter the system. The data what was electronical while the manual was omitted and not incorporated. The locations that were doing everything manually do not exist in the system and there is no data about them. A standard method would have to be developed which would be used consistently and would meets company requirements to transfer and insert the manual records into the system as well as new data entries. The electronic systems in place at certain locations that were not able to be completely merged into the system because of incompatibilities between the location system and the company system. For these situations interfaces that would enable cooperation between the two systems would have to be developed and implemented in the new system. Consolidation and centralization of all the location, staff, tutor, and client data would increase data accuracy and consistency by 60%.

2) **Problem: T**he existing system captures data that is very basic data about all of the entities relating to the company and it isn't very useful and slows down or prevents the rendering of the company's services.

   System Improvement Objective: Expansion of the data that can be captured by the system and to increase the data's usefulness. Decreasing of time it takes to request a service. Remove factors that hinder the amount of possible service requests.

   A second problem with the existing system is that the data captured is very basic data about all of the entities and it isn't very useful. For example the current information on tutors or clients are represented by their names (fist, last), one form of contact information, and the preferred location for sessions. They system currently in place doesn't capture all the information that company requires and would like to have access to. Because of this the second system improvement goal is expansion of the data that can be captured by the system and to increase the data's usefulness. The company needs to

have accurate and meticulous records for every location, staff member, tutor, and client. This would allow the company to be very accurately informed about each and every individual location as well as a whole. The expansion of data capturing should include buts is not limited to the following. Locations should have the following data captured location ID, location number, location address, total number of staff, number of staff per department, needed repairs if any, supplies levels etc. Tutors should have the following data captured tutor ID, tutor name, address, various contact forms, subjects tutored, credential (if any), base hourly rate, hours worked, current clients, availability etc. Similar data capturing expansions would apply to staff members and clients. The expansion of the data captured and the increase of its usefulness would decrease the amount of time it takes to request services and make modifications to service requests by 40%.

3) **Problem:** The existing system does not have any abilities that allow it to manipulate any of the data it records.

   System Improvement Objective: Provide the system with data manipulation capabilities. So it can generate statistics of various sorts with various applications.

   A third problem with the existing system is that it has no ability to manipulate any of the data it records. The system can record tutoring sessions and their details but not manipulate them without a user. The system can't mine or use the stored information in any way. Because of this the third system improvement goal is to give the system data manipulation capabilities. The company requires that the system has ability to manage and manipulate the data of tutoring sessions and their details in real time. To achieve this factors like store procedures and triggers would have to be developed and implemented to minimize the need of users for data management, insertion, and capturing. The company would like the system to have data manipulation abilities that would allow the system to generate statistics via the mining of the data captured. The statistics would be generated by the mining of the data recorded by the system. In turn these statistics would be used to allow the company to see how it ranked amongst its competitors. They system would also generate internal statistics to allow the company to gage how successful and effective their services by location are in order to see what locations need to be improved to increase the company`s success and effectiveness. The system would also generate statistics on which location provide the most revenue. This would allow the company to make studies as to why these locations bring in large portions of revenue to see if they can recreate these conditions in the other locations to maximize profits. The system would also mine the tutor data to see how successful each tutor is. This would allow the company to study the methods and best practices of those tutors and in turn have those methods and best practices identified and implemented by other tutors who might not be as successful. The tracking of the successful tutors would also allow the company to reward them accordingly. This would allow the company the opportunity to offer the best possible services with high efficiency. The insertion of the data manipulation capabilities

would lead to the reduction of office staff expenses by 66% and allow the company to maintain its competitive edge.

4) **Problem:** The existing system does not have supplies managing and tracking capabilities or supplier interfaces.

   System Improvement Objective: Provide the system with supply management and tracking abilities. As well as create a supplier interface through which the supplier can check supply levels, submit invoices, provide restocking reports, etc.

   The current system does not have supplies managing and tracking capabilities. The office staff is responsible for managing and keeping track of the supplies sometimes mistakes are made or orders are not placed or placed late which causes supply shortages. Because of this the fourth system improvement goal is to give the system supply management and tracking abilities as well as a supplier interface. The company requires that the system be able to keep track of the inventory of all the supplies for all the locations and to automatically place orders when supplies get low and to keep suppliers notified of supplies levels. The system is also required to capture billing and shipping data. The company wants to pay all of the supply expenses from their administrative office that way they avoid having to track the bills of each individual location and having a tracking system to separate paid and unpaid bills. The implementation of the ability to manage and track supplies into the system would increase efficient and consistency of supplies distribution and consumption by 35%.

5) **Problem:** The existing system does not track or record the state test scores of the individuals who were tutored or prepared for the state examinations by the company.

   System Improvement Objective: Provide the system with tracking and statistical functions for the examination grades.

   The current system does not track or record the state test scores of the individuals who were tutored or prepared for the state test by the company. These scores need to be tracked and recorded into the system so that the company can use these records to assess the quality of the test preparation services being given at their locations. Because of this this fifth system improvement goal is to provide the system with tracking and examining functions for the examination grades. If the test scores are low then either the tutors have to have implement better practices and methods in order to continue with the company or perhaps need to be replaced by more capable or skilled tutors. If test scores are high then the company would like to know in what locations the test scores are consistently high so that they can study the tutoring practices and procedures of the location in order to reproduce them in other location to yield high test results. Tracking the scores of the individuals who consistently received tutoring from the company or prepared for a state

examination through the services of the company would lead to more accurate and incentive advertising which could lead to a revenue growth of 5%.

Requirement Analysis

The new system must consolidated, expand, and manipulate the data from all the company locations, clients, tutors, and staff. The system`s ability to manipulate the data it captures and records will increase accuracy, efficiency, and usefulness of the data. Which will in turn increasing every day revenues, productivity, and company success. In order to achieve this the system will be composed of various client, supplier, administrator, and analytical features.

Client Features

1) **Allow clients to create accounts**
2) **Allow clients to modify in real time their tutoring requests and their aspects**

Two of the client features that the system would be comprised of are the ability to allow the clients to create accounts and manipulate in real time their tutoring requests. The account would serve basic functions such as allowing the client to login in order to receive information, brows the subjects offered, examine tutor profiles, and pay for tutoring sessions. The account would also be the medium through which the client can have their level of ability in a particular subject assessed. Through their account the clients would have the ability to initiate and request tutoring sessions as well as manipulate the details of these sessions in real time. The system would have to allow the clients to request, cancel, and adjust tutoring sessions. The client would request a tutoring session for a particular tutor at a location of choice. Once that has been done the client will need the ability to adjust their session as they need to. In terms of location change, if the client will late, time change requests, session cancelation, tutor substitution should a tutor not be able to make it. The system would have to be able to process thee changes as they happened as well as notify the tutors, clients, and company locations of the changes.

Supplier Features

1) **Give the system the ability to keep track of the supplies of every company location and notify suppliers when supplies are low at a particular location.**
2) **Have a supplier interface which allows suppliers to access to the system so that they can actively check the supply levels at the various company location at their own convenience and submit invoices to the company.**

Two of the supplier feature the system would have to have are the ability to keep track of the supplies for every company location and notify suppliers when supplies are low at a particular location. As well as provide suppliers with access to the system so that they can actively check the supply levels at the various company location at their own convenience and submit invoices. Along with the access to the system the system would also have to allow

suppliers to submit invoices to the company and receive payment for zed invoices all through the system itself. Through these system features the system would be able to track supplies and notify suppliers when they are low in order to have suppliers restock the various locations when needed. As well as provide means for the suppliers to check the supply levels themselves as well as allow them to submit bills to the company and receive the payments for them. The bills should be made to the company its self not to the individual locations which is another feature the system would need the processing and submission of bills. The bills should contain details about which location was restocked but should be made out to the company as a whole to avoid having to track unpaid and paid bills for each and every location.

Administrative Features

1) **Allow tutors and staff members to create accounts which will record relevant and needed information for the business from each individual.**
2) **Allow for routine maintenance and system upgrades with minimalistic effects to the systems performance and the systems services.**

Two of the Administrative features the system would have to have are the ability to create tutor and office staff accounts and allow for routine maintenance and system upgrades. The system would have to be able to allow administrators to create accounts for the tutors and company staff these accounts would be set up to comply with their need and capture the information the company needs from each of them. As well as have the different restrictions that apply to each type of account instated. Another administrative need would be the ability of system administrators to remove significantly inactive or inactive client account so that those accounts do not take up system resources unnecessarily. In terms of maintenance and upgrades the system should allow the administrators to perform routines that keep the system functioning efficiently and accurately as well as allow for upgrades whether they are software or hardware. The system needs to allow administrators to modify or add system software functions to the current system with the most minimalistic effort and time consumption. In terms of hardware the system should allow administrators to add and configure new additions of hardware without disturbing or interrupting the systems daily function and performance.

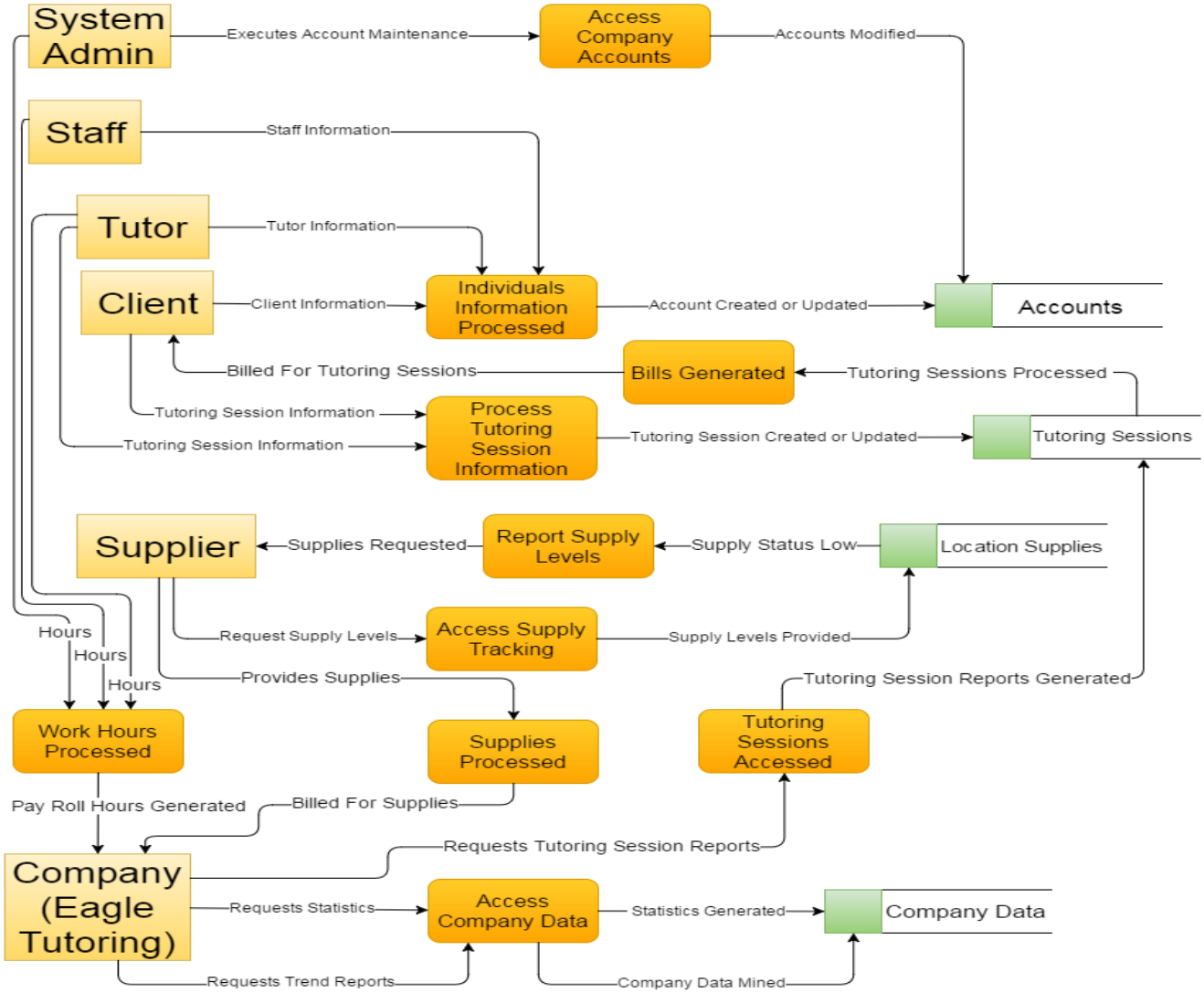
Analytical Features

1) **Give the system the ability to generate statistics from gathered data.**
2) **Give the system the ability to mine the gathered data.**

Two of the analytical features the system would have to have are the ability to generate statistics from the gathered data and to mine the gathered data for tutoring trends. The ability of generating statistics would allow the company so see how it`s doing in several fronts. The system would generate statistics about the success of the various company locations, the success of the company against its competitors, client`s state exam scores, and revenue expectancies and current revenue incomes. The system would mine the recorded data for trends in subjects

requested, tutor success trends, and high service demand trends. All of these statistics and trend recognitions would benefit the company in one way or another and allow the company to improve aspects that are lacking and give the company the opportunity to be able maximize its revenue.

Logical Design



Decision Analysis

Technical Feasibility: the technical feasibility of this information system is very high. The information system does not have features that are difficult to design or implement. However an individual with special expertise in the geography of the country would be required in order to place the company data centers in the most strategic and beneficial locations. The individuals working in the team would not have any difficulty developing or implementing the information system. The most significant aspect of the technological feasibility would be the

location of the data centers. Because the company locations are spread throughout the country the placing of the data centers would be of crucial importance in order to have optimal data transmission speeds. So the data can be transmitted efficiently and quickly between all the locations of the company throughout the country. The use of strategically picked locations for the data centers would enable the company to have the most efficient and quick data transmissions between all the locations in order to avoid data taking too long to reach any given location or the underutilization of the network. Another factor that would be of significance to the technical feasibility of the information system would be the type of cables used to connect all the locations to the data centers as this would also impact the data transmission speeds. Because data transmission speed would be of great concern the cables that would most likely be used would be fiber optic cables.

Operational Feasibility: The operational feasibility of the proposed information system is very high. The proposed information system will meet all the requirements of the company as well as all its wants while retaining the capability to be modified or expanded in order to meet the evolving or new needs or wants of the company. Once the proposed information system is in place the time it take to process service request would decrease, communication between all the individuals involved with the company would increase and thus increasing productivity, cooperation, and efficiency. The proposed information system will go above the expectations of the user as it will not only meet all the requirement and needs but it will also provide a very user friendly interface allowing the user to interact with the system with a higher degree of efficiency and success. Since the proposed information system will be able to evolve in parallel with the companies needs and want its efficiency and usefulness to the company will not degrade over time. The proposed information system would change the user`s work environment in a very positive ways. It would allow the user to become more productive and complete more work in shorter amounts of time. It will also allow the user`s to have an easier time in keeping track and managing records. The proposed information system will also positively affect the interaction between workers and clients as the workers will be able to provide a more efficient and smooth service to the client and in turn that will yield happier clients and in turn cause the employees to be happier and enjoy their work more. The proposed information system will also be able to provide the staff with options they did not have before such as mining the data collected by the system in order to develop the most efficient and successful tutoring practices implemented by certain tutors in order to provide the best service possible to their clients.

Economic feasibility: the proposed information system is very cost effective because while it might take a significant amount of capital and resources to implement. Once the system is deployed it will compensate for the capital spent on it by raising revenues and bringing in more clients and allowing the company to serve an increased amount of clients with a higher degree of efficiency and success. The long term benefits that will be provided by the proposed information system far outweigh the cost of its initial development and implementation. The company would not only benefit in terms of increments in clients and revenues but also in terms

of a healthier work environment for its employees and by gaining the opportunity to constantly improve their company with internal statistics and trend analysis allowing them to remain competitive in their market and in so doing being able to retain and expand their foot hold over the tutoring market.

Schedule feasibility: the proposed information system can be designed and implemented within the time span that was initially given to the project which is a year and a half. During this period of time there would be plenty of time to complete all the steps involved in developing an information system and if all the parties involved are carefully monitored and kept on schedule there would be time which would allow for problems or difficulties to be encountered and resolved while still completing the project within the expected time line. Because ample time is being provided for the system development and initiation any problems encountered along the development or implementation process can be resolved without putting the dead line of the project in jeopardy. Since experienced individual have been hired to work on the development and implementation of the proposed information system any problems or hindering encountered along the way would be resolved in the timeliest fashion possible. The combination of the realistic and ample time frame stipulated for the project and the hiring of experienced personnel for the project will allow the proposed information system to be developed within the given time frame for the project.

Physical Design and Integration

Entity Relationship Diagram

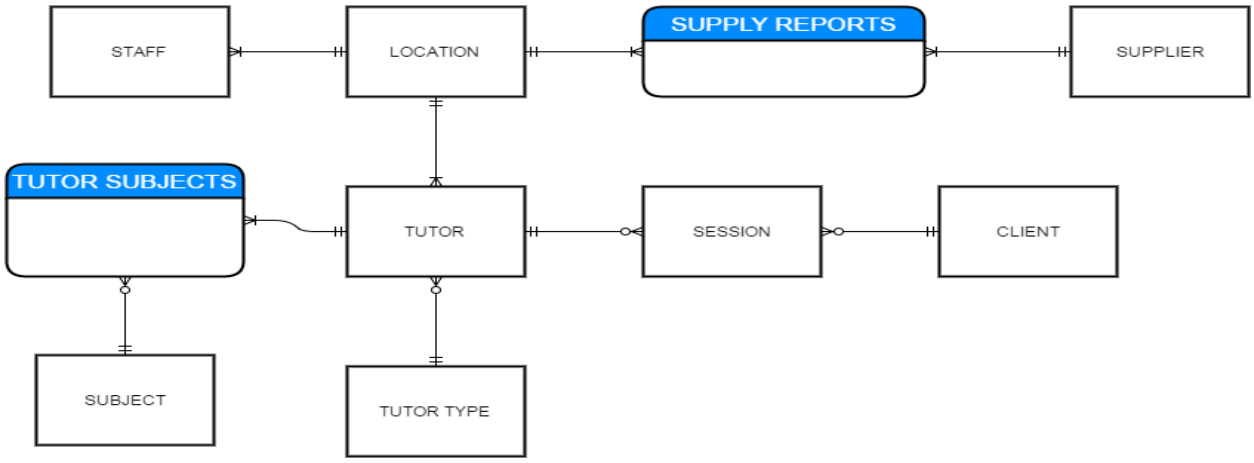


Table Definitions

Client

PK Number Client_id

VARCHAR Name

VARCHAR Address

CHAR (12) Phone Number

VARCHAR Email

VARCHAR Availability

Subject

PK Number Subject_id

VARCHAR Name

CHAR (20) Description

CHAR (13) Complexity

Number Hourly Rate

Staff

PK Number Staff_id

VARCHAR Name

CHAR (20) Department

VARCHAR Address

CHAR (12) Phone Number

VARCHAR Email

CHAR (15) Type

Number Hourly Rate

Location

PK Number Location_id

CHAR (5) Type

Number Number of Staff

Number Number of Tutors

CHAR (2) State

VARCHAR Hours

Session

PK Number Session_id

VARCHAR Tutor Name

VARCHAR Client Name

CHAR (6) Time

CHAR (6) Duration

VARCHAR Subject

Number Rate

FK Number Tutor_id

FK Number Client_id

FK Number Subject_id

Supplier

PK Number Supplier_id

VARCHAR Company Name

VARCHAR Type of Supplier

CHAR (20) Description

Tutor

PK Number Tutor_id

VARCHAR Name

CHAR (10) Type

CHAR (20) Location

VARCHAR Subject

CHAR (10) Subject Proficiency

FK Number Tutor_Type_id

FK Number Location_id

Tutor Type

PK Number Tutor_Type_id

CHAR (10) Type

Number Rate

VARCHAR Degree Type

Number Number of Subjects Proficient In

CHAR (6) Field Experience

Tutor Subjects

PK Number Tutor_Subject_id

VARCHAR Subject

CHAR (20) Subject Description

VARCHAR Tutor Name

FK Number Subject_id

FK Number Tutor_id

Supply Report

PK Number Supply_Repor_id

CHAR (20) Location

VARCHAR Type of Supplier

CHAR (2) State

VARCHAR Company Name

FK Number Supplier_i

FK Number Location_id

Signature Methods

Object ProcessAccountInformation(string)

String UpdateSessionInformation(String)

Number TrackSupplies(Number)

Number ConnectSupplier(String)

Object CreateAccount(String)

Object RoutineMaintenance(Object)

Number ComputeStatistics(Number)

String CompileTrends(String)

Construction and Testing

Tests for Client Features

Two ways in which I would test the first client feature would be the following. My first test would be to try and create an account without any information to see if the account would be created or not. This would let me know if that feature is functioning properly or not because if it is then it should not let me create the account without the information needed. The second way I would test this feature would be by attempting to create an account with the information required. This would test if the feature is working properly because if it is then once one provides the proper information one should be able to create an account. However if the proper information is provided and an account can`t be made then the feature is not working properly and has to be debugged in order to get it to work properly.

Two ways in which I would test the second client feature would be the following. My first test would be to try and modify an existing tutoring session with the exact same information as the one it was created with. If the feature is working properly then it should notify me that the session would not be modified because the information is the same and that no change would take place. If the feature fails to do this then it`s not working properly. The second way I would test it would be by trying to modify a tutoring session that does not exist to see if the system would put the changes through or if it would be able to derive that the changes trying to be implemented are not related to any existing tutoring session. If the feature is working correctly it should notify me that the input information does not match any existing tutoring session and ergo has been rendered invalid. If no such error notification is provided then the feature is not working properly.

Tests for supplier Features

Two ways in which I would test the first supplier feature would be the following. I would make it seem like the supply levels are low. If the information system then notified a particular supplier about the supplies being low and placing an order through then the feature is working

properly. However if the system takes no action then the feature is not working properly and would have to be debugged. The second way I would test this feature would be by trying to place an order for supplies that have high levels. If the system notified me about the levels of the particular supplies which I would be trying to order being high and prompting me about whether I want to continue with the order or not then the feature is working fine. However if the system just went ahead and placed the order then the supply tracking feature would have to be debugged.

Two ways in which I would test the second supplier feature would the following. I would have a supplier try to check the supply levels through the supplier interface. If the supplier is able to be authenticated and the system provides them with the adequate information then the feature is working properly however if the supplier has problems authenticating or checking the supply levels then the feature is not working properly. The second way I would test to see if the second supplier feature is working properly would be by trying to have a supplier restock supplies that have high supplies levels. If the system is working properly then it should notify the supplier that the supplies they are trying to restock are in stock and in good levels and that there is no need to restock them. If the supplier is able to put the order through then that means the feature is not working properly and needs to be debugged.

Tests for Administrative Features

Two ways in which I would test the first administrative feature would be the following. I would have the system administrator try to create several accounts for the various tutors and staff members. If the system administrator is able to make the accounts then the feature is working. However if the system administrator should encounter problems and not be able to create the accounts or the account are created improperly then the feature is not working properly and needs to be debugged. The second way I would test the first administrative feature would be by having the administrator try to make accounts with insufficient information and no information at all. Since having account with insufficient information or no information at all would create data inconsistencies the system should not allow this to happen in order to safe guard the data consistency. If the system administrator is able to make the account using incomplete information or no information at all then the feature is not working and needs to be debugged.

Two ways I would test the second administrative feature would be the following. I would have the system administrator try to run some account maintenance to remove accounts with no activity. If the system administrator is able to remove the accounts then the feature is working properly. However if the system administrator can`t delete accounts then the feature is not working properly and needs to be debugged. The second way I would test the second administrative feature would be by having the system administrator perform some software system upgrades. If he can do so without the system failing or there being a significant service interruption or system malfunction then the feature is working properly. However if a significant

service interruption should occur or if the system should fail during the software upgrade then the feature is not working properly and would have to be debugged.

Tests for Analytical Features

The two ways I would test the first analytical feature would be by having the system try to generate some statistics. If the system is able to generate the statistics then the feature is working properly. However if the statistics cannot be generated then the feature is not working properly and needs to be debugged. The second way I would test the first analytical feature would be by having the system try to access the company data which it would need to access in order to generate statistics. If the system is able to access the company data then the feature is working fine. However if the system cant access the company data then the feature is not working properly and needs to be debugged.

The two ways I would test the second analytical feature would be the following. The first test I would implement would be if the system can access the company data which it needs access to if it`s going to mine the data to find trends. If the system can access the company data then the feature is working properly. However if the system cant access the company data then the feature is not working properly and needs to be debugged. The second way I would test the second analytical feature would be by having the system try to generate some trends. If the system is able to generate the trends then the feature is working fine. However is the system can`t generate the trends then the feature is not working and needs to be debugged.

Installation and Delivery

Each of the features of the proposed system are meant to be implemented and carried out in order to increase productivity, efficiency, and cooperation between the various individual involved in either providing the services or consuming the services. The client feature enabling them to create accounts is meant to be implemented so that clients can access the company's services with more independently and with greater ease. Once the clients create their accounts they don't have to go to the physical locations of the company in order to request services or be inserted into the company system. They can do all of that and more from the comfort of their home or location of choosing simply because the account client feature provides greater access to the companies services. Because of the account client feature the company no longer has to worry about keeping records for each client because they system does that.The client feature enables clients to modify their existing tutoring sessions with ease and lowers the cancelation rate of sessions because of incompatible scheduling. Because all parties can remain informed in real time everyone is aware of what is happening making the method of providing services more client oriented. This not only makes the client happier and content with the services offered by the company but it also increases the amount of clients the company has.

The supplier features greatly help the company be always well stocked and with the latest versions of all the materials. The supplier feature enabling the system to track supply levels and

submit orders to suppliers when supplies get below a certain level ensures that each and every location is well stocked and able to provide their client with current tutoring material that will provide them with the most beneficial tutoring experience. This feature also removes supplies inconsistencies caused by human error and forgetfulness. The supplier feature enabling suppliers to be proactive and check the companies supplies themselves provides more reliability in them and creates longer lasting productive relationships between suppliers and the company. Over all when the supplier features are implemented they will provide the company with less supply shortage problems and will allow the company to provide a quality service their clients can appreciate and learn to depend on.

The administrative features will provide great dependability in the system. Because maintenance will be able to be performed with minimalistic service interruptions. The system will be able to be services and still remain in use by the clients and the company. With the exception of certain heavy resource demanding procedure such as backing up which will be done during off hours. The fact that the system will receive constant maintenance will increase the life of the system before it has to be redeveloped. The maintenance will keep the system working at optimum performance so that the clients can receive services from the system in the most efficient and productive way. The administrative feature of managing accounts will keep the optimal amount of resources available for all the users since the account that are to being utilized and are just consuming resources will be removed. This will lead to resources being utilized to their full potential. The system upgrade and expansion administrative feature will provide a greater life cycle for the system since the system will be able to evolve with the company and continue to meet its needs as they change or increase. This is a great feature as it will provide along sense of dependability in the system.

The analytical features provided by the system will be of most benefit and utility to the company. The statistic generating analytics feature will provide the company with ability of great internal and external insight. The statistic feature will allow the company to see how it`s staking against its competitors. If the company is not where it wants to be the statistics feature could provide a guide as to what improve or what is lacking. This feature will allow the company to grow in numerous ways and can only serve to benefit the company. The trend generating analytic feature will provide greater internal insight for the company. It will allow them to better their services by generating trends on which locations are the one in most demand and the studying their practices to implement them throughout the rest of the company locations. This feature will also allow the company to study trend amongst their tutors to see which one are in highest demand and what their tutoring methods are in order to implement them in the other locations. Not only will the trend feature allow the company to learn a great deal about its self and in doing so lead the company to implement the best tutoring practices possible to provide tutoring services of the outmost quality. It will also help the company reward it`s employees for their outstanding services and work. This will create a better work environment and will instill a sense of loyalty from the employees towards the company as the company wouldn’t let their hard work

go unnoticed. Over all the analytic feature when implemented would allow the company to thrive and improve in numerous ways.