

Comm 436 Project

SEEDS Streamlining Administration

Final Report

Clara Yuen
Rodge Uy
Katherine Ng
Edmond Shin

April 12, 2008

Dear Ms. Brenda Sawada:

We have greatly welcomed the opportunity to work on the SEEDS Streamlining process with you. Having studied the materials you supplied, we have a better understanding of what needs to be done to accomplish your goals. Enclosed within this report are both the analysis of your current work systems and practices, and the details of our recommended solution.

You will find all our recommendations involve streamlining currently-employed technology and software, so the brunt of the cost will be borne by additional staff training, and the hiring specialists to modify the more complicated aspects of the current work systems (i.e.~ modifying the access database).

It has been a pleasure working for you, and look forward to working with you again in the future. If you have any questions with the contents of this document, please feel free to email us for clarification.

Respectfully,

**Clara Yuen
Edmond Shin
Katherine Ng
Rodge Uy
Comm 436**

Table of Contents

0.0 Executive Summary.....	4
1.0 Purpose of Document.....	5
2.0 Background.....	5
3.0 Objectives and Scope of the Project.....	5
3.1 Objectives.....	5
3.2 Scope.....	5
4.0 Main Project Activities.....	5
4.1 Weekly Meetings with Brenda Sawada and her Staff.....	5
4.2 Internal Student Conferences.....	5
4.3 Choice of systems development method.....	6
5.0 Information Sources.....	6
5.1 Stakeholders.....	6
5.2 Internal Documents.....	6
5.3 External Information.....	6
6.0 Special Consideration.....	6
7.0 Findings.....	6
7.1. The Organizational Environment.....	6
a. The Organization: UBC SEEDS.....	6
7.2 The Information System and Use of Information Technology.....	10
7.3 Planning.....	12
8.0 Alternatives, Recommendations, Feasibility, Implementation.....	13
8.1 Work Practices.....	13
8.1.1 Sending Thank You Cards, Recognition Letters, and Memos.....	13
8.1.2 “Summary Project and Stats” Document.....	14
8.1.3 Annual Summary Report.....	14
8.1.4 Project Identification.....	15
8.2 Participants.....	15
8.2.1 Documentation and Training in Access.....	15
8.3 Technology.....	15
8.3.1 Upload projects onto the MySQL database.....	15
8.3.2 User Interface for Access Forms.....	16
8.3.3 Compiling feedback forms and feedback data entry.....	19
Appendix.....	21

0.0 Executive Summary

Since its inception eight years ago, SEEDS has been using a non-integrated administration system composed of an Access database, Mail Merge templates, administrative task summaries, handwritten documents, and other non-automated processes. This legacy administration system has been rendered obsolete by the increased number of projects, and our recommended solution involves streamlining the current work systems through the following streamlined practices:

- Mail merging directly from Access to Word Documents
- generating reports from Access showing which projects still need their recognition materials to be sent out and the deadline
- scheduling important milestones by Windows Works Calendar
- defining a unique primary key to identify projects, increased training and documentation with the database
- Keeping the online and access databases separate, but redesigning the access database to match the format of the online database
- Using input masks to standardize user input
- Including student numbers to uniquely identify students
- Gradually transition from paper feedback forms to excel spreadsheets

1.0 Purpose of Document

This document outlines the project objectives, scope, activities, constraints, analysis, and recommendations. It presents the processes and work system that we studied along with problems with the work system, alternative feasible solutions, and recommended solutions. Ultimately, this document is meant to provide useful guidance for SEEDS.

2.0 Background

Since its inception eight years ago, SEEDS has been using a non-integrated administration system composed of an Access database, Mail Merge templates, administrative task summaries, handwritten documents, and other non-automated processes. This legacy administration system can no longer keep up with the increase in SEEDS projects and is obsolete. The staff at SEEDS using the non-integrated administrative system can no longer keep up with the increased workload. Our group recommends changes to the work practices, participants, and technology in SEEDS to streamline the administration system so it can handle more projects.

3.0 Objectives and Scope of the Project

3.1 Objectives

Our objective is to analyze the current system and consider integrated and streamlined alternatives to the legacy system.

3.2 Scope

This project involved using the work system method to analyze the administration system of SEEDS. This involved identifying the system and problems, analyzing the system to identify possibilities, and making and justifying recommendations.

4.0 Main Project Activities

4.1 Weekly Meetings with Brenda Sawada and her Staff

At each meeting we elicited requirements and validated our understanding of the SEEDS administration system. We also reported our progress to update Ms. Sawada on our project status.

4.2 Internal Student Conferences

At each internal student conference we reviewed the topics discussed in the weekly meetings with SEEDS. We discussed possible solutions to address the problems with the SEEDS administration system

and prepared the interim report, final report, and class presentation. We created models to better understand the as-is work system. These models served as good communication tools with SEEDS. We also created to-be models to document our recommendations to resolve the identified problems in the as-is work system.

4.3 Choice of systems development method

We have chosen to use the waterfall model for developing the new system. The only IT object that needs to be developed is the database. The waterfall model ensures a finished database in a timely manner. It provides a structured framework that is easy to follow.

5.0 Information Sources

5.1 Stakeholders

The stakeholders of this work system include Ms. Brenda Sawada (manager, SEEDS program), Anke Sieb (coordinator, SEEDS program), and the students and faculty members involved in SEEDS projects.

5.2 Internal Documents

Internal Documents we used include: Student Registration Form, Permission to Publish Form, Recognition Letter, Feedback Forms, Administration Task Summary, Summary Project and Stats Word Document, Contact Sheet, Policy Handbook, and Templates for labels and recognition letters.

5.3 External Information

Some external information came from the SEEDS library of past projects and previous UBC Sustainability Reports.

6.0 Special Considerations

One consideration is that the SEEDS staff prefers technology that is easy to use. Another is that the SEEDS staff is only available three days a week. Also, SEEDS is working with a small budget and recommendations must be economical.

7.0 Findings

7.1. The Organizational Environment

a. The Organization: UBC SEEDS

Products and services

SEEDS organizes projects that address sustainability issues. This involves finding project opportunities (known as “dormant projects” and “seed projects”), registering staff, faculty and students into initiated

projects (known as “sprouting projects”), following the progress of each project, writing reports, and analyzing feedback.

Short history

In 2000, UBC launched western Canada’s only academic program bringing together students, faculty, and staff in projects that address sustainability issues. To date SEEDS has saved the university hundreds of thousands of dollars and attracted thousands of participants. Some past projects include studying storm water treatment alternatives, finding innovative ways to market Fair Trade coffee, finding new ways to reduce pesticide use, and exploring a sustainable food system for the campus.

Important measures

- For the organization: number of projects (set a goal, say, of 80 projects in progress per year and 50 completed per year; the more money that SEEDS helps UBC save, the more funding SEEDS gets from the Sustainability Office), number of participants
- For the administration system: time it takes to generate annual report, number of data entries made in an hour, reliability of system, how close it is to SEEDS’ needs (ease of usage, quality of output), completing tasks within two months of project completion

b. The Environment

SEEDS operates in a non-profit, university environment focused on sustainable development. Its projects focus on the sustainability of campus facilities. The customers of SEEDS are the faculty, staff and students, who also supply each project’s manpower and knowledgebase. SEEDS is one program operating under the UBC Campus Sustainability Office (CSO). The CSO provides the vision behind SEEDS.

c. The Functional Area under Study

Short description

The functional area under study is SEEDS’ administration system. Among other objectives, the study is to find ways to administrate more SEEDS projects under current constraints. This involves finding ways to monitor project statuses (active/ dormant/ finish) more easily and creating annual reports from the database more easily. The customers of this study are the SEEDS manager and coordinator. The stakeholders of this study are the SEEDS manager, coordinator, and the students on the study team.

Principles of operation

The two users are SEEDS Manager Brenda Sawada (BS) and SEEDS coordinator Anke Sieb (AS). Both have full access to the SEEDS administration system. One principle procedure in the administration

system is Anke entering data into the Access database. Procedures depend on Brenda and Brigid (previous SEEDS coordinator).

There is a procedures handbook but it is not detailed enough with which to train someone.

Resources

Administration system resources include the human resources (SEEDS staff, students, faculty) and the financial resources.

Observed Problems or Requirements

- SEEDS staff give projects one name while students give it another leading to multiple project names
- administration system cannot keep up with increasing number of projects
- repetitive tasks that could be eliminated
- behind in schedule on recognition letters, thank you cards, and collecting feedback
- annual report of SEEDS projects hand-calculated by manager (time-consuming)

d. Important Relevant Business Processes

i) Project generation and project sponsor seeking

The objective is to come up with ideas for projects without initiating them (“dormant” projects) and to find interested staff/faculty/students without committing them to the project yet (“seed” projects). The main activity is to respond to requests for projects by contacting staff/faculty/students about the potential project. The main procedure involves keeping track of “dormant” and “seed” projects using the “contact sheet”, “project registration form”, “admin tasks” summary, “summary project and stats”, and database. The main resources are Brenda and Anke. Related processes are in the Policy Handbook and one related system is the communication system. One performance measure that we perceive is the goal of updating the following within the same week: “contact sheet”, “project registration form”, “admin tasks” summary, “summary project and stats”, and database.

ii) Project Commitment Seeking and Project Initiation

The objective is to confirm the commitment of staff/faculty/students to the project, to clearly communicate expectations, and to initiate the project (“sprouting” project). Some activities include registering the project (Student Registration Form, Permission to Publish Form, Project Registration Form), meeting with staff, faculty and students, and reviewing with staff, faculty, and students their

commitment. For example, students are to “submit project and project summary to Campus Sustainability Office electronically within two weeks of project completion.” The procedures include entering information from the Project Registration Form, the Student Registration Form, and the Permission to Publish Form into the database and updating the database, the “admin tasks” summary, the “summary project and stats” document, and the “contact sheet.” The main resources are Brenda and Anke. Related processes are in the Policy Handbook and one related system is the communication system. One performance measure that we perceive is the goal of updating the following within the same week: “contact sheet”, “admin tasks” summary, “summary projects and stats”, and database.

iii) Project Monitoring

The objective is to monitor the status of the project while it is underway and liaise between staff, faculty, and students while they work on the project (“flowering” project). The main activities include attending meetings, monitoring emails, and responding to requests. The procedures include updating the “admin tasks” summary, the “summary project and stats” document, the “contact sheet”, and the database. The main resources are Brenda and Anke. One performance measure that we perceive is the goal of updating the following within the same week: “contact sheet”, “admin tasks” summary, “summary project and stats”, and database.

iv a) Project Wrap-up

The objective is to provide recognition to staff/faculty/students, to catalogue project papers, and to collect feedback from staff/faculty/students (“awaiting report” or “completed” stages of project). The main activities include attending final presentations, preparing each letter of recognition and mailing labels, sending thank you cards to staff/faculty/students, letters of recognition to department heads, instructors, and deans, memos to the Vice Provost and Associate Vice President of Academic Affairs, and updating the SEEDs and online libraries. (Cataloguing sub-process shown below.) The main procedures include updating the database, “admin tasks” summary, “summary project and stats” document, “contact sheet”, labels, and recognition letters. The main resources are Brenda and Anke. Related processes are in the Policy Handbook. One performance measure that we perceive is the goal of updating the following within the same week: “contact sheet”, “admin tasks” summary, “summary project and stats”, and database. Another performance measure is that the labels ought to be updated and recognition cards and letters ought to be sent within two months of project completion.

iv b) Project Cataloguing

The objective is to categorize each project and file each project in the SEEDs Library and on the SEEDs website. The main activity is categorizing each project. One main procedure involves creating an index and cover page which ought to include the following: Title of Publication, Year, Student Authors, Course Number and Name, Faculty/Instructor. See also “Library Cataloguing Checklist” and “Website Cataloguing Checklist” in the Protocols Handbook for more details. Another procedure is updating the database, the “admin tasks” summary, the “summary project and stats” document, the “contact sheet”, and the SEEDs and online libraries. The main resources are Brenda and Anke. Related processes are in the Policy Handbook. The performance measure is that projects ought to be catalogued and filed by January and June of each year.

iv c) SEEDs Program Evaluation

The objective is to find out if SEEDs is contributing to sustainability at UBC. The main activity is the SEEDs manager sending out and collecting feedback forms from at least one of each: staff, faculty and student from each project. The SEEDs manager will use this data to “create an annual triple bottom line report.” The main procedures include updating the database, the “admin tasks” summary, the “summary project and stats” document, the “contact sheet”, and feedback forms, and converting feedback form responses into an electronic format. The main resources are Brenda and Anke. Related processes are in the Policy Handbook. One performance measure that we perceive is the goal of updating the following within the same week: “contact sheet”, “admin tasks” summary, “summary project and stats”, and database. Also, the feedback forms ought to be sent, collected, and responses converted into electronic format within two months of project completion. Lastly, the feedback form ought to be collected from at least one of each: staff, faculty, and student from each project.

7.2 The Information System and Use of Information Technology

a) Main IT applications

MS Word The objective is to keep track of “summary projects and stats”, the protocol handbook, the process mapping document, administrative tasks, registration forms, recognition letters, labels and feedback forms. The main users are Brenda and Anke. Inputs for label and recognition letters come from a related Excel spreadsheet. The main technologies are LAN (shared hard drive), PCs, and MS Word.

MS Excel The objective is to keep track of “contact sheets”, admin tasks, recognition letter mail merge details, labels mail merge details, and feedback form responses. Brenda and Anke use this application. The input for feedback form responses comes from completed feedback forms. The main technologies are LAN (shared hard drive), PCs, and MS Excel.

MS Access The objective is to keep a database about: students, instructors, staff, project status description, category descriptions, and project attributes. This data will be updated and retrieved regularly. Anke is the user. Student information comes from the Student Registration Form. Instructor and staff information comes from the Project Registration Form. Project attribute information comes from Student Registration Forms, Project Registration Forms, Permission to Publish Forms, and emails. The main technologies are LAN (shared hard drive), PCs, and MS Access.

MS IE The objective is to liaise between staff, faculty and students. Another objective is to catalogue project papers. The cataloguing website is new and involves MySQL. Anke is the user of IE. The developer (now gone) used MySQL. Anke posts completed projects to the website. The main technologies are LAN (shared hard drive), PCs, MS IE, and MySQL.

b) Evaluation of Existing System

The work system we have analyzed is the UBC SEEDS administration system. On the one hand, the current system does not involve implementation costs, Brenda and her coordinators are already trained with the system, and this system is flexible enough to adjust. On the other hand, there are problems with the work practices, participants, and technology parts.

The problem with the work practices is that, though Brenda and her staff know and want to follow the work practice, they cannot follow them due to limited time and resources. The current system cannot handle all the projects this year. Steps like updating the student information on the database, collecting feedback, sending out thank you cards, and updating the SEEDS library have been postponed.

Another problem is the repetition of information in digital and paper forms. This leads to inconsistencies during the conversion of data from paper to digital forms. The problem is that, though Microsoft Access, Excel, and Word have integration capabilities, the three programs are not used to their full extent. Other easily automated tasks, like calculating the number of people involved in SEEDS projects for the annual report, are done manually.

Reproducibility is also a problem as the current work system is not well documented and the available documentation is outdated. Steps in the work system are remembered. New staff cannot train

themselves based on the documentation. This is a problem since SEEDS coordinators turn over frequently.

Relating to the technology and work practice parts, there is no technology to integrate the online MySQL database with the internal Access one. The two databases contain similar information. Also, the Access database lacks input controls that would allow for easy integration.

The administration system requires flexibility (so it can handle changing projects), ease of operation (as only two people operate it), efficiency (so the SEEDS staff can organize more projects instead of administering them), and affordability (as SEEDS has a modest budget).

c) Constraints to Consider

Project confidentiality is determined by the participating students and faculty. They are permitted to request that their project be kept confidential so only the project abstract is revealed on the SEEDS library. Additional constraints are in the Administrative Policy Handbook which is given to every SEEDS staff member.

7.3 Planning

a. Some Possible Solutions to Explore

- Keep track of each project's status in the database without using the Project Summary and Stats document. This would mean creating a form for the manager to change/view the project status. This eliminates the MS Word documentation that the SEEDS manager uses, which requires copying and pasting.
- Use a scheduling system to keep recognition letters and thank you cards on schedule. One idea is to use an email system with a calendar or notification service.
- Database should track updated details about each project, including money spent, staff and students involved, etc. An annual summary report of SEEDS projects can then be generated on the fly. Note that someone or a systems procedure is needed to keep database up to date.
- Hire more staff whether for full time, part time, or voluntary. More staff means more productivity, but also a higher cost and more training.

b. Planned activities and products

Planned Activities: Allow stakeholders to use electronic forms instead of paper forms (e.g. Student Registration form). This eliminates data entry for the SEEDS staff but requires forms with input controls.

8.0 Alternatives, Recommendations, Feasibility, Implementation

The redesign of the Access database must occur, before following the steps below. The prototype of the Access database and static queries have been created as an example.

8.1 Work Practices

8.1.1 Sending Thank You Cards, Recognition Letters, and Memos

The preparation of thank you cards, recognition letters, and memos (recognition materials) require a lot of labour for preparing labels and performing mail merge and there is no accompanying reminder system.

Firstly, the staff sometimes copies data from Access into Excel before finally performing a mail merge into address labels and Word documents. (Apparently, the user already knows how to mail merge into address labels. There just is not any documentation for the next user to follow.) One alternative is to avoid preparing address labels by emailing recognition materials instead of mailing them. However, this is unacceptable as it is too impersonal. **The recommended alternative is to mail merge directly from Access to address labels and Word documents.** This is feasible as our group has found ample instructions that are easy to follow and learn, and free to download.

(For example, <http://www.leeds.ac.uk/iss/training/mailmerge/MailMerge.pdf>) Implementation would only take a few moments to review the instructions. There are more sources of information for using Access in the Appendix.

Secondly, although there is an “admin tasks” summary it does not perform well as a reminder system that specifies which project needs its recognition materials sent out by which date. Recognition materials ought to be sent out within two months of project completion. **The recommended alternative is to generate a report from the Access database showing which projects still need their recognition materials to be sent out and the deadline.** This is feasible as it could be implemented during the implementation of other functions of the database with little extra cost and effort. The person handling changes to the database need only set up a query and report and provide documentation for the client to follow. The coordinator could remember to generate the report monthly by including the task in her “admin tasks” summary document. **We recommend using the Windows Works Calendar program.** It is easy to use and comes with Microsoft Windows.

A startup tutorial is available at:

<http://www.learnntc.com/tools/GettingStarted/returningStudent/returningAdultWorks.cfm>

There is additional information from the Microsoft webpage: <http://support.microsoft.com/kb/270861>

The 'Help' function within the program will also be helpful.

8.1.2 "Summary Project and Stats" Document

The "summary project and stats" document includes the manager's notes about certain projects, the phase of each project the manager would like to keep track of, and certain completed projects. The manager manipulates this document by copying and pasting notes from one cell in a table to another. One alternative is to keep the status quo. This is because the information stored in the "summary project and stats" document is organic and fluid in nature so it may be difficult to generate computer reports that truly replicate this. Since SEEDS has expressed distaste with the unwieldy nature of this document, **our group recommends using reports generated from Access**. Since we will be recommending changes to the Access database elsewhere as well, it would be convenient now for the person handling changes to the database to also set up a query and report that resembles the "summary project and stats" document as closely as possible.

8.1.3 Annual Summary Report

The manager currently calculates this manually. **Our group recommends the following implementation** because it would be convenient to make this change along with the other changes that we discuss.

1. Create a form that accepts the academic year as a parameter. It should be a drop-down list of valid values.
2. Create a query that uses this input to generate the data for the summary report for that particular academic year.
3. Click on the 'Generate Report' button on the form to get query results.
4. Click on "File" > "Export..." Then, save as an Excel document. The results of the query will be stored in this Excel document.
5. Format this report in Excel as you please.

The report has the following fields:

Access Table	Access Field	Field Description
Project	PID	project identification number
Project	ProjectTitle	name of the project
Project	AcademicYear	Academic year project was finished

Project	STID	Status of project
N/A	NumberOfStaff	<generated dynamically>
N/A	NumberOfStudent	<generated dynamically>
N/A	NumberOfFaculty	<generated dynamically>

8.1.4 Project Identification

SEEDS identifies projects by name, which tend to change. The status quo is to simply change the title across all records each time the title changes, leading to update inconsistencies. **The recommended alternative is to use an unchanging project number with changing project titles.** Participants can refer to the project number in their communications with SEEDS, and staff can change project titles via the accompanying project number. This is feasible as it is already a feature implemented in the database. The client only needs to provide participants with their respective project numbers.

8.2 Participants

8.2.1 Documentation and Training in Access

There is currently no documentation on the way users interact with Access to perform tasks that is meant for the end-user. **Those with working Access knowledge should document the way they use Access.** When staffs leave SEEDS new staff will be able to perform tasks by referencing the documentation instead of having to relearn the steps.

We also recommend that Access users seek out and receive training to increase familiarity. UBC provides Access online tutorials at: <http://www.slais.ubc.ca/COURSES/libr500/07-08-wt1/t5.htm> Working through the tutorial will increase the participants' knowledge and interest in Access.

8.3 Technology

8.3.1 Upload projects onto the MySQL database

The status quo is not feasible as the client specifically requested this additional function. One alternative is to store all the information on the MySQL database. This is not feasible because the client is concerned with the security of personal information online. **The recommended alternative is to keep the two databases.** This would take approximately six months and cost \$31,250 to \$44,750 for a professional database developer and \$18,000 for a graduate student database developer. To implement this, the data in Access must be cleaned up to fit into MySQL fields. For example, whoever handles the changes for the databases must remove the extra spaces in front of participant names and add fields

categorizing each project under multiple categories. Once the Access database and its data are ready, the developer needs to prepare queries in Access to retrieve the necessary project information and store it in a comma-delimited file before uploading the data to MySQL. The designer must prepare instructions for the end-user to perform these tasks as well. Although the client requested one button that can perform these tasks transparently, we have not yet found a way to do this. Perhaps the developer would know how to implement this.

8.3.2 User Interface for Access Forms

The client should include features in the database to ensure data entry integrity and consistency. Otherwise, errors would propagate onto the MySQL database. **For example, input masks or data format examples would ensure that data is consistent across all records.** There ought to be a way to prevent multiple student records. One alternative is to ask students whether they have worked with SEEDS before. If they have, then the data entry person would know not to add another record. If they have not, however, then the data entry person may still need to waste time looking for a possibly non-existent record (as she must currently do) in case the student actually has worked with SEEDS before. Thus, **we recommend the use of student numbers.** (The sample implementation below for searching for existing students does not take into account this recommendation yet.) The client expresses concerns about security and privacy implications with this alternative. **Our group recommends that SEEDS quell security and privacy concerns in students by making a statement of confidentiality during registration.** It is imperative that there are no erroneous or multiple entries so errors do not propagate to queries, reports, or the MySQL database.

Here are some points to consider when implementing the Access Forms:

- 1) All fields on the forms should have input controls whenever applicable. Examples include entering the date and telephone number in a specific format.
- 2) In the case where it is found to be too much of a hassle to create input controls, a guide should be shown as an example of how to fill out a field. For example, next to a 'Date' field, we would have '(dd/mm/yy)' so that all dates are entered in the same format for data consistency in the database.
- 3) Some database fields consist of different parts. E.g. The address field. In the form, instead of showing just an Address field, there should be an Address section with the following fields:
City, Province, Country, Unit #, Street #, Street Name, Postal Code
- 4) Easy to use search functions can be implemented easily on the form.

5) Queries should take input from form to generate dynamic data.

Here is a sample implementation of the forms:

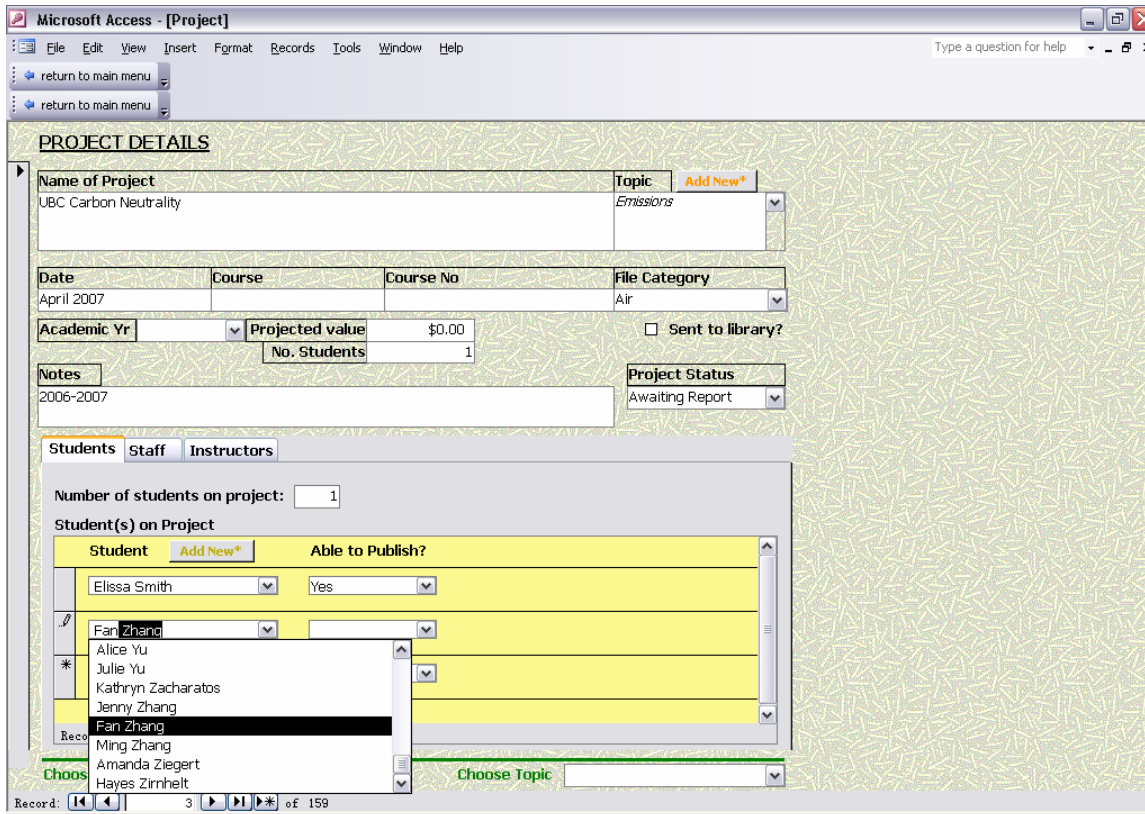
1) Student Registration Form

Form Field	Access Table	Access Field	Field Type	Note
Project Name	Project	ProjectTitle	Chosen from drop-down list of project names already in Access.	Need to have entered a staff/faculty involved in a project first (because project cannot exist in database unless it has at least 1 participant in the db)
Instructor (i.e. Faculty)	Participant	FirstName + " " + LastName	Chosen from drop-down list of faculty members in Access.	This faculty is already in the database. Otherwise, must enter information about this faculty.
Student Information				
Student First Name	Participant	FirstName	Textfield (up to 50 characters)	Before entering a new student, should use the search form to ensure this student does not exist already.
Student Last Name	Participant	LastName	Textfield (up to 50 characters)	
Team Leader	Project	StudentTeamLeader	Checkbox	This field cannot be in Student or Participant table because it's specific to a project
Gender	Participant	Gender	Checkbox	
Unit #, Street #, Street	Participant	Address	Textfields: Unit #, Street #, Street	Concatenate the form fields

Name, City, Province, Postal Code Country			Name, City, Postal Code (with input control if assuming Canada only), Country Drop-down list: Province (if assuming Canada only). Otherwise, textfield.	with spaces in between to create address.
Phone	Participant	PhoneNo	Textfield with input control.	
Fax	Participant	FaxNo	Textfield with input control.	
Email	Participant	Email	Textfield (possibly with input control – e.g. must have '@' and '.'.	

2) Search Student Form

When this form is opened, all students in the database appear in the drop-down list. The student shows up in the format 'LastName, FirstName' from the Participant table. Much like the previous system's "Project" form when adding a new student. Note that for this example, I've only typed in "Fan". Please see screenshot:



In this search form, if a student with the same name already appears in the database, then SEEDS staff should choose this student. Then, click the “Show Student Information” button to see the student’s information. Then, compare this student’s information with the student that you wish to enter.

Furthermore, if the Access GUI mapped more closely to the paper forms then the data entry person would be less likely to enter data into the wrong fields (for example, course subject and course number are often in the wrong fields).¹

8.3.3 Compiling feedback forms and feedback data entry

Data entry and analysis of feedback that the client does collect is also behind schedule. This is because the data entry of feedback is unwieldy and the analysis functions of Excel are difficult for the client to use.

To speed up the process of data entry one alternative would be to email the actual Excel spreadsheet to participants. This may be awkward for participants to fill out, but it would reduce data entry. The ideal alternative is to use survey software. This reduces data entry and provides a better user interface,

¹ See Appendix for Recommendations for Changing Forms

which may increase feedback response. SEEDS could send out email reminders to participants as well. An online survey program may also provide analysis tools that are easier to use than Excel. Both SurveyMonkey and Zoomerang have analysis functions and allow exporting data into Excel or Access, but cost \$200 and \$350 per year, respectively. The best survey software is phpESP or LimeSurvey which are open-source and free. However, installation and set up will incur a one-time cost of approximately \$100 to \$300 and take a week.² SEEDS can set up the actual feedback forms on its own or with paid help. The makers of phpESP and LimeSurvey claim that non-technical users can create feedback forms on their own.

As it may not be feasible to implement the ideal alternative, **we recommend that SEEDS continue with the status quo and in the near future send out feedback forms in the Excel format it will eventually use for analysis purposes.** This is the easiest and least expensive alternative to implement. However, as SEEDS grows beyond the 90 or so feedback forms it receives annually, it may want to install a system (like phpESP or LimeSurvey) that is more scalable and automated.

A related issue is the amount of time SEEDS spends on entering data from the Project Registration Forms, Student Registration Forms, and Permission to Publish Forms into the Access database. If participants could complete these forms electronically, SEEDS could reduce the time it spends on data entry. One alternative would be to have participants fill out the forms in Excel format. SEEDS could ask participants to provide one Excel file, leaving it to the participants to decide on how best to compile such a spreadsheet. The ideal alternative is to set up open-source survey software to also collect project, student and permissions to publish data. The data entry person would only need to import the data into Access. However, this requires one-time set up costs. Furthermore, the client does not want personal information stored online. **Our group recommends that SEEDS continue with the status quo and in the near future use Excel to collect data instead of the paper forms.** For projects involving many participants, paper forms make the logistics of collecting data much simpler. Eventually, the client will need to set up the Excel spreadsheets so data will import into Access properly and will need instruction into the procedure. The only issue that is still pending is the legal equivalency of electronic acknowledgement to a physical signature.

² <http://www.getafreelancer.com/projects/PHP/Need-modify-enhance-phpSurveyor.html>

Appendix

Recommendations for Changing Forms

The client must also redesign its forms (paper, Word documents, Excel or otherwise) so that participants fill them out completely and correctly. This will take little of the client's time and will provide much benefit. Firstly, the forms must have the same fields as the Access database. For example, the client ought to replace "address" with address, city, province, postal code, and country. Instead of "name" the forms ought to request the participant's proper or legal first name and last name. Instead of "course number" the forms ought to request the course subject and the course number.

Secondly, the forms also should provide masks and prompts. For example, the postal code field could have two sets of three boxes so participants do not use a hyphen. This ensures the data entry person enters all postal codes without hyphens. To prompt participants to provide their course subject and number, the forms could have a small note beneath the field: "e.g. COMM 436".

Lastly, the student registration forms ought to ask students for their student numbers. This prevents the data entry person from entering multiple records for the same person by more easily checking the database for a previous record. This saves time and is more reliable than looking for records by name. If the name is spelt differently or is a different version of a name or if there was an extra space in the name to account for a title, the search comes back with a false negative. It is very important to ensure that the data in the Access database is free of errors as the client wishes to transfer data to the MySQL database and our recommendations involve generating queries and reports. Errors in the Access database will propagate to the MySQL database and may inhibit the transfer of data.

Tutorial Links

Microsoft Works Calendar

Get Started Guide:

<http://www.learnntc.com/tools/GettingStarted/returningStudent/returningAdultWorks.cfm>

Additional Information:

<http://support.microsoft.com/kb/270861>

Microsoft Access

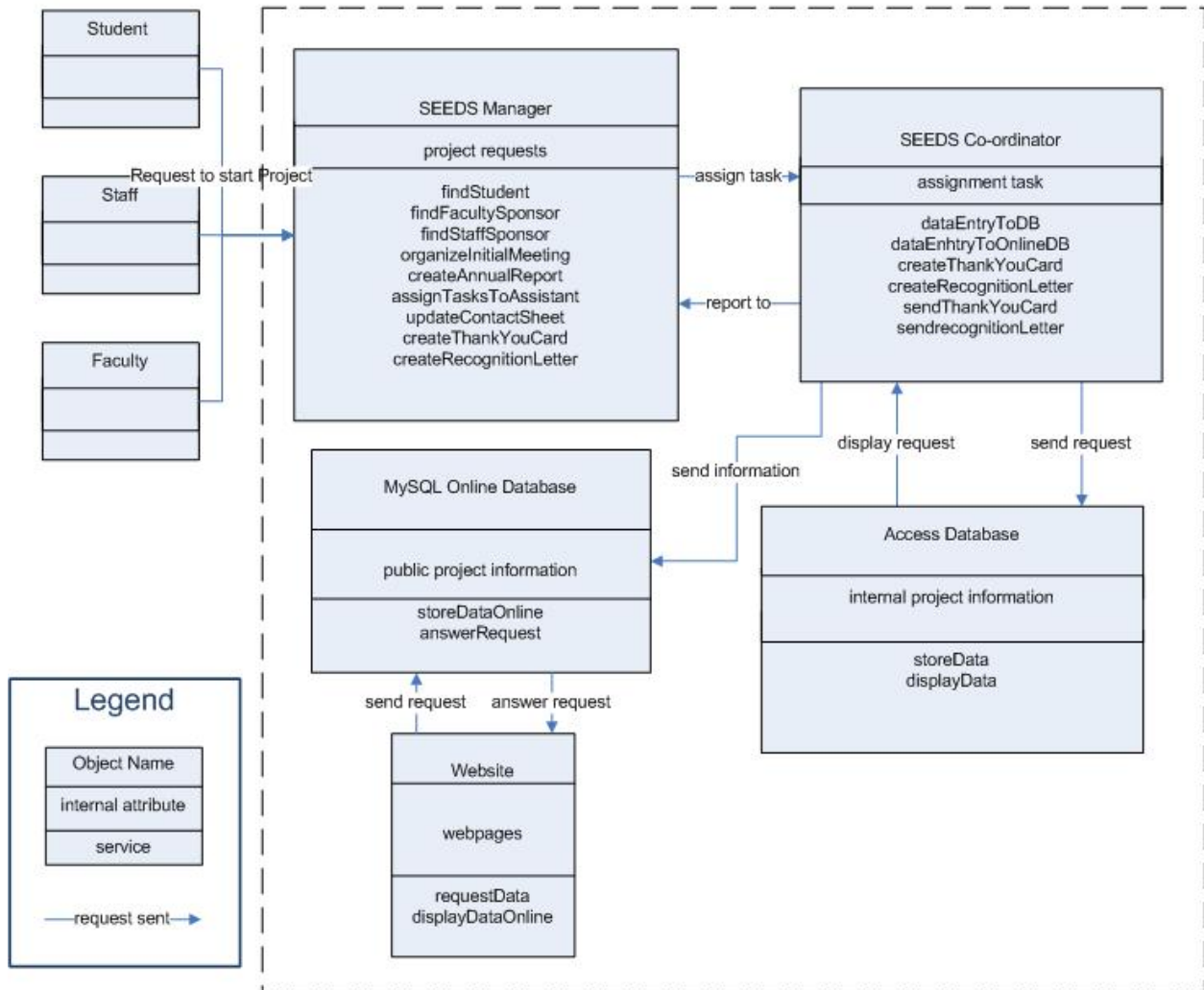
<http://www.slais.ubc.ca/COURSES/libr500/07-08-wt1/t5.htm>

Level 3 Analysis: Possibilities Checklist

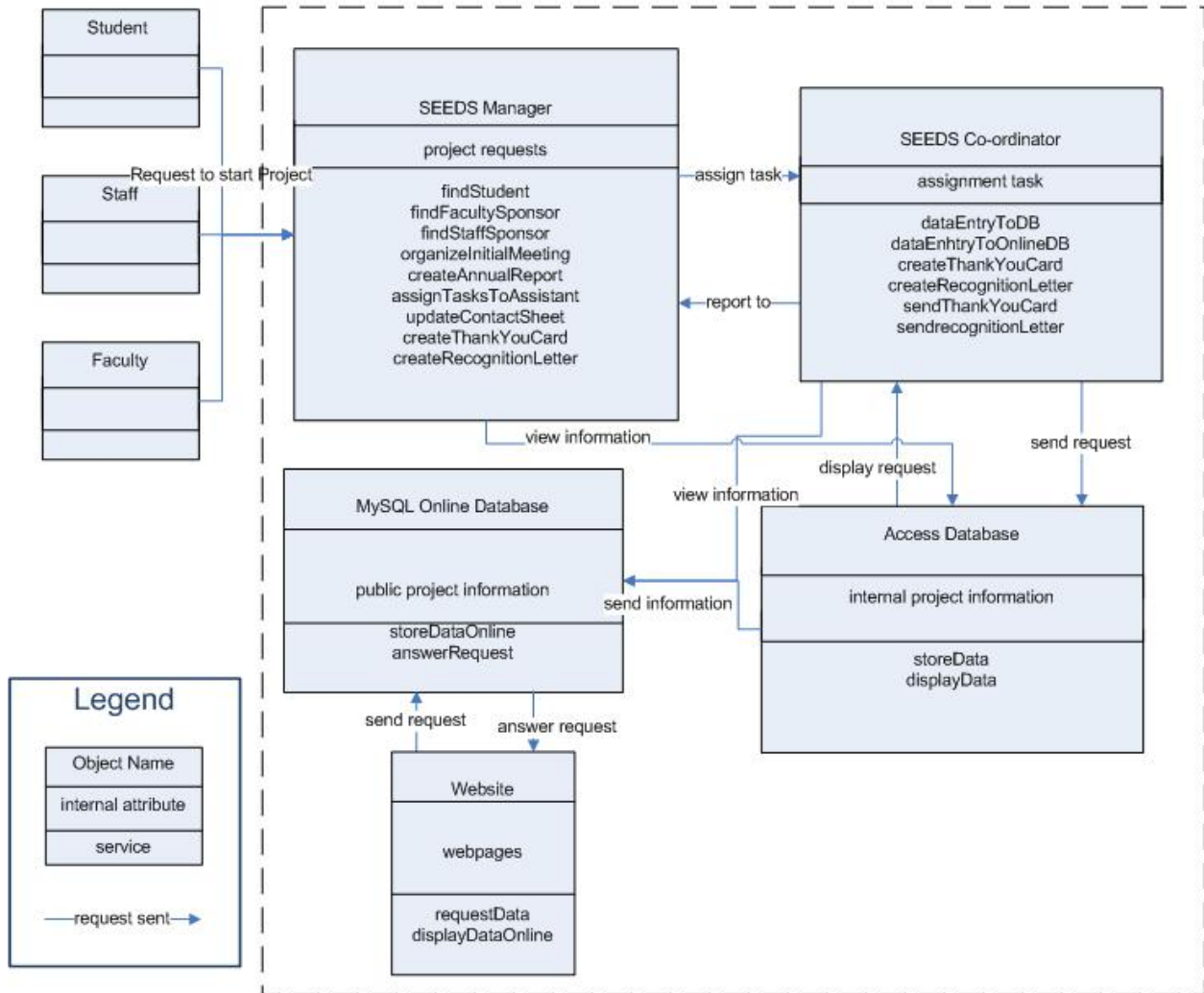
Common types of work system changes	Relevance (1, 2, or 3)	Summary of specifics for this situation
Customers		
Add or eliminate customer groups	1	
Change customer expectations	1	
Change the nature of the customer relationship	1	
Change the customer experience	1	
Products & Services		
Change information content	1	
Change physical content	1	
Change service content	1	
Increase or decrease customization	2	Try to decrease customization when possible.
Make products and services more controllable by the customer	2	Allow participants to enter their own data and allow manager to print reports.
Make products and services more adaptable by the customer	2	Use dynamic instead of static fields.
Provide better intangibles	1	
Change by-products	1	
Work Practices		
Change roles and division of labour	1	
Improve business process by adding, combining, or eliminating steps, changing the sequence of steps, or changing methods used within steps	3	Mail merge, generate reports with deadlines, Windows Works Calendar, use project numbers
Change business rules and policies that govern work practices	1	
Eliminate built-in obstacles and delays	1	
Add new functions that are not currently performed	2	Report generation from Access (annual report, recognition materials deadlines)
Improve coordination between steps	1	
Improve decision making practices	1	
Improve communication practices	2	Refer to projects by project number and name.
Improve the processing of information, including capture, transmission, retrieval, storage, manipulation, and display	2	Set up queries and reports in Access; reduce data entry with comma delimited files and Excel;
Change practices related to physical things (creation, movement, storage, modification, usage, protection, etc.)	1	
Participants		
Change the participants	1	
Provide training on details of work	3	Direct participants to Access training.
Assure that participants understand the meaning and significance of their work	1	
Provide resources needed for doing work	2	Participants should create documentation before they leave.
Change incentives	1	
Change organizational structure	1	
Change the social relations within the work systems	1	
Change the degree of interdependence in doing work	1	
Change the amount of pressure felt by participants	1	

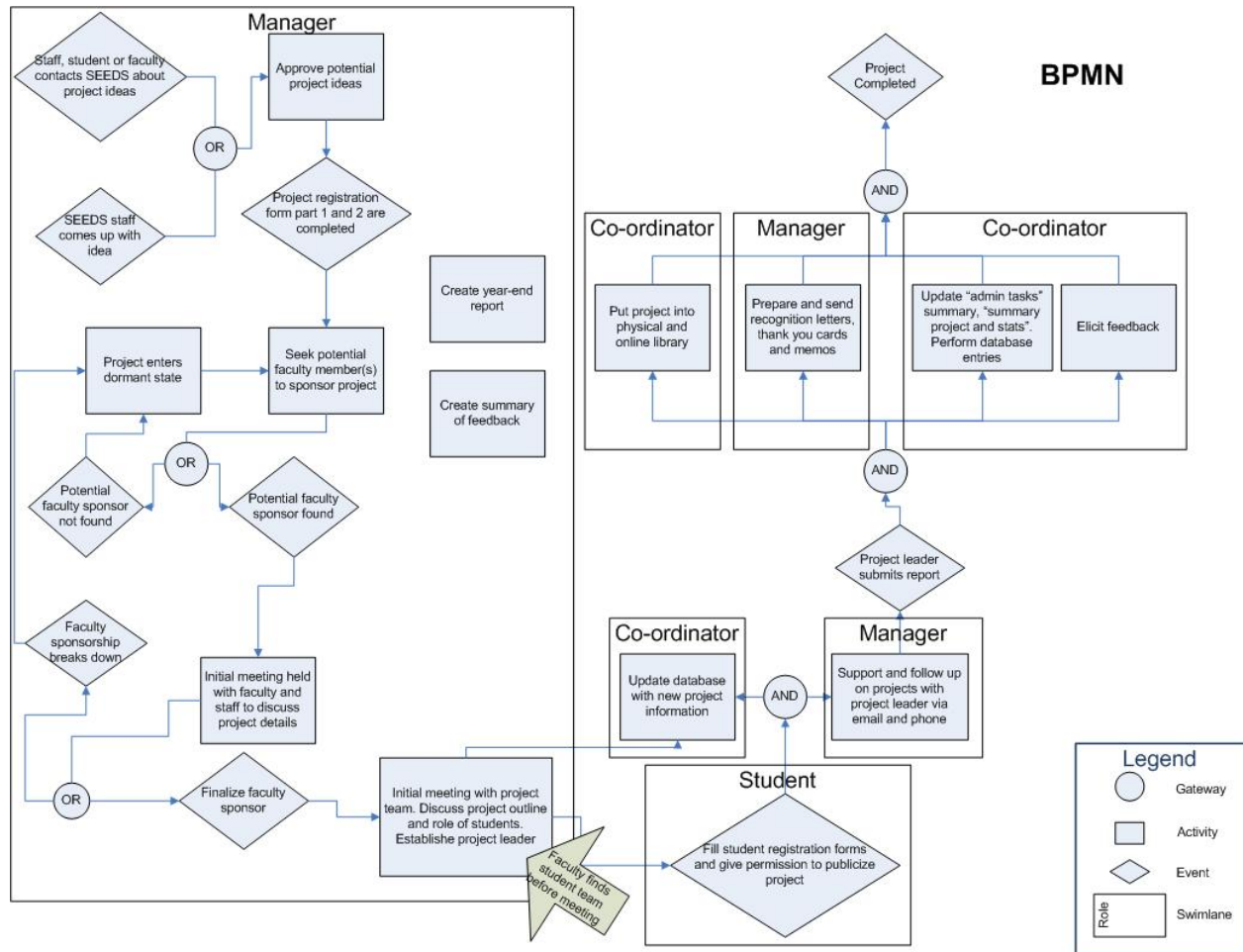
Information		
Provide different information	1	
Codify currently uncoded information	3	Document the tasks.
Eliminate some information	2	Review the forms and eliminate redundant fields.
Organize information so it can be used more effectively	2	Refer to projects by number and to files by full file path. Reorganize files.
Improve information quality	2	Improve forms so participants fill them in correctly. Add input masks and input samples.
Make it easier to manipulate information	2	Prepare dynamic queries.
Make it easier to display information effectively	2	Reorganize forms.
Protect information more effectively	1	
Provide different codified knowledge	3	Document tasks.
Assure understanding of details of tasks and use of appropriate information and knowledge in doing work	2	Input masks and input samples. Make documentation more practical.
Provide access to knowledgeable people	1	
Technologies		
Upgrade software and/or hardware to a newer version	1	
Incorporate a new type of technology	2	Perhaps LimeSurvey.
Reconfigure existing software and/or hardware	3	Match Access db to MySQL db.
Make technology easier to use	3	Improve the forms. Have documentation.
Improve maintenance of software and/or hardware	1	
Improve uptime of software and/or hardware	1	
Reduce the cost of ownership of technology	1	
Infrastructure		
Make better use of human infrastructure	1	
Make better use of information infrastructure	1	
Make better use of technical infrastructure	1	
Environment		
Change the work system's fit with organizational policies and procedures (related to confidentiality, privacy, working conditions, worker's rights, use of company resources, etc.)	1	
Change the work system's fit with organizational culture	1	
Respond to expectations and support from executives	1	
Change the work system's fit with organizational politics	1	
Respond to competitive pressures	1	
Improve conformance to regulatory requirements and industry standards	1	
Strategy		
Improve alignment with the organization's strategy	1	
Change the work system's overall strategy	1	
Improve strategies related to specific work system elements	1	

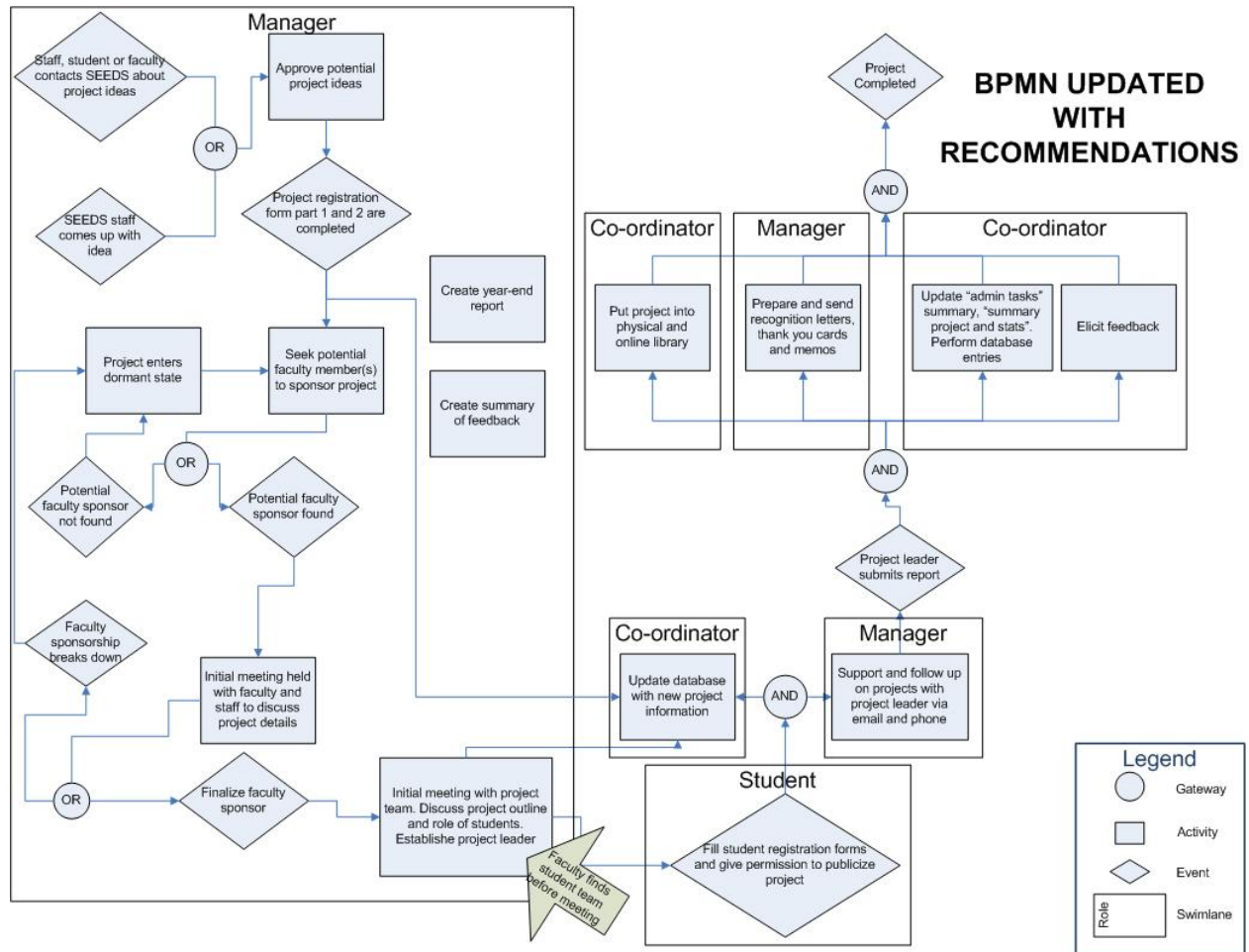
OOEM



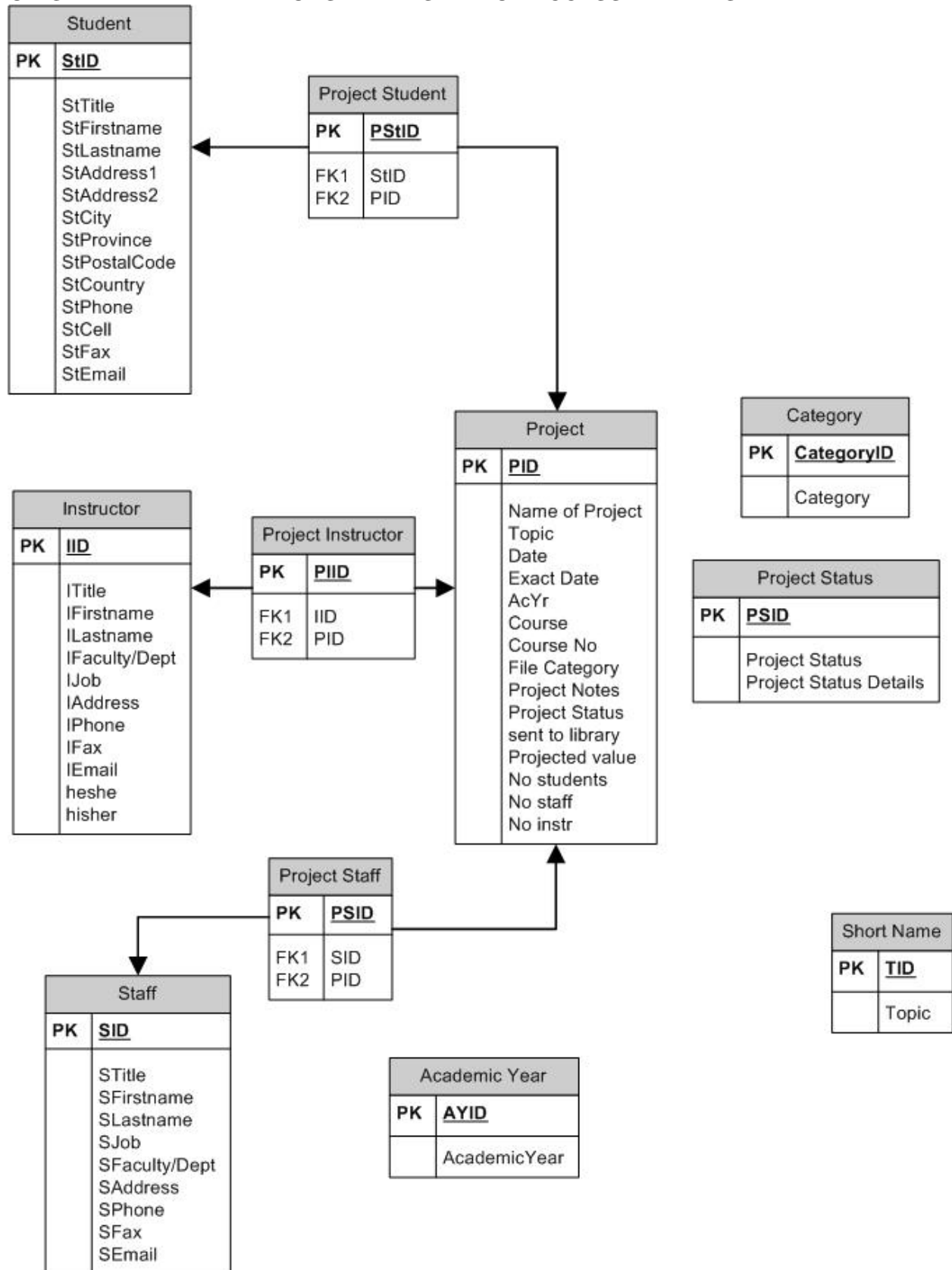
OEM UPDATED WITH RECOMMENDATIONS



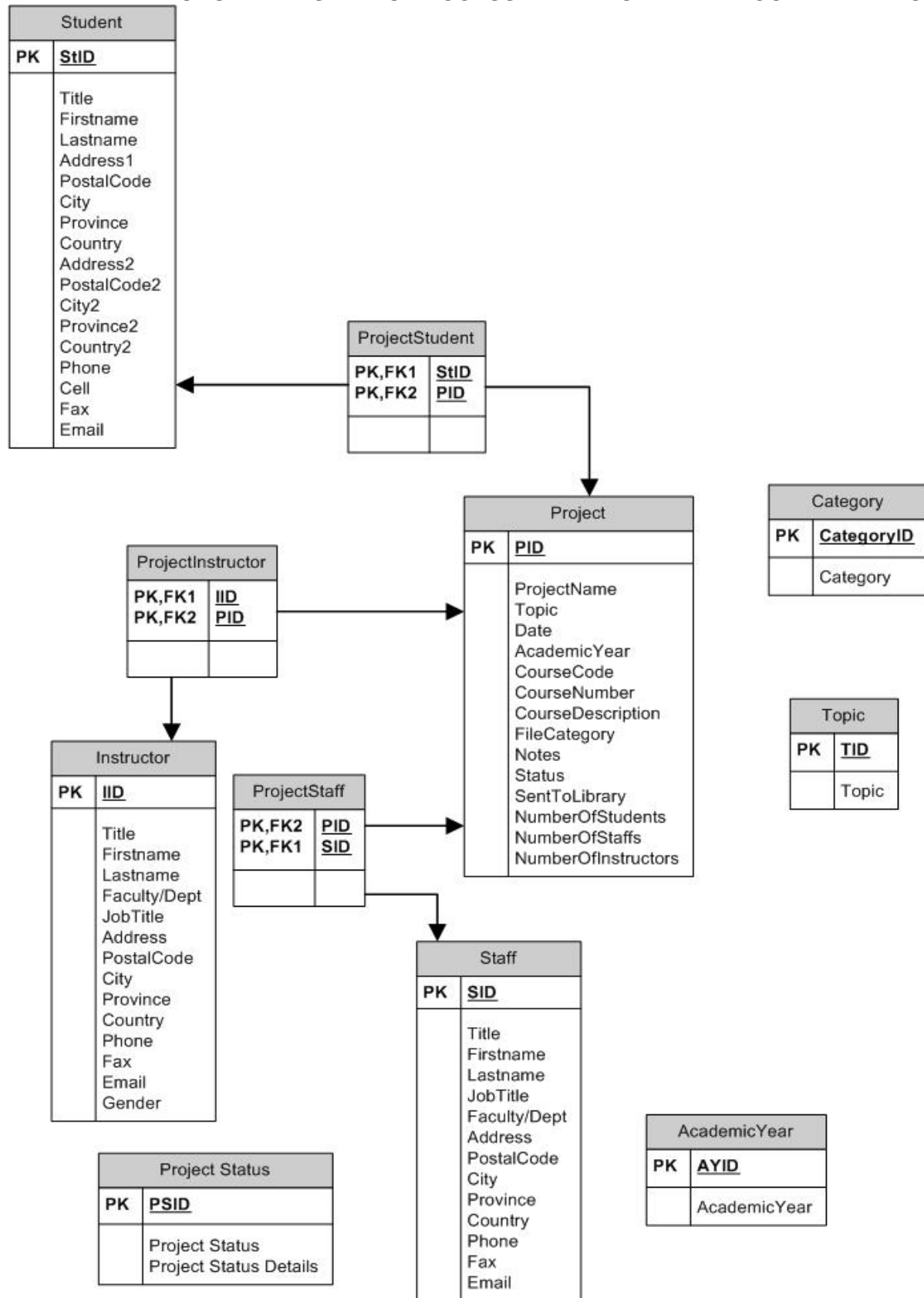




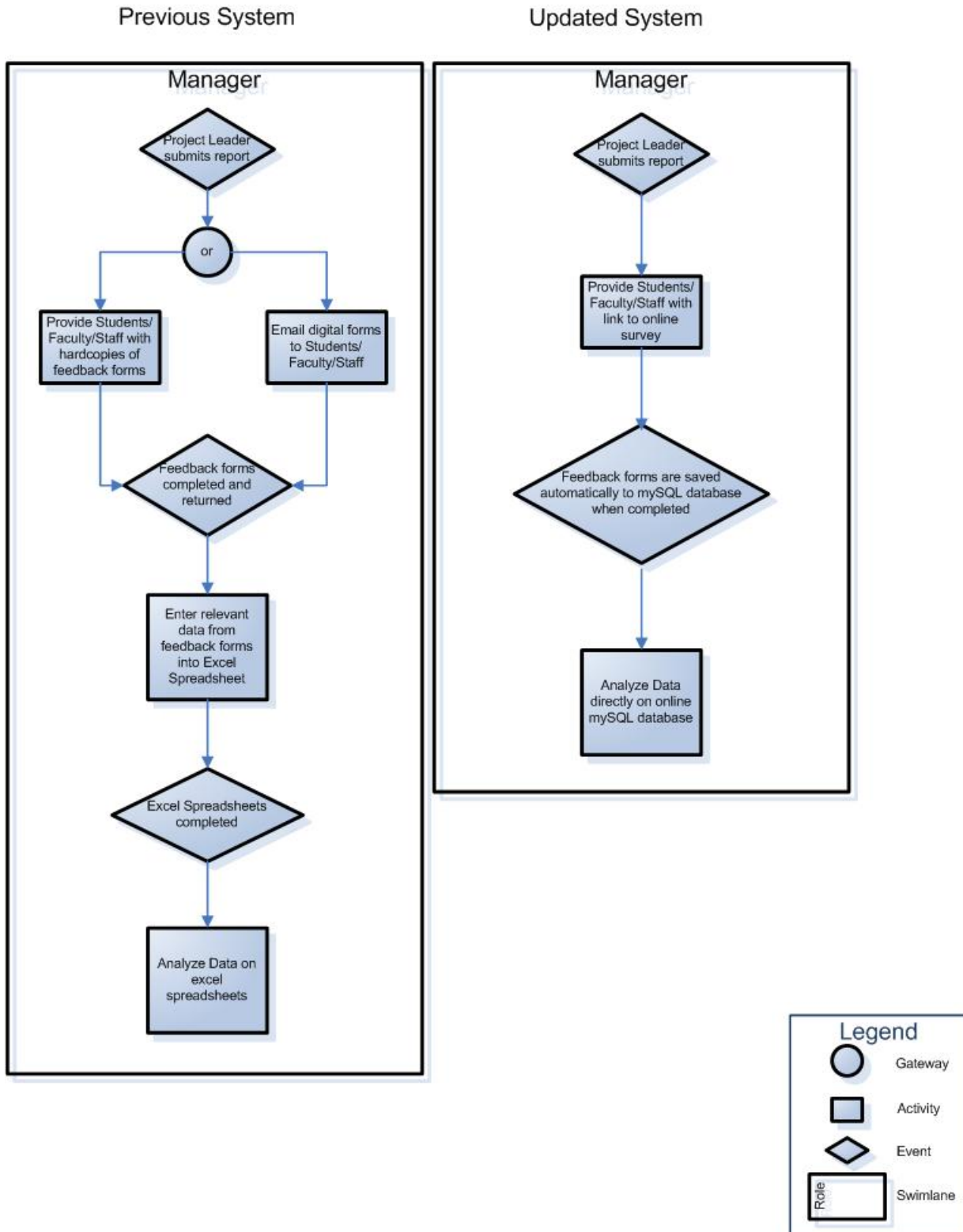
ORIGINAL ENTITY-RELATIONSHIP DIAGRAM OF ACCESS DATABASE



ENTITY-RELATIONSHIP DIAGRAM OF ACCESS DATABASE WITH RECOMMENDATIONS

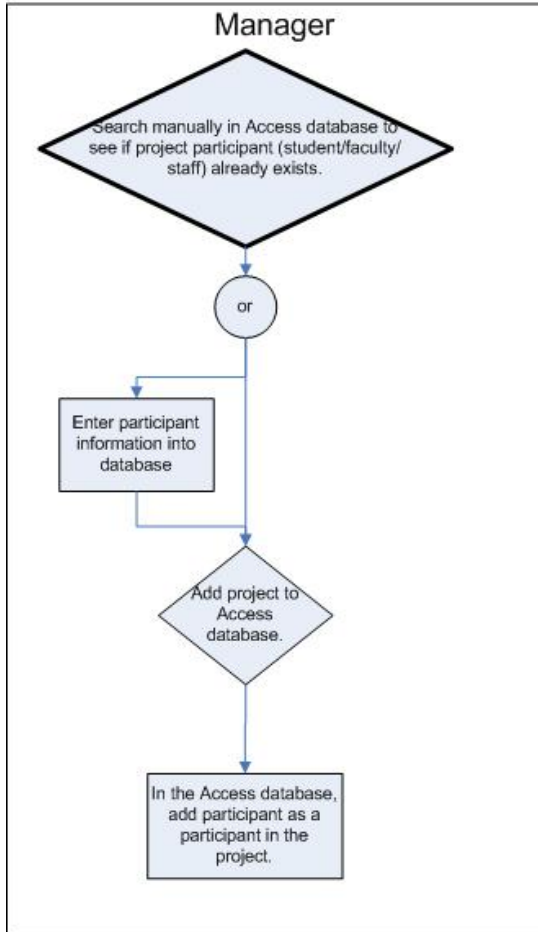


Obtain and Analyze Feedback

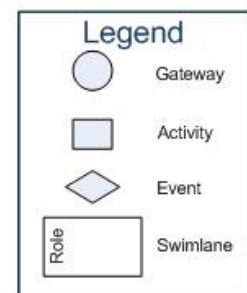
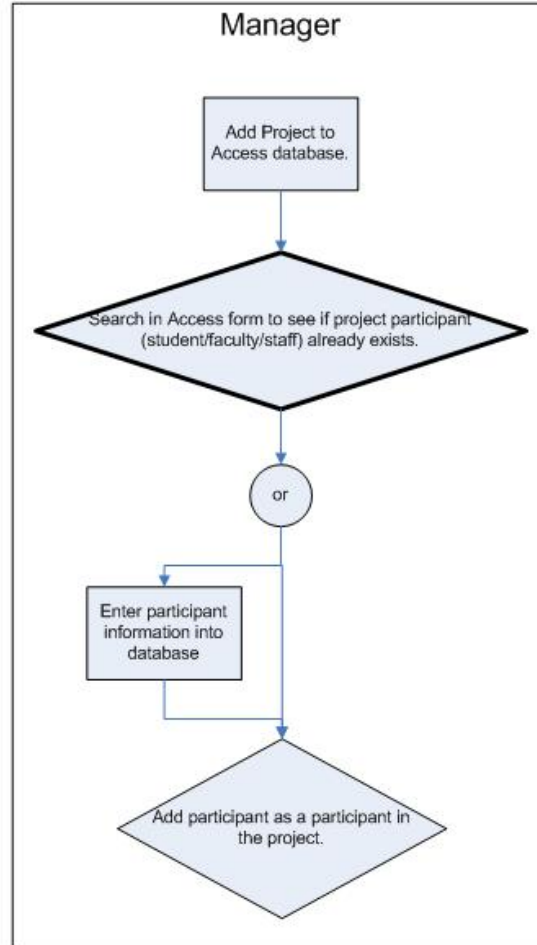


Add Participants Involved in Project

Previous System

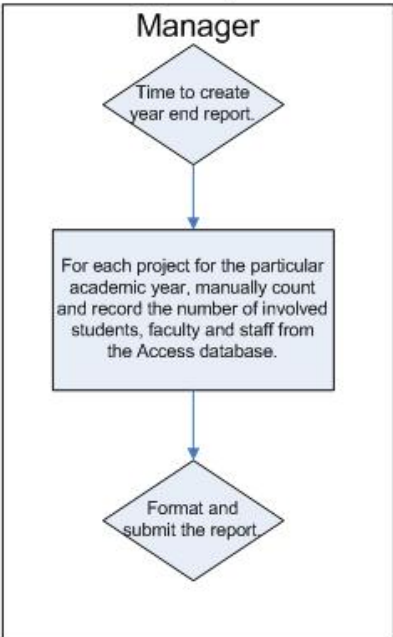


Updated System



Create Year End Report

Previous System



Updated System

