

Faculty of Computer Systems

 and Software Engineering

DCI2033

DATABASE SYSTEMS

[Project Proposal](http://fskpnp.ump.edu.my/moodle/mod/resource/view.php?id=4707)

Company Databse Management Systems

**Group Members**

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**SYSTEM OVERVIEW**

Company Database Management System (CDMS) is a system that manages different types of data such as stock control, financier, human resource, inventory and etc in a small and medium company. It also help the company management work properly and smooth. Through system, there have a relationship between the customers, suppliers, staff and board of directors.

Firstly, The clerk cannot up to date the all of the inventory such as new item come and out from the company because of the non systematic arrangement and lost hardcopy of inventory list.

Furthermore they need efficient system to complete the entire inventory stock list and also account management. Beside that the marketing manager must spent lots of time with the manual system for account management which is using form method. The probability to lose the hard copy due to the unexpected happens is rarely high. When use the new system the data can have more protection by using encryption/decryption method. This can avoid from data theft and other manipulation for outsider.

Moreover for the staff, sometime the need to wait a few day to settle their payroll payment due to the un systematic current system, for sure when the task is done manually lots of documentation is needed. From this problem, we converting the current manual method to the systematic computerized system to overcome the problem. The board of directors, the clerk and the marketing manager will save more time and energy with this new system.

**Introduction/background**

Many office in Malaysia have done their job by using the manual database system, such, when their worker wants to take monthly salary they just key-in the data in the logbook or paper then save in ring file. To overcome this poor database management system, Company Database Management System (CDMS) will replace the old once. This new system can recover all data from lost or be manipulated from outsider. Its also can reduce the time for all management work. Apart from that, this system also can easily to use in searching the worker, about the financial information and etc by using it.

PROBLEM STATEMENT

In the era of globalization and technological, almost all company using systematic computerized system to their management system. Our project is about Company Database Management System.

Via the manually to systematic computerized system, it may have its own condition which is:

* Using manual method, the problem to storing data & manages different types of data such stock control, financier, customer & supplier.
* Does not have a centralized database or system that will easily track all their records & data.
* A lot of paper work needs to be accomplished & records or data are manually encoded by the board of directors, the clerk and the marketing manager.
* Duplication and loss of data has been inevitable and employees also find it difficult and time consuming to consolidate records and reports.

OBJECTIVE

Regarding on the Company Database Management System, we determine a few objective to this system.

The objective are consist of:

* To develop a database to keep information of the user.
* To make a system that secures the data and information.
* To reduce the complexity of data.
* To provides a level in finding customer information.
* Save time or reduce the manpower.
* Convert the manual method to systematic computerized system.

**SCOPE**

The main functionalities of the system are the following:

* Adding, editing and deleting data.
* User authentication for data access control.
* Logs to track company activities.
* Filter bar for searching of records.

The first scopes of the project are divided by three users there are:

For user:

1. Board of Director:

* To protect the shareholder’s assets and ensure they receive a decent return on their investment.
* Board’s to select, evaluate and approve appropriate compensation of the company’s chief executive officer (CEO).
* Evaluate the attractiveness of and pay dividens, recommend stock splits.
* Approve the company’s financial statement.

1. Administrators:

* Secure confidential file delivery to any e-mail.
* Receive automatic notification of file receipt and download.
* Track all file deliveries.

1. Clerk

* Collect, count and disburse money, do basic bookkeeping and complete banking transactions.
* Compile, copy, sort and file records of office activities, business transactions and other activities.
* Complete and mail bills, contracts, policies, invoices or checks.

1. Employee

* Using equipment and tools correctly.
* Managed works accordingly.

Project Planning

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Activity** | **Description** | **Person in-charge** |
| **1** | **Discuss Project Topic.** | **The group will discuss the topic that want to be the project.** | **All** |
| **2** | **Discuss the timeline and the work flow of the project.** | **The group will discuss how the flow of the project and then make the gantt chart to make sure the project run smoothly.** | **All** |
| **3** | **Identifying the problem and find the case study.** | **Identifying all the major problem in the existing database(current system) and make the case study as example and references.** | **All** |
| **4** | **Make a proposal for the project.** | **Brief and explain about the project and send it to lecturer.** | **Mohd Fakhrul Azzeri B Abd Mujid** |
| **5** | **Build the interface (GUI) for the database.** | **Build the database interface(GUI)and user friendly.** | **Aizad Ahmad** |
| **6** | **Build the database.** | **Prepare for the database design** | **Aizad Ahmad** |
| **7** | **Identify entity that related to the project.** | **Search all entity in project and make the design works.** | **All** |
| **8** | **Identify the relation between table.** | **Link the relation to all table.** | **Khairul Anuar B Halmin & Amirah Husna** |
| **9** | **Link Coding with database.** | **Make the coding for the database for end user.** | **Khairul Anuar B Halmin & Amirah Husna** |
| **10** | **Make the report for the project.** | **Make the report that base on the finish project.** | **Amirah Husna** |

**Case Study 1**

**System name –** ESB database management system

**CUSTOMER’S GOAL:**Customer wanted to reduce the cost associated with support, maintenance and monitoring of their Oracle Database & Application Servers and at the same time maintain high availability of the systems for their users.

**SCOPE OF THE PROJECT:**Remote DBA monitoring agreement encompassed twelve (12) month commitment for remote administration of client’s Oracle Production Database with associated Application Servers and Web Servers.

**Remote Administration Support includes following services:**

* Monitoring & Supporting Database and Application Servers as per the SLA
* Initial configuration review and problem identification
* Installation of monitoring tool to proactively identify any issues with the database
* Installation of required patches
* Periodic performance analysis & identification of tuning activities
* 24/7-Oracle emergency support
* Reporting and resolving all serious Oracle alert log messages
* Quick response emergency support for production database outages
* Scheduling backups
* Restoring the database using the files provided by the Data Center networking team
* Twenty hours of custom DBA work on Oracle staging environment or client’s SQL server environment
* Support of the operating system environment
* Support of the Networking and Configuration tasks
* Upgrade/Migrate to new versions of database and application servers
* Data conversion and Data loading
* Performance Tuning
* Release Management
* Oracle on-demand DBA activities such as exports, dumps, additional backups, troubleshooting and installations
* Code development for backend activities using Oracle PL/SQL, PERL and other languages
* Oracle database schema modifications
* Database reorganizations and row re-sequencing for performance
* Migration of database objects
* User and security management
* Oracle data migrations and refreshing test databases
* New database setup and configuration
* Setup and installation of backup and recovery software
* Oracle disc architecture and disk load balancing
* Oracle SQL tuning
* Oracle design reviews
* Installation of the Multi-threaded servers
* Installation of Oracle Real Application Clusters RAC
* Creation of Oracle standby database and fail over databases
* Installing advanced replication
* Implementing change control procedures
* Implementing KEEP & RECYCLE pools
* Implementing multiple block sizes
* Building self-tuning database mechanisms
* Implementing automatic segment space management
* Implementing new database features

*SOLUTION / VALUE ADDITION:*

4iSoft looked for ways to automate the administrative tasks to reduce the cost and mistakes of manual intervention. We automated the job monitoring system and application release process for client’s production environment

4iSoft had highly proactive approach to database monitoring and support. We deployed proven monitoring tools to notify our DBAs of any bottlenecks in the database. With this approach, our DBAs could resolve the issues before affecting the business users.

*DELIVER QUALITY ON TIME:*

4iSoft uniquely combines requirement definition, visualization and management into a single 3-Dimentional” solution. This gives managers, analysts and developers the right level of detail about how this long term project should be designed and developed and maintained. By cutting ambiguity, the direction of development & support team is clear and the risk of poor outcomes is slashed. 4iSoft exceeded customer’s expectations by delivering all high volume complex reports on time and within budget. We have an excellent reference from this leading Third Party Administrator (TPA).

**CASE STUDY 2**

**Summary**

**Company**

The company based out of Ohio has been in business since 1985.

**Solution Description**

On call database development services are provided whenever the President needs assistance.

**Software and Services**

* Microsoft Access 2007
* Microsoft Windows XP

**Customer Profile**

**Sector:** Real Estate

**Industry:** Condominium Management

The condominium management company provides services such as board meeting services, information security, collecting of money, accounting, maintenance, and an array of administrative services.

**Business Situation**

The company uses an Access database to manage all the data for their business. Information such as associations, property unit owners, phone call logs, work orders, receivables and contractors are all managed in the database. Periodically the database needs to be updated to handle the company’s evolving business processes.

The President of the company is in charge of managing and maintaining the database. He is familiar with Microsoft Access and able to make simple changes. In many cases the changes that are needed are complex and the President is unable to make them. Professional help was needed to keep the database (and consequently the company) running efficiently.

**Solution**

***On Call Database Development Services***

**alligatortek** was called and in the same day a database professional was able to take care of all the changes the President needed. Changes that the President spent days trying to get done took less than 1 hour for our database professional to make happen.

***Always Available***

A tool is used by **alligatortek** staff to remote connect to any computer connected to the internet. This enables **alligatortek** to be able to connect to the company’s computers to make database changes at any time.

***Rising Up to the Next Level***

The database development provided has made the database completely comprehensive in managing associations. Because of this the company has begun to market and sell the software to other association management companies.

**Comparison Between 2 company**

|  |  |  |
| --- | --- | --- |
| Company  Type | ESB database management system | Ohio Enterprise |
| MODULE | maintain high availability of the systems for their users. | On Call Database Development Services |
| ENTITY | 1.Monitoring & Supporting  2. Reporting and resolving  3. Scheduling  4. Data conversion and Data loading  5.Performance Tuning | 1. associations  2. property unit owners  3.phone call log  4. work orders  5.contractors |
| ATTRIBUTES | 1.change control procedures  2. KEEP & RECYCLE pools  3. multiple block sizes  4. self-tuning database mechanisms  5. automatic segment space management | 1. alligatortek  2. remote connect  3.sales list  4.product description  5.quantitiy of products |
| FEATURE | 1.Data encryption.  2.Automatic Back-up  3.Friendly user interface | 1.risk management  2.Automatic Back-up  3.Friendly user interface |
| TYPE OF DATABASE USED | Oracle PL/SQL, PERL | Microsoft Access 2007  Microsoft Windows XP |

**Gantt Chart**

**Entity Relational Diagram (ERD)**

|  |  |
| --- | --- |
| **Company** | |
| PK  PK,FK | Company\_ID  Dept\_ID |
|  | Company\_Name  Company\_Address  Company\_Email  Company\_Contact |

|  |  |
| --- | --- |
| **Financial** | |
| PK | Fin\_Code |
|  | Fin\_Name  Fin\_Contact |

has

|  |  |
| --- | --- |
| **Inventory** | |
| PK | Inv\_Code |
|  | Inv\_Name  Inv\_Contact |

has

|  |  |
| --- | --- |
| **Department** | |
| PK  PK,FK1  PK,FK2  PK,FK3 | Dept\_ID  Fin\_Code  Inv\_Code  HR\_Code |
|  | Dept\_Name  Dept\_Contact |

|  |  |
| --- | --- |
| **Human Resource** | |
| PK | HR\_Code |
|  | HR\_Name  HR\_Contact |

has

|  |  |
| --- | --- |
| **Staff** | |
| PK  PK,FK1 | Staff\_ID  Dept\_ID |
|  | Staff\_Name  Staff\_Address  Staff\_Email  Staff\_Contact |

**Enhance Entity Relational Diagram (EERD)**

|  |  |
| --- | --- |
| **Monthly Salary** | |
| PK |  |
|  | Salary\_Total  Staff\_ID  Staff\_Name |

|  |  |
| --- | --- |
| **Company** | |
| PK | Company\_ID |
|  | Company\_Name  Company\_Address  Company\_Email  Company\_Contact |

manage

|  |  |
| --- | --- |
| **Financial** | |
| PK | Fin\_Code |
|  | Fin\_Name  Fin\_Contact |

|  |  |
| --- | --- |
| **Annual Bonus** | |
| PK |  |
|  | Bonus\_Total  Staff\_ID  Staff\_Name |

have manage

|  |  |
| --- | --- |
| **Inventory** | |
| PK | Inv\_Code |
|  | Inv\_Name  Inv\_Contact |

have

|  |  |
| --- | --- |
| **Department** | |
| PK | Dept\_ID |
|  | Dept\_Name  Dept\_Contact |

|  |  |
| --- | --- |
| **Human Resource** | |
| PK | HR\_Code |
|  | HR\_Name  HR\_Contact |

have

|  |  |
| --- | --- |
| **Staff** | |
| PK | Staff\_ID |
|  | Staff\_Name  Staff\_Address  Staff\_Email  Staff\_Contact |

**RELATIONAL MODEL**

**Definition**

* The relational model used the basic concept of a relation or table
* In relational model, every tuples must have unique identification or key base on the data
* The model is base on a collection of tables
* Often, keys are used to join data from two or more relations based on matching identification
* Key is one or more attributes that determine other attributes. The basic key :
* Primary key

The selected Candidate key to identify rows uniquely within relation

* Foreign key

An attribute whose values match primary key values in the related table

**Below is the Relational Model of our task project:**

**Table COMPANY**

**COMPANY(Company\_ID,Dept\_ID,Company\_Name,Company\_Address,**

**Company\_Email,Company\_Contact)**

**PK – Company\_ID**

**FK – Dept\_ID**

**Table DEPARTMENT**

**DEPARTMENT(Dept\_ID, Fin\_Code, Inv\_Code, HR\_Code ,Dept\_Name,\_Dept\_Contacts)**

**PK –Dept\_ID**

**FK – Fin\_code, Inv\_code, HR\_code.**

**Table STAFF**

**STAFF(Staff\_ID, Dept\_ID, Staff\_Name,Staff\_Address,Staff\_Email,Staff\_Contact)**

**PK-Staff\_ID**

**FK – Dept\_ID**

**Table FINANCIAL**

**FINANCIAL(Fin\_Code,Fin\_Name,Fin\_Contact)PK-Fin\_ID**

**Table INVENTORY**

**INVENTORY(Inv\_Code,Inv\_Name,Inv\_Contact)**

**PK-Inv\_Code**

**Table HUMAN RESOURCE**

**HUMAN RESOURCE(HR\_Code,HR\_Name,HR\_Contact)**

**PK-HR\_Code**

**Table MONTHLY SALARY**

**MONTHLY SALARY(Fin\_Code, Fin\_Name,Fin\_Contact,Salary\_Total,Staff\_ID,Staff\_Name)**

**PK-Fin\_Code**

**Table ANNUAL BONUS**

**ANNUAL BONUS(Fin\_Code, Fin\_Name,Fin\_Contact,Bonus\_Total,Staff\_ID,Staff\_Name)**

**PK-Fin\_Code**

**REPORT**

Date : 2/11/2012

Venue : Y-DK-2

Time: 4.00 pm

Attendance: All member attend

|  |  |  |
| --- | --- | --- |
| 1. | MOHD FAKHRUL AZZERI BIN ABD MUJID | CC11295 |
| 2. | AIZAD BIN AHMAD | CC11053 |
| 3. | KHAIRUL ANWAR BIN HALMIN | CC11122 |
| 4. | AMIRAH HUSNA BINTI ABU | CC11126 |

**Objective**: Define the title to our project with lecture.

**Conclusion**: We accept the title “Company Database Management System”

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(MOHD FAKHRUL AZZERI BIN ABD MUJID)

Group leader

Date : 4/11/2012

Venue : Y-BK-05

Time: 1.00 pm

Attendance: All member attend

|  |  |  |
| --- | --- | --- |
| 1. | MOHD FAKHRUL AZZERI BIN ABD MUJID | CC11295 |
| 2. | AIZAD BIN AHMAD | CC11053 |
| 3. | KHAIRUL ANWAR BIN HALMIN | CC11122 |
| 4. | AMIRAH HUSNA BINTI ABU | CC11126 |

**Objective**: Discuss about the proposal content (brainstorming) how to do the ERD diagram and case study.

**Conclusion**: We still had to discuss about the Task 1 and need to ask the lecturer, course still not exactly understand how to do it.

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(MOHD FAKHRUL AZZERI BIN ABD MUJID)

Group leader

Date : 5/11/2012

Venue : Ina shoppe

Time: 9.00 pm

Attendance: All member attend

|  |  |  |
| --- | --- | --- |
| 1. | MOHD FAKHRUL AZZERI BIN ABD MUJID | CC11295 |
| 2. | AIZAD BIN AHMAD | CC11053 |
| 3. | KHAIRUL ANWAR BIN HALMIN | CC11122 |
| 4. | AMIRAH HUSNA BINTI ABU | CC11126 |

**Objective**: Task division for each member in our group.

**Conclusion**:

* Proposal – Mohd Fakhrul
* Case study – Aizat & Khairul Anwar
* Scope project – Amirah Husna
* Task proceed

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(MOHD FAKHRUL AZZERI BIN ABD MUJID)

Group leader

Date : 6/11/2012

Venue : Cafeteria KK1

Time: 5.30 pm

Attendance: All member attend

|  |  |  |
| --- | --- | --- |
| 1. | MOHD FAKHRUL AZZERI BIN ABD MUJID | CC11295 |
| 2. | AIZAD BIN AHMAD | CC11053 |
| 3. | KHAIRUL ANWAR BIN HALMIN | CC11122 |
| 4. | AMIRAH HUSNA BINTI ABU | CC11126 |

**Objective**: Discuss our task 1 draf, focus in ER diagram and case study.

**Conclusion**: After we discuss it, we only can focus on ER diagram cause the case study can work it only for one company.

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(MOHD FAKHRUL AZZERI BIN ABD MUJID)

Group leader

Date : 7/11/2012

Venue : Cafeteria KK1

Time: 11.00 pm

Attendance: All member attend

|  |  |  |
| --- | --- | --- |
| 1. | MOHD FAKHRUL AZZERI BIN ABD MUJID | CC11295 |
| 2. | AIZAD BIN AHMAD | CC11053 |
| 3. | KHAIRUL ANWAR BIN HALMIN | CC11122 |
| 4. | AMIRAH HUSNA BINTI ABU | CC11126 |

**Objective**: Discussion our part which not satisfied and be done.

**Conclusion**: All tasks done but still have to review and ask for lecturer if we need to modify if or something missing.

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(MOHD FAKHRUL AZZERI BIN ABD MUJID)

Group leader