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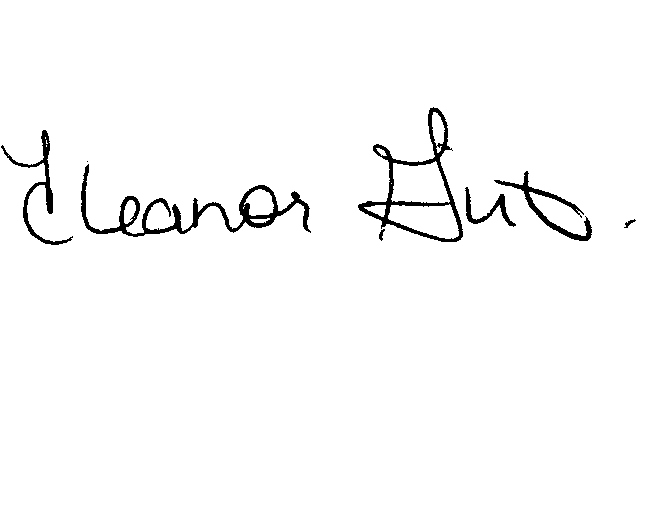
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**Date: 15 November 2012**



**Advanced Database System**

**Module code: SD3042**

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Glossary

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# 1.0 Case Study

In this assessment we have been told that a company called Natural Health Shop wants us to develop them a database management system for the company, as they where having problem making orders and also double booking room. Therefore this company has approach us in good faith and has ask us to build them a database whereby they don’t want the whole system to take over the shop, hut to allow the employees to not double book rooms and also they can have a system whereby they can see how much stock they have so they don’t need to order more than what is needed. Therefore we as a team will read the business rule of the company and design an ERD to express what kind of database management system they are looking for and then using software we will develop the database using PL/SQL to develop this.

# 1.1 Introduction

Our group will have to create and develop and database for a Natural Health Shop to help to reduces the inconsistence of making double booking or fault orders.

To make sure we develop a very good system we will have to start off by reading the business rule of the company, and to create some ERD to help us to image how the database should look like and how it should community. The DBMS (database management system), must be able to answer some of the questions which are important to the business.

Once our group has identified what is needed by the Natural Health Shop Company we can start to have an idea of what type of database we should be developing.

We will be using PL/SQL to develop our database management system for the company. This will allow the company to have less problem and they will be able to have more control of there own business.

Before we start to develop this database management system we must think of what each person must do. Once we have issues everyone a part of work to carryout we will then start to build on the DBMS one part at a time. We will also be making sure that when we are creating the DBMS we take in to consideration that if the DBMS could carry out some simply task which the business rule requires of the system. Having found which entities and notation goes with which relationship it was than a matter of using Oracle to extract the information which was required for the user.

Each entity within the database will be put in manually using the software Oracle.

Oracle will be used in this case to provide the database management system (DBMS) which will help us into entering information in to table. This will help because when information is needed by the company the database system will help them extract the information they want e.g. to see how many room are currently booked.

Within the database system we will be carrying out some task into extracting information from Oracle. It should provide the user with the required information which they are looking for, therefore our database system should meet the condition of what the users need. We as a group will be working hard into developing a system in which our database will provide this outcome for all types of users no matter the information that they are looking for, PL/SQL will be used n developing this new system which will be very useful for the shop as they will find information with using minimal effort.

We will be doing some test as well to make sure that the system which we develop for the company, is what they are looking for and if there is any implementation which is required before sending the database management system out. This is allowing us to investigate if the DBMS need any work and if so what type of improvement could we do.

## 1.2 Database Modelling and Implementation:

**Main entities of Natural Health Shop**

* Product
* suppliers
* shop order
* stock
* shop
* inventory
* employees
* room
* treatment
* speciality
* booking
* customers

These are our 12 entities for the company which we think they need reading their business rule.

**Identifying main relationship types between the entity types**

The table below illustrate the relationships between each of the entities.

|  |  |  |
| --- | --- | --- |
| Entities | Relationship Between Entities | Entities |
| Product | Supply | Supplier |
| Supplier | Is supplied by | Product |
| Shop order | Exists | Product |
| Product | Contains | Shop order |
| Stock | Has | product |
| product | Contain | Stock |
| Stock | Use | Inventory |
| Inventory | Is used by | Stock |
| Inventory | Uses | Treatment |
| treatment | Is used by | Inventory |
| Treatment | Operates | Booking |
| booking | Is booked | treatment |
| booking | Is booked by | Customers |
| Customers | Is served | Booking |
| booking | Is booked | Rooms |
| rooms | Use | Booking |
| room | Contain | Shop |
| shop | Is located | Room |
| Booking | Served | Employees |
| Employees | Occupied | Booking |
| employees | Is possessed | Specialty |
| Specialty | Possessed | Employees |
| Employees | Manages | Shops |
| shops | Works | Employees |
| shop | Supports | Supplier |
| suppliers | Is supported by | Shop |

# 1.3 ER1

This Is the ER1 which we have developed using the business rule of the company which we are creating the Database management system (DBBMS) for.

Figure : ER1

The relationship of each entity is illustrate using either an relation such as 1…\*(one to many), \*…\*(Many to Many) or 1…1(One to One).

However within this report it will show how ERD1 is transformed into linker table which will give us ER2. Also providing information which is only required by the user when needed this should help the company reduces some of the problem which they where currently having in the Natural Health Shop.

1. Each **Product** can be in many **Shops**  
   Each **Shop** can have many **Products**
2. Each **Supplier** can supply many **Products**  
   Each **Product** can be supplied by many **Suppliers**
3. Each **Supplier** can supply many **Shops**  
   Each Shop can be supplied by many Suppliers
4. Each **Shop** can have many **Rooms**  
   Each **Room** is located, belongs to a specific **Shop**
5. Each **Room** can support many **Services**  
   A **Service** can be given, served in many **Rooms**
6. Each **Room** can have many **Bookings**  
   Each **Booking** is done, belongs to a specific **Room**
7. One **Booking** is correlated to one **Customer**
8. One **Booking** is correlated to one **Employee**
9. A **Service** can be run by many **Employees**.
10. Each **Employee** has one **Specialty**

Each **Specialty** is possessed by many **Employees**

1. Each **Booking** is correlated to one **Service**
2. Each **Shop** is directed by one **Manager**

These are the notation on the ER1 to demonstrate what is happing between each entities.

# 1.4 ER2

# 1.5 Listing of the records in each table

# 1.6 Showing the Queries

4. Can you list all the staff names and their manager’s name, for a particular shop?

5. Can you list all the sessions a specific member of staff had on a specific day, which

customers and the room numbers?

6. A customer could ask ‘Which member of staff did my 9-10 session today and can you tell

me who their manager is because I want to complain?’

# 1.7 Group Member Participated

Within our group we had people with some strength and weakness which played a big part within our development of the database management system. As we try to explain in this report, we will show and illustrate some of the problem which we had to deal with while undergoing this project.

First we shall talk about the group member’s participation within the group.

Talking about Mohammod Habibur Rahman ID, U1008015, he is a very hard working person he dose a lot of research and also very good developing the system which we have developed. He is one of them guys which will stay late to make sure that the DSMS is the best it could be within the team. This is a very strong attributed from Habib, however everyone has there own weakness, and for Habib his main weakness is that he has a disability which it hard for him to some of the time spell words. His dyslexic is one of his weaknesses; however this did not stop him from giving his up most best 100% of the time while developing this system for the company. Another thing which I needed to develop on before I could really help out in the project was to expand my own key knowledge of database system and how to written simply PL/SQL. Once I did his I could start coding some of the database system for the company.

Apart from this one weakness which he has Overall his work which he has put in must be recognition as he has work as hard as he can to try and make this DSMS as best as possible as it can be. I can not really say anything negative about this persona as he is always the first to come in and the lat to leave.

We both took turns in developing the database system as we both had to gain some new skills into learning PL/SQL. The way we went about this was to research a little about how to PL/SQL before starting to develop the database management system for the company. Once we had learnt the PL/SQL we then had to expand our knowledge into database system in order to make the system function to the best of its ability.

Another aspect of the project which me and my group partner did was running the test on the database system to make sure that the system which was developed ran as smoothly as possible.

The second member of the group is Alexandros Akrivopoulos-Hughes ID**:** u1235441. The database coding was done by both of us. Both of us help each other to make sure that when we were developing the database system we used each other skills sets to achieve our main object.

My group member also was involved in design the ERD diagram, as we both did the ERD on paper and then we used software to make the ERD diagram look better and make it understandable. My group member also did some coding for the database management system whereby we had to develop a system to suit the company. I had some kills set in the PL/SQL; however my group member had a better understanding when it comes to PL/SQL. Therefore we both used each other to create and develop the system for the company. Within the group every member did the same amount of work, we decided this will be a better and effective way to deal with the assessment, rather than have individual works to deal with we thought we can tackle the work together using each other’s strength and weakness.

Here are some of the lists of tasks which we performed;

* Start reading up on ER1 and ER2
* Once the entities were found we could start to create the database management system to create the records which will be inputted into our database using PL/SQL
* Starting to design a prototype of the ER1 so we can start to write down the information into the tables.
* Begin to build our database management system using PL/SQL
* Try an input the information into the database creating scrip's and triggers for the system
* Begin our development into the ER1 and ER2
* Understanding the relationship within each entity
* Annotate the ER1 and ER2 to understand what is happening
* Conduct the documentation to show what we have developed.

These are the few things which we have done within the group. We meet up a couple of times in a week to have a catch up and see our progress in the assessment. Within the group we had to understand each other’s strength and weakness to make sure that when someone’s does not understand or can’t do some tasks we within the group will contribute more and try to make the person understand or will take the reasonability and do their part of the work. We did this because we did not want to have any one of us within the group to fail

Overall both me and my group member work hard to achieve our main outcome of the project. We use both of our knowledge to gain the correct level of understanding which was needed in order to complete this project.

# 1.8 Evaluation

We was given a case study whereby we had to develop a database management system to help a company control booking they make and there stock which they have.

The reason why we had to develop this database management system is to help the company reduce the error rate which the company make. The database system must be developing to help this company to manage their current system. So when I had read the case study I started to develop an ERD diagram whereby this will help me develop the database system. Reading the business rule I will start to create and draw down an illustrate diagram to show how each entities connects with each other and could some question be answered in the database.

Once I have developed the ERD I show my group member and we both look at each other’s ERD and we started to change some of the ERD until we could agree that our ERD will work. This is the first part of the phase which we must do before we develop any database management system for the company.

After we have agreed the ERD I started to learn some PL/SQL which will be use in the database system whereby the system will automatically read the amount of stock they have or if the room have already been book. Learning PL/SQL was a bit hard, this is because I knew how to do SQL, however not that was strong when it came to doing PL/SQL.

When starting to implement the database system I ask my group members for some help as we both used each to help one another to make sure that we was doing the database management system correctly. I have some weakness which did affect me when it came to doing programming the database system using PL/SQL. As I have dyslexia, which some time make me forget to spell a few word. However when this happened I got my group member to help me out with some coding which I was supposed to do.

In terms of the successfulness of the database management system (DBMS), it does what is expected of the database to do which is to find or extract the data which is required and provide a suitable interaction with the user this will provide what they are looking for in the company. For example in our PL/ SQL program we have created a few tables, within each table there are entitles and these tables have records of customers, we have also added in some triggers so if any employees tries to book a room which is already book the system will show an message saying that the room is already book.

If a company wanted to find out a category of job we had within one table, they should be able to run a quick query whereby or use one of the scrip's to find the information they are looking for. This is the main reason why our DBMS is very useful it will provide a suitable environment for users to extract information.

Discussing the outcome of the work it could be said that overall the work that we have produced within the time space, as a group we have done our best to provide a very useful database system. If we had more time we would of changed a few things, this is because we would have had more experiences in using PL/SQL. However the development of the system is all working to standard and the progress of the DBMS is very useful.

What I have learnt from doing this project is that there are many different ways of making a database system. Using a very powerful programming language such as PL/SQL is very effective in big organisation. Overall I have gain a lot of new skills and new knowledge about PL/SQL, I will use these skills in the further as this will help me create and develop better understanding of database management system.

# 1.9 Recommendation

Overall if we had more time we both think that we could have learnt much more of PL/SQL and tried to develop a better database system for the company. However we think with the given time set we had we did our very best to achieve this main aims of our targets we set out. I personal think that our work which we have done is very good; however we both agree that we could do much better if we had more time. The time play a very big part in our group as we both where very busy, therefore the work which we have done is to our best ability due to the time frame.

Overall I can say that we as a group have learnt a lot of new skills and gain very good experience in PL/SQL.

2.0 References:

[1] Thomas, C. and Carolyn, B. (2008), Database Systems A Practical Approach to Design, Implementation, and Management, 5th ed. (Accessed 11.02.2012)

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[3] Andy, O. (2004), Database a self teaching guide, (Accessed 16.02.2012)

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