National College of Ireland

BSc in Computing

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Smart-Shop (Group B)

Project Report

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# Executive Summary

 Our data warehouse was created for our online retail store called Smart-Shop the warehouse has multiple tables that store’s the data that we need for our Smart-shop company, it allows Smart-Shop to sell its clothing products to customers and be able to run queries on it.

# Introduction

The purpose of this document is to set out the requirements for the development of a Data warehouse. The warehouse will be designed around our customers and products.

## Background

The background of the project is to design, develop and populate a data warehouse system for our online clothes shop called Smart Shop. To arrive at the completion of the project successfully the following steps will need to be implemented properly in succession.

1. The requirements will required to be written.
2. Entity Relationship Diagram (ERD). An ERD is a chart that visually represents the relationship between database entities.
3. A data mapping document for each table in our data warehouse.
4. Script files have to be created to help populate our corporate database. The database needs to contain 100,000 records.
5. Program to load data files.

The time frame of this project is 2 weeks.

## Aims

The aim of this portion of our project is to set up a data warehouse and data marts, the data warehouse will be based on our corporate database we have just finished setting up.

# Proposal:

**Overview:** The background of the project is to design, develop and populate a data warehouse for our online clothes shop called Smart Shop. The following is our team.

**Project Team**

|  |  |  |
| --- | --- | --- |
| **Student Number** | **Student name** | **Role** |
| X12724145 | Chris Doran | Data Administrator |
| X13114352 | Declan Barnes | Project Manager |
| X13114581 | John McNamara | Data Analyst |
| X13406038 | Sean McDermott | Data Architect |
| X13114557 | Yousef O Conner | Web Design & Developer |
| X13401792 | Daniel Gorman | Business Analyst |

**Roles:**

1. Project Manager
2. Data Architect/Administrator
3. Business/Data Analyst
4. Web Designer & Developer

## Technologies

**MySQL:** is an open-source RDBMS, it is the world’s 2nd most widely used RDBMS, and the most widely used open-source client-server model RDBMS. We used this to create our database.

**WhatsApp:**  is an [instant messaging](https://en.wikipedia.org/wiki/Instant_messaging) app for [smartphones](https://en.wikipedia.org/wiki/Smartphones), we used this to create our group on WhatsApp, which allowed us to communicate with each other when not in class (days off etc.).

## Requirements

### Requirement <Data Warehouse>

For the next deliverable our group must create a data warehouse based from our corporate database we have recently finished, our data warehouse will focus on our customers and products.

### Requirement <Unstructured Data>

My team will build an automated Website that will create unstructured data file format. This will help the clients in the near future as the clients have plans to link the website to the database but for now just want to create bought separately.

### Requirement <Data Mapping Document>

Our Team will create a Data Mapping Document for each table of our data warehouse. The data mapping document will be an integral piece to the success of our data migration and integration. It’s with the data mapping document that we will be able to mitigate our risk factors.

The data mapping process will determine what data needs to be transferred over to our new database.

## Functional Requirements

### Requirements/Business Rules

**Weekly\_fact**

The user must be able to view the total weekly income.

The user will be able to see the total weekly orders made.

The weekly’s most expensive products can be viewed (Shirt, jeans etc.).

The user can see the weekly’s highest price product.

**Monthly\_fact**

The user must be able to view the total monthly income.

The user will be able to see the total monthly orders made.

The month’s most expensive products can be viewed (Shirt, jeans etc.).

The user can see the month’s highest price product’s.

**Yearly\_fact**

The user must be able to view the total yearly income.

The user will be able to see the total yearly orders made.

The year’s most expensive products can be viewed (Shirt, jeans etc.).

The user can see the year’s highest price product’s.

## Data Requirements

The Smart-Shop data-Warehouse will need to store data on customers, products etc. This will allow us to see the customer’s details, what they have purchased, the quantity and price, the worst performing products, how many shorts were sold in a particular month etc.

## ERD

Weekly:



Monthly:



Yearly:



## Design and Architecture

The design for this part of the project was more difficult at the start but once we researched what was needed it became a lot easier to move forward. We started with a project plan to assign tasks to group members then the requirement spec was completed. Next step was to create the ERD’s which allowed us create the data marts and Data warehouse. As part of the design was to use the script file created in the last assignment to create the Auto-Load function which will load data from the database to the warehouse.

## Conclusions

After completing the second part of our project I can say that we are happy with the overall result, the project has many advantages for us as a group, and for one it has allowed us to become more efficient with databases and data warehouse. It has taught us exactly what a data warehouse is and how to create a warehouse along with the data marts. Like the first assignment there was a lot of practical work involved which we benefited from. Also learning how to implement a script file for the auto-load function was very beneficial. The disadvantages would be the short time we had to complete this assignment as the group members had several other projects and continued assessments to study for. 2.1 Appendix-Project Plan Project Document (Daniel) Project Meeting Minutes (Declan, Chris, Daniel, Youcef, Sean, John) Project Requirements (Declan, Chris, Daniel, Youcef, Sean, John) ERD (Chris, Sean) Script Files (Youcef).

## Did the plan work well and was it followed?

Yes our plan worked very well for us, everyone was on the same page which helped when putting the deliverables together. All of our assigned work was completed without delay. We all followed the plan set out which kept everything on track which help prevent any problems.