**ITDA310 – Project Proposal**

**Cover page**

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# C:\Users\Margo\AppData\Local\Microsoft\Windows\INetCacheContent.Word\75d32adfaf31fd5ca246d3989daf224b.jpgCustomer information

Company Name: The Comic Book Store

Location: South Africa

# System proposal

## Overview

The Comic Book Store is a local business that specializes in selling comic books. This business consists of an owner, store manager and multiple employees of the store.

In terms of the store’s stock, orders of comic books arrive daily or weekly and will need to be added to the system.

The current system consists of employees with responsibilities to record their sales and arrival of stock on a spreadsheet.

Problems occurred previously when employees made mistakes and the sales and stock spreadsheet was not updated accurately. Another problem that’s been putting unnecessary strain on the business is the fact that customers request comic books, and because of the lack of an efficient system and database it takes employees very long to manually locate the comic books in the store which causes the customers to wait very long to receive an answer to their request.

When a comic book has been sold, the necessary details needs to be recorded of the sale and the comic book needs to be marked as sold in the system.

Solutions for the company’s current problems includes, implementing an automated system that includes a database with the necessary support for all functionality. With a brand, new functioning system, it is also necessary to provide user documentation in order for the staff to be able to use the system with ease.

Investing in an automated system as proposed, will solve many problems as well as errors in day to day processes. The system will also make “The Comic Book Store” a lot more efficient and accurate, it will also allow staff members to save time on their daily tasks and will result in the business being more productive.

## Aim

The aim of this project is to upgrade and implement The Comic Book Store’s system from excel spreadsheet to more effective automated system.

## Objectives

The following goals are seen as the objectives of the project.

* Obtain requirements and necessary information
* Setup System proposal
* Identify user requirements
* Identify required hardware and software
* Conduct and document feasibility study
* Make a list of recommendations to present to client
* Identify an appropriate methodology, techniques and tools to apply
* Identify possible entities and perform entity relationship modelling
* Identify relationship types for the entities
* Determine attribute domains
* Determine candidate, primary and alternative key attributes
* Develop and implement system according to planning documentation
* Apply software testing methods
* Evaluate final system

## User requirements

Functional:

* System Interface:

minimalistic design, as simple and user friendly as possible

Comic Books:

Able to add/update/view/export PDF

Employees:

Able to add/update/deactivate/view/export PDF

Customers:

Able to add/update/export PDF

Authors:

Able to add/update/view

Publishers:

Able to add/update/view

Non-Functional:

* Validation: basic validation which includes the use of Regular Expressions in order to ensure that input into the system does not reduce the integrity of the system.
* Security: Only activated business employees can access the system
* Administrator Security: Admin log in to access employee records

Technical:

* Current Software: currently have windows 7 and Office installed
* Current Hardware: currently have basic office setup for one computer
* Future Software: windows 7, adobe pdf reader and system application installed
* Future Hardware: 2 basic desktop computers
* Developing language: C#
* Database development: MySQL

## Hardware and software requirements

Hardware and Software Requirements for developer:

I require one computer for the software developer.

On the developing computer, the following is required:

* Windows operating system software
* Microsoft Visual Studio Software, which will be used to develop the application side of the system, this is where the programs will be written
* MySQL Software, which will be used to develop the database side of the system which will hold all the records of the system
* Microsoft Office Software which include Word, which will be used to supply documentation of the system.
* OpenOffice Draw Software, which will be used to create diagrams which is part of the planning process
* HP printer driver software, which will be used to be able to connect to the printer
* Keyboard, mouse, monitor, at least 4GB RAM, at least 30GB hard drive memory

Additionally, a HP printer is required to be able to print user documentation as well as necessary documentation which supports the planning process

Hardware and Software Requirements for Customers:

There is one basic desktop computer that the business’ employees use to use the excel spreadsheet.

On the business’ computers, the following is required:

* Windows Operating System Software
* Adobe PDF Reader, which will be used to open reports generated by the system
* Microsoft Office Software which includes Excel, which is currently used for basic tasks and will be used for smooth integration of new system
* HP printer driver software, which will be used to be able to connect to the printer
* Keyboard, mouse, monitor, 4GB RAM, at least 75GB hard drive memory

Additionally, a HP printer is required, which will be used by the employees to be able to print generated reports and documentation.

## Schedule

Find the Gantt Chart in Addendum A.

(Smartsheet Blog. 2017)

## Constraints

Constraints for the project includes the following:

- Time Management, in terms of keeping to the schedule.

- Training users to use the system effectively.

- Resources in terms of access to information about similar systems.

- Resources in terms of information about techniques and tools for planning and analysis.

## Feasibility study

|  |  |  |  |
| --- | --- | --- | --- |
| Feasibility criteria | Ranking | System option 1:  Purchase commercial off-the-shelf package for member services | System option 2:  Create new application in-house using new business standard |
| **Operational feasibility** | 30% | Only member services requirements would be available and supported. The business processes that currently take place would have to be modified in such a way to take full advantage of the software and what it offers.  Score: 65 | Creating a new system ensures that it is custom made to serve every user-required function as well as all the business processes that needs to take place  Score: 100 |
| **Technical feasibility** | 30% | Packages available have frequent new versions available, but at extra costs for each upgrade. The development of the product is a risk. Monthly fees are added to the product to receive technical support in the case of a faulty system or if the users have queries.  The integration of the system is quite complex so Java experts would have to be hired or trained in order to perform modifications.  Score: 45 | Expertise:  The solution includes creating the application in C#. The development team already have the skills to create the application in C# and therefore there will be no problems when creating the system.  Technology:  The current computers are very basic but will easily be able to complete the tasks at hand.  Score: 95 |
| Feasibility criteria | Ranking | System option 1:  Purchase commercial off-the-shelf package for member services | System option 2:  Write new application in-house using new company standard |
| **Economic feasibility** | 30% | Cost: R20 000 (Approximately)  Benefits:   * Proven existing solution and ready to be used. * No need for constant maintenance. * Proven track record.   Score: 80 | Cost: R 25 000  Benefits:   * The company has full ownership of the final product as well as its source code and the knowledge gained while developing it. * Custom made for the business requirements of the company * Provides full control over the system and its functionality * Provides the business with a greater competitive advantage compared to a bought solution.   Score:80 |
| **Schedule feasibility** | 10% | 3 Months  Score: 85 | 2-3 Months  Score: 85 |
| Ranking |  | 65.5 | 91 |

## Recommendations

I recommend System option 2, the In-house development option.

With In-house development, you will receive a newly designed system that meets your specific needs and requirements.

The Comic Book Store will have full ownership of the final product, as well as its source code and the knowledge gained while developing it. If the off-the-shelf-package is used, unfortunately only the vendor has the rights to the code.

Using System Option 2, the In-House development option, there is a relationship between the development team and the user, which will helpful in terms of communication and expectation delivery, as well as immediate problem solving if you might come across any issues in the future.

As the system is developed for your specific needs, it provides you with a greater competitive edge above your competitors and also provide you with a better customer service.

With in-house development, the system functionality is determined by you, compared to off-shelf-package the system functionality is determined by the vendor which might not always meet your requirements and needs perfectly.

## Methodology

**The Application:**

The following methodology will be used for the application itself.

Waterfall Methodology:

In the waterfall model every stage must be finished thoroughly before the following stage can start. This sort of methodology or model is fundamentally utilised small project and there are no unverifiable prerequisites. Toward the end of every stage, a survey happens to find out whether the plan is on the right path and whether to proceed or dispose of the plan or project. In this model the testing begins strictly after the development is finished (Istqbexamcertification.com, 2016). Stages are not allowed to overlap one another in the waterfall methodology. The advantages of this model includes the following; this model is basic and straightforward to use. It is extremely easy to oversee due to the fact of the inflexibility of the model – every stage has it’s particular deliverables and a survey procedure. The stages are started as well as finished each in their appropriate turns. The waterfall model functions perfectly for smaller undertakings where necessities are thoroughly understood. The waterfall model can be used when; the requirements, technology and innovation are understood, fixed, and altered; when the definition of the product is stable and there are no vague prerequisites and; when abundant assets with required skill are accessible uninhibitedly and the plan is short (Istqbexamcertification.com, 2016).



**The Database:**

The methodology that will be used for the database itself will be discussed here.

The methodology for the database is known as the database design methodology.

This database design methodology is specifically for relational databases.

This methodology consists of three main phases known as conceptual, logical and physical phases.

The following diagram is visual representation of the phases as well as more detailed steps that supports the phases.(Magutsa,2017)

Step 9: Build and integrate an application

Step 7: Consider the introduction of controlled redundancy

Step 8: Monitor and tune operational system

Step 6: Design security mechanisms

Step 4.1: Analyse transactions

Step 4.2: Choose file organisations

Step 4.3: Choose indexes

Step 4.4: Estimate disk space requirements

Step 5: Design user views

Step 3: Translate logical data model for target DBMS

Step 2.1: Derive relations for logical data model

Step 2.2: Validate relations using normalisation

Step 2.3: Validate relations against user transactions

Step 2.4: Check integrity constraints

Step 2.5: Review logical data model with user

Step 2.6: Merge logical data models into global models.

Step 2.7: Check for future growth

Step 2: Build and validate logical data model

Step 1.1: Identify Entity Types

Step 1.2: Identify Relationship types

Step 1.3: Identify and associate attributes with entity or relationship types

Step 1.4: Determine attribute domains

Step 1.5: Determine candidate, primary and alternate key attributes

Step 1.6: Consider use of enhanced modelling concepts

Step 1.7: Check model for redundancy

Step 1.8: Validate conceptual model against user transactions

Step 1.9: Review conceptual data model with user

Step 1: Build a Conceptual Data Model

Step 3.1: Design base relations

Step 3.2: Design representations of derived data

Step 3.3: Design general constraints

Step 4: Design file organisations and indexes

# References

Istqbexamcertification.com. (2017). *What is Waterfall model- advantages, disadvantages and when to use it?* [Online] Available at: <http://istqbexamcertification.com/what-is-waterfall-model-advantages-disadvantages-and-when-to-use-it/> [Accessed on: 26 February 2017].

Smartsheet Blog. (2017). Where Do You Find the Best Gantt Chart Spreadsheet Templates?. [Online]. Available at: <https://www.smartsheet.com/blog/where-do-you-find-best-gantt-chart-spreadsheet-templates>. [Accessed on: 26 February 2017].

Magutsa, N. 2017. Advanced Database Systems. CTI Education group.