

Computing Coursework

Henry Mason

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Chapter 1

Analysis

1.1 Introduction

1.1.1 Client Identification

My client is Susannah Mason, she is 50 years old and has little usage of computers, except when having to order new stock for the pharmacy. currently the pharmacy uses computerised methods to submit orders to the warehouse.

Susannah is a pharmaceutical manager at Spire Healthcare in Impington
by creating this program it would speed up the process making keeping track of
and ordering of new equipment and stock a lot easier for her

1.1.2 Define the current system

The current system uses mostly computer based order submission and price checks but the orders have to be put through the computer manually

1.1.3 Describe the problems

The orders for the stock take too long to submit and all stock has to be counted
by hand

1.1.4 Section appendix

Henry Mason Candidate Number: 3634 centre number: 22151

1.4. Section Appendix

Questionnaire

1. please give a brief description of your job Title?
Pharmacy manager of the village Pharmacy.
I am responsible for dispensing and stock control.
2. please give an explanation on what computer programs you currently use?
Computer system is used to maintain patient records
and produce labels for medication.
3. with the current system in use at the moment,(if any), have you found any problems?
Current stock control system is via a card base system which is labour intensive and makes accurate stock levels difficult.
4. what would you like the program to do?, what are the main function of your current computer program?
I need a programme which will maintain information with regards to the amount of stock held. It would also produce an order at the end of each day.
5. how much computer usage do you have both inside and outside of your worklife?
1 computer at home and 1 at work.

The client confirms that this information is accurate:

date: 24/10/2014

Henry Mason

Figure 1.1: questionnaire

1.2 Investigation

1.2.1 The current system

the current system at the pharmacy is a data base that holds the information of over 500 items. the data base holds the price the mass the desription and how much is in the pharmacy at that point in time. when an item is taken out of stock the pharmacist has a card to say that an item has been removed from the storage cupboard. sometimes the system deosn't update even when the card is swiped to say a product has been removed

Data sources and destinations

Data Source	Travels via	destination
doctor	gives prescription	patient
patient	requests medicine	pharmacist
pharmacist	checks stock	stock system
stock system	gives information	pharmasict
pharmacist	collects medication	medicine cupboard
pharmacist	gives medicine	patient

Table 1.1:

Algorithms

i will be using quite a few algorithms for this assignment

Algorithm 1 if statement

```

1: FOR EACH item to check = 0to50 IN
2:   IF THENDOitem = lowest minimum amount
3:     "you don't need any more tablets"
4:   ELSE
5:     "you need more tablets"
6:   END IF
7: END FOR

```

IF (item = lowest minimum amount) THEN order more item

ELSE check next item

END IF

this other algorithm will be used to calculate the exact price of all of the order

```
if order submitted = True THEN calculate order
ELSE restart program
END IF
using the information in the list Items the exact price is calulated
IF item in Items add price item
ELSE add price 0
END IF
```

Data flow diagram

Input Forms, Output Forms, Report Formats

1.2.2 The proposed system

the proposed system will be used to order, check stock and be informed as soon as anything leaves the pharmacy the data base will be updated of the removal, as well as if the product falls below a certain point it will be program to replace the stock by ordering new stock form the warehouse automatically but the order will go through a master control point before being sent off

Data sources and destinations

data Source	travels via	destination
stock information	request for stock information	pharmacy computer
stock price	request stock price	pharmacy computer
show stock info	display info	pharmacist

Data flow diagram

Data dictionary

Data	Uses	Name
------	------	------

Volumetrics

1.3 Objectives

1.3.1 General Objectives

- to make a stable system that checks, updates, restocks and sends payment for the ordered items
- to give the system to auto restock items when they fall below a certain number of items
- to graph which items are being bought or used faster and updates the resocking system accordingly

1.3.2 Specific Objectives

- to design a program that will make sorting through the items at the pharmacy as well as store the price and item location in the pharmacy as well as the amount.

1.3.3 Core Objectives

- self updating stock system
- easy accessability
- order more items to refill stock

1.3.4 Other Objectives

- the stock keeping on the program should be accurate. E.G. showing how much one tablet of paracetamol costs
- the system must have automatic communication between the wholesale (warehouse) and the pharmacy

1.4 ER Diagrams and Descriptions

1.4.1 ER Diagram

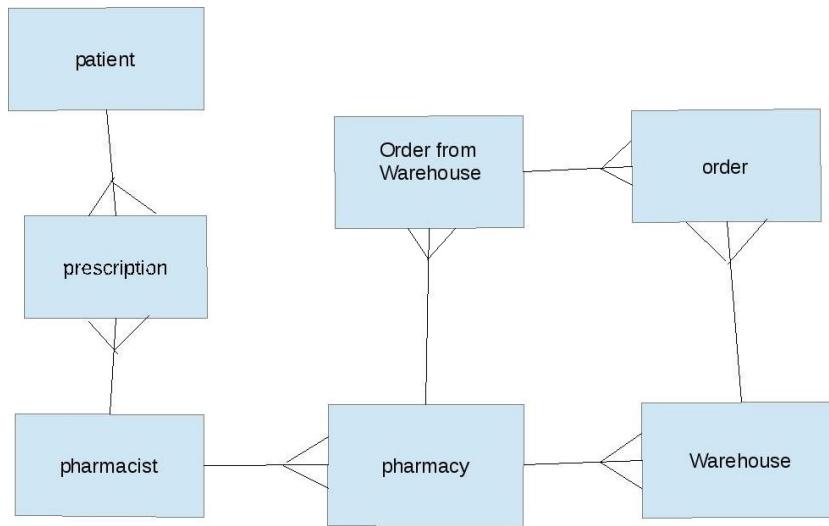


Figure 1.2: entity relationship diagram

1.4.2 Entity Descriptions

- Client(clientID, PharmacyNum, surname, FirstName, PhoneNumber, Address, Postcode)
- Pharmacist(PharamacistID, *PharmacyNum*, Surname, FirstName, PhoneNumber, Address, Email)
- Pharmacy(PharmacyNum, PharmacyAddress, PharmacyPhoneNumber)
- Warehouse(WareHouseNum, *PharmacyAddress*, WareHouseAddress)
- Order(OrderNum, *WareHouseNum*, *PharmacyLocation*, OrderDate, size)

1.5 Object Analysis

1.5.1 Object Listing

- Client
- Pharmacist
- Pharmacy
- Warehouse
- Order

1.5.2 Relationship diagrams**1.5.3 Class definitions****1.6 Other Abstractions and Graphs****1.7 Constraints****1.7.1 Hardware****1.7.2 Software****1.7.3 Time****1.7.4 User Knowledge****1.7.5 Access restrictions**

the proposed system should only be accessible and privileges to the people in pharmacy, as well as the system should be password protected to ensure no body outside the system can access the stock information.

1.8 Limitations**1.8.1 Areas which will not be included in computerisation****1.8.2 Areas considered for future computerisation**

1.9 Solutions

1.9.1 Alternative solutions

solution	advantages	disadvantages
created program that checks	solved	hopwfully

Table 1.2:

1.9.2 Justification of chosen solution

I have chosen to the Python 3.2 desktop application with a GUI and SQL' solution. My reason for using this method is:

- the application will be specific for pharmacy which will be updated at the start of every week and will continuously keep track of the database where the old system.
- the database used will take up less space required to store the data.
- due to the databases size making back ups is very easy so if the system.

Chapter 2

Design

2.1 Overall System Design

- 2.1.1 Short description of the main parts of the system
- 2.1.2 System flowcharts showing an overview of the complete system

2.2 User Interface Designs

2.3 Program Structure

- 2.3.1 Top-down design structure charts
- 2.3.2 Algorithms in pseudo-code for each data transformation process
- 2.3.3 Object Diagrams
- 2.3.4 Class Definitions

2.4 Prototyping

2.5 Definition of Data Requirements

- 2.5.1 Identification of all data input items
- 2.5.2 Identification of all data output items¹⁴
- 2.5.3 Explanation of how data output items are generated
- 2.5.4 Data Dictionary
- 2.5.5 Identification of appropriate storage media

2.9.1 Outline Plan

Test Series	Purpose of Test Series	Testing Strategy	Strategy Rationale
Example	Example	Example	Example

2.9.2 Detailed Plan

Test Series	Purpose of Test	Test Description	Test Data	Test Data Type (Normal/ Erroneous/ Boundary)	Expected Result	Actual Result	Evidence
Example	Example	Example	Example	Example	Example	Example	Example

Chapter 3

Testing

3.1 Test Plan

3.1.1 Original Outline Plan

Test Series	Purpose of Test Series	Testing Strategy	Strategy Rationale
Example	Example	Example	Example

3.1.2 Changes to Outline Plan

Test Series	Purpose of Test Series	Testing Strategy	Strategy Rationale
Example	Example	Example	Example

3.1.3 Original Detailed Plan

Test Se- ries	Purpose of Test	Test Descrip- tion	Test Data	Test Data Type (Nor- mal/ Er- roneous/ Boundary)	Expected Result	Actual Re- sult	Evidence
Example	Example	Example	Example	Example	Example	Example	Example

3.1.4 Changes to Detailed Plan

Test Series	Purpose of Test	Test Description	Test Data	Test Data Type (Normal/ Erroneous/ Boundary)	Expected Result	Actual Result	Evidence
Example	Example	Example	Example	Example	Example	Example	Example

3.2 Test Data

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3.2.1 Original Test Data

3.2.2 Changes to Test Data

3.3 Annotated Samples

3.3.1 Actual Results

3.3.2 Evidence

3.4 Evaluation

3.4.1 Approach to Testing

3.4.2 Problems Encountered

3.4.3 Strengths of Testing

3.4.4 Weaknesses of Testing

3.4.5 Reliability of Application

3.4.6 Robustness of Application

Chapter 4

System Maintenance

4.1 Environment

4.1.1 Software

4.1.2 Usage Explanation

4.1.3 Features Used

4.2 System Overview

4.2.1 System Component

4.3 Code Structure

4.3.1 Particular Code Section

4.4 Variable Listing

4.5 System Evidence

4.5.1 User Interface

4.5.2 ER Diagram

4.5.3 Database Table Views

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4.5.5 SQL Queries

4.6 Testing

4.6.1 Summary of Results

4.10.1 Module 1

Henry Mason

Candidate No. 2634

Centre No. 22151

Chapter 5

User Manual

5.1 Introduction

5.2 Installation

5.2.1 Prerequisite Installation

Installing Python

Installing PyQt

Etc.

5.2.2 System Installation

5.2.3 Running the System

5.3 Tutorial

5.3.1 Introduction

5.3.2 Assumptions

5.3.3 Tutorial Questions

Question 1

Question 2

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5.3.4 Saving

5.3.5 Limitations

5.4 Error Recovery

Chapter 6

Evaluation

6.1 Customer Requirements

6.1.1 Objective Evaluation

6.2 Effectiveness

6.2.1 Objective Evaluation

6.3 Learnability

6.4 Usability

6.5 Maintainability

6.6 Suggestions for Improvement

6.7 End User Evidence

6.7.1 Questionnaires

6.7.2 Graphs

6.7.3 Written Statements