SYNOPSIS

INTRODUCTION

The Project is **"Hospital Management System"** given by **"DR. GANPAT SAWANT'S NOBLE HOSPITAL".** The Project **"Hospital Management System"** is generalized software that steps forward towards computerizing the routine work of the hospital system.

THEORETICAL BACKGROUND :-

1) Existing Working Procedure :-

a) The patient contacts for the doctor's appointment by placing his personal details. Personal information is maintained in the hand-written muster.

b) They maintained the hand-written notes for treatment given to each patient for future reference; backup for such notes is not available.

c) Every time when patient visits them, the particular folder which contains the patient's data is searched, this is very time consuming process.

d) In old system, all the information of patient such as operation details, admission details, discharge details is kept in register, which is hard to maintain and insecure as any document can be lost during the storage of register.

e) On present the authority on the manual bases that took lot of valuable time and possible chances of error or mistake has presented all the bill of material.

REQUIREMENT OF THE SYSTEM :-

1) The time of every activity should reduce considerably.

2) Recently unnecessary records are not to be viewed but should remain in system for possible future use.

3) System should have provisions for different users with their various rights.

4) Records should not be deleted or modified by simple users. Such rights are given to specialized users only. Also read permission should be differing according to the user.

5) System should be easy to sue by the user that is it should be user friendly.

HARDWARE AND SOFTWARE REQUIREMENT :-

1) **PROCESSOR : - 400 MHZ.**

2) **RAM :- 128 MB.**

3) **UTILITIES :- PRINTER.**

4) **OPERATING SYSTEM :- WINDOWS 98, WINDOWS XP.**

5) **FRONTEND :- MICROSOFT VISUAL.**

6) **BACKEND :- MICROSOFT ACCESS.**

OBJECTIVE & SCOPE OF THE PROJECT :-

1) AIM OF THE PROJECT :-

❖ **To automate process involved in hospital management.**

2) OBJECTIVE TO ACHIEVE :-

a) Maintain record of patients. i.e. operation, treatments and other relative processes.

b) Maintain record of staff members.

c) Maintain all details of different wards and beds. i.e. total occupied beds and total vacant beds.

d) Viewing patient's information securely and rapidly.

e) Prepare bill of the patient with total charges.

f) Prepare Discharge Card.

g) Make the legacy process more efficient and fast.

3) SCOPE OF THE PROJECT :-

a) Main objective is to keep track of Hospital Management. Forthcoming automated system should maintain information of patient and staff member.

b) This new system will keep track of document submitted by the patients and all his details like date of admission, date of discharge and about his disease so that the patient will be categorize by his disease also by their age, if the patient is repetitive then the doctor can search quickly about his background and if another operation is to be held then the doctor can make precautions.

c) The advantage of the system is that the doctor can store all the information about the employees under him.

d) One more advantage is that, from previous record doctor can referred the type of treatment carried on the patient hence that makes doctor's job easier.

e) Application should maintain all information of wards and different beds in that ward. And update that information as every admit & discharge process take place.

f) Applications keep track of bed. i.e. which patient has occupied that particular bed, admit date and name of doctor who handle that patient.

g) Application should generate final bill and discharge card.

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7) Make the legacy process more efficient and fast.

8) Reduce all paper works.

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THEORITICAL BACKGROUND

EXISTING WORKING PROCEDURE :-

1) The patient contacts for the doctor's appointment by placing his personal details. Personal information is maintained in the hand-written muster.

2) They maintain the Hand-written notes for treatment given to each patient for future reference; backup for such notes is not available.

3) They use different muster to keep ward detail in which they keep information about different beds i.e. patient admit on that bed, his admit date and all related information of that patient. When that particular patient was discharge they prepare new record fir that particular bed.

4) Every time when patient visits them the particular folder, which contains the patients' data, is search, this is very time consuming process.

5) In old system, All the information of patient such as operation details, patients' admission details, discharge details in kept in registers ,which is hard to maintain and insecure as any document can be lost during the storage of register.

6) If they decide to admit a particular patient then on present authority on the manual bases that took lot of valuable time and possible chances of error or mistake has presented all the bill of material.
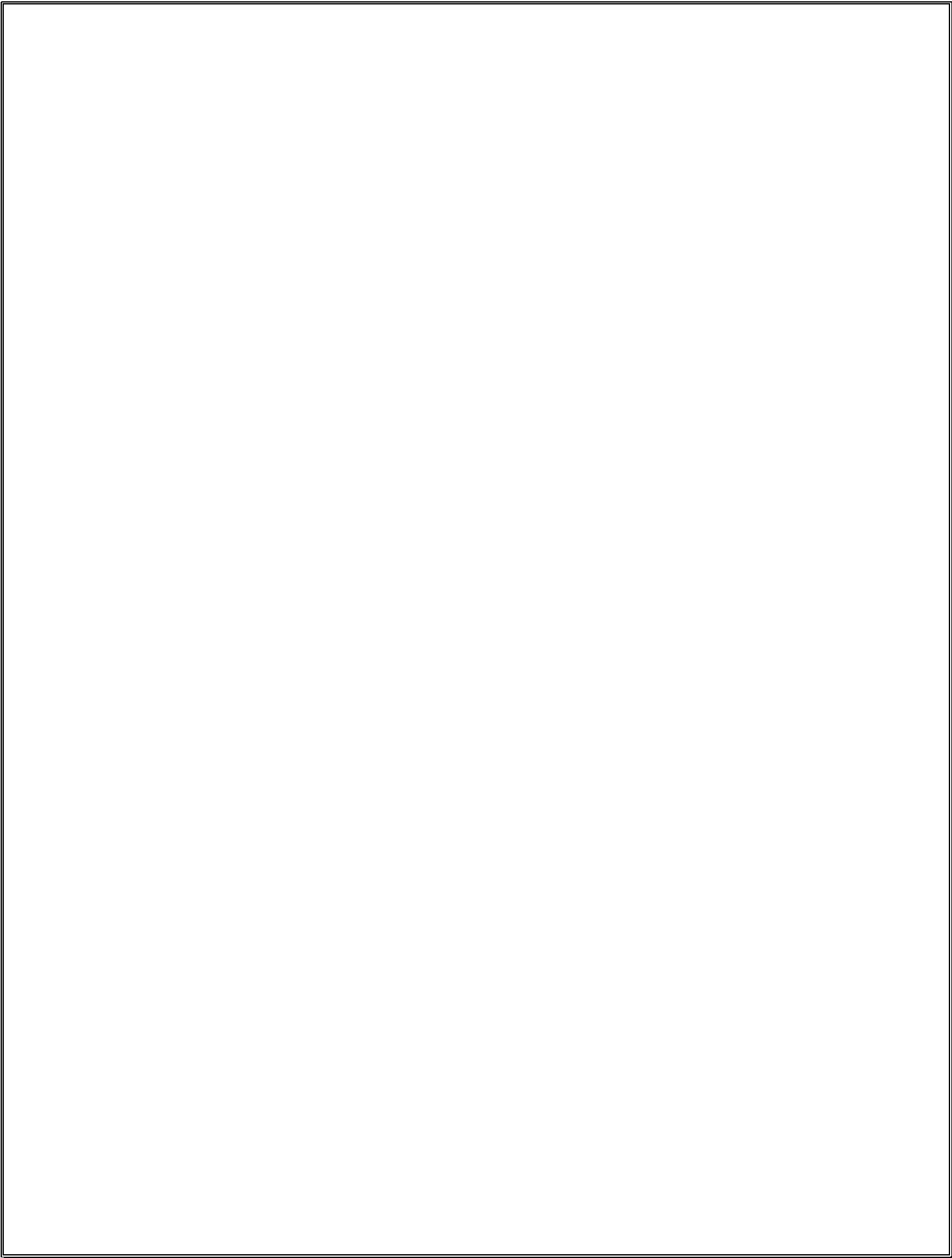
DEFINITION OF THE PROBLEM

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1) In the legacy system all the information that is information related to patients, different wards, employees, admission, discharge are maintained in musters which involves hectic paperwork each patient has certain document and it is very hectic to keep track of all these documents. But these documents are very important.

2) Here the admit and Discharge process are very important depending on admit and discharge date of particular patient further activities are to be planed such as final bill generation, update Bed status etc. as all records are maintained on paper it sometimes become very difficult.

3) In legacy system bed and ward details are maintained in muster. And update or delete it as new patient is admitted or discharged. It increase paperwork and it become very difficult to search particular record of occupied bed, free bed or patient admit on that particular bed.

4) In legacy system if they want to check ward status and detail information of admitted patient then it is very difficult to search particular record from big muster.

5) As all the information is written in same muster it becomes very difficult to keep track of patients which currently admitted.

SYSTEM

ANALYSIS

FACT FINDING METHOD :-

The task of gathering information about the entire process, the flow of data from all the department, the consolidation was carried out by the following techniques.

❖ Interview :-

This method proved to be very useful tool in an information gathering. The proper understanding of current system could be achieved because of the discussion with people, ho including people working in hospital. This gave actual requirement of a user & help in understanding the system.

❖ Onside observation :-

This help in a better understanding of the user expectations from a computerized system. It also enlightened us with many things about the actual flow of data from various sources and its destination.

❖ Record reviewing :-

Examining their existing documents, forms, reports help us to understand existing system better & know the standard operating procedures used in hospital.

All the information required for the database design could be made clearer because of these tools.

USER'S REQUIREMENTS :-

❦ To reduce the work load to keep strong holds on data processing.

❦ To help in maintaining patient details by avoiding method i. e. verbal transaction this can lead to misunderstanding.

❦ To provide immediate reply to the inquiry of the user.

❦ To update patient catalog, bed status to the user.

❦ To reduce the processing time of admission and discharge process.

❦ It saves lot of time of both organization and patient.

❦ It provides current information about patient and different wards to the users.

IN THIS SYSTEM THE MAIN PROCESSES INVOLVED ARE AS FOLLOWS :-

❖ Patient request processing :-

In this process patients information is collected from patient. When patient visit to hospital all his information is collected from him which involves his personal information, his medical information etc.

❖ Admit processing :-

In this process when user decides to admit particular patient all the information is collected in admission form. During this process they check the bed status i.e. whether the bed is empty or not. If a bed is empty then admit the patient on that bed and update status of the particular bed.

❖ Discharge processing :-

In this process all the activities related to discharge process is handled, i.e. when the user decide to give discharge to particular patient, all the related information of that patient is displayed automatically. And after giving the discharge information is updated automatically such as bed become empty. During this process the discharge card could be generated automatically.

❖ Authentication process :-

This process provides user maintenance procedure. It provides facility to change password to each and every user. It provides facility in which only administrator of organization has rights to deal with particular fields such as change charge, change admin password etc.

❖ Final Bill Generation :-

This process allows User to create final bill automatically, so that user can create accurate bill in minimum time. It gives total fixed charges so user can calculate bill with particular details.

DETAILS OF HARDWARE AND SOFTWARE USED :-

❖ **Hardware Specification :-**

- ✓ **Processor :-** Pentium 2.

- ✓ **Hard Disk :-** 10 GB.

- ✓ **RAM :-** 64 MB.

❖ **Software Specifications** :-

- ✓ **Operating System :-** Windows 98.

- ✓ **Software :-**

    - ❧ **Front End :-** Visual Basic 6.0.

    - ❧ **Back End :-** Microsoft Access 2000.

SYSTEM MAINTENANCE :-

❖ User management :- IN this mode user can add user profile i.e. User name and password as well as status (administrator or user). Administrator user has only access to master database. Normal user can do other transactions except master maintenance. User can change password also so as to its user profile.

❖ Log Off :- By using this user can logoff application and can log on as a different user.

➢ **All these are security aspects provided by our system.**

COST
&
BENIFIT
ANALYSIS

Cost & benefit analysis is a Three step process.

❖ **1ˢᵗ step :-**

Estimate the anticipate development & operational cost.

➢ **Development Cost :-**

Cost occurred during the development of the system.

➢ **Operational Cost :-**

Cost that will occur after the installing of the system.

❖ **2ⁿᵈ step :-**

Estimate the anticipate financial benefits.

➢ **Financial Benefits :-**

They are expected annual saving or increase in revenue derived from the installation of the new system.

❖ **3ʳᵈ step :-**

The cost and benefit analysis is calculated based on detailed estimate cost & benefits.

❖ **BENEFIT ANALYSIS :-**

After installing the Hospital Management System following are the benefits expected,

➢ Reducing staff due to automating function or increasing efficiency.

➢ Maintaining constant staff for project handling.

➢ Reducing bad accounts or bad credit losses.

➢ Reducing paper work cost with electronic data exchange.

Methodology used for Testing

TESTING CONCEPT :-

1) ROLE OF TESTING :-

A project is like a load trip, some projects are simple & routine like driving to store in broad daylight. But most project work doing are driving a truck off road in mountains at night those project needs headlights as lights the way.

You illuminate the road ahead so the programmer & managers, however they bicker over the map, can at least se where they are what they about to run over & how close they are to cliff. The details mission of the group varies from company. Behind those details there is common factor.

Testing is done to find information critical decisions about the project or product that are made on basis of that information.

2) TESTING :-

Once source code has been generated software must be tested to uncover many errors possible before to customer.

Its goal is design series of test cases that have likelihood of finding errors software testing technique provide systematic guidance for designing test that :-

    a) Exercise internal logic of software components.
    b) Exercise the I/p & O/p domains of program functional behavior & performance.

Testing phase must maximize the number of errors detected & minimize the number of test cases.

Testing is of two types

    a) Functional
    b) Structure

Functional testing has

    a) Equivalence class portion
    b) Boundary value analysis
    c) Cause effect graphing

Structural testing has

    a) Control Flow Based Criteria.
    b) Data Flow Based Testing.
    c) Mutation Testing.

CODING STANDARD :-

1) TESTING OBJECTIVES

❖ Testing is process of executing program with the intent of finding n error.
❖ A good test case is one that has high probability of finding an as yet undiscovered error.
❖ A successful test is one that uncovered an as undiscovered error.

a) White Box Testing

White Box Testing some times called glass box testing is test case design method that uses control structure of procedure design to derive test cases. Using White Box testing methods derives cases that :-
➢ Guarantee that all individual paths within module have been exercise at least once.
➢ Exercise all logical decisions on there true & false sides.
➢ Exercise all loops at there boundaries & within there optional bound.
➢ Exercise internal data to ensure there validity.

b) Black Box Testing

Black Box Testing also called behavior testing focuses on functional requirement of software. Black Box testing enables the software engineer to derive the set I/p condition that will fully exercise all functional requirement of program. Black box testing attempt to find in following categories:-
➢ Incorrect or missing function.
➢ Interface error.
➢ Error in data structure or external database access.
➢ Behavior or performance error.
➢ Initialization & termination error.

TEST CASES :-

Test cases are good in revealing the presence of faults Successful in implementation of test cases implies that there are no errors in program .Test cases should be minimize as they are expensive in case of money & efforts. Primary objectives of test cases are to ensure that if there is an error or fault in program it is exercise by the test cases. An ideal test case set is one that succeeds only if there are no errors in the program. One possible ideal set of test case is one that includes all possible I/p to the program & is called exhaustive testing. A test case is good if it detect in undiscovered error in program.

Testing Approach (Bottom up/Top Down)

1) INTEGRATION TESTING :-

Integration testing is a systematic technique for concluding the program structure. While at some time conducting test to uncover errors associated with interfacing. The objective is to take unit testing component & build a program structure that has been detected by design. In big bang approach, all components are combining in advance & the entire program is tested a whole. Increment integration is an anti thesis of big bang approach where the program is tested & constructed in small increments where errors are easy to correct & isolate, interfaces are more likely to be tested completely & systematic test approach may be applied.

2) TOP DOWN INTEGRATION :-

Top down integration is incremental approach for construction of program structure where modules are integrated by moving download through the control hierarchy, beginning with the main control module.

The top down integration strategy verifies major control or design points in well factor program structured decision making occurs at upper level in the hierarchy & is there for encountered first in top down integration approach if major control problems do exists, early recognition is essential.

Top down strategy sounds relatively uncomplicated, but in practice logistical problem may arise.

The most common of problems occurs when processing at low level in hierarchy is required to adequately test upper levels.

3) BOTTOM UP INTEGRATION :-

Bottom up integration as it name begin construction & testing with atomic modules. As the components are integrated from bottom up, processing required for components subordinate to given level is always available & drawbacks of top bottom approach are eliminated. If the top two levels of program structure are integrated top down, the integration is very fully implied.