A

Project Report

On

**“Medical Representative Management System”**

**V.B.S. Purvanchal University, Jaunpur**

***In partial fulfillment of requirement of the degree of***

**Bachelor of Computer Application**

**Prepared By: Project Supervisor:**

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**2012 – 2013**



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**CERTIFICATE**

This is to certify that Nitin Shukla pursing BCA 5th Sem from this institute, has prepared the project report entitled **“Medical Representative Management System”** in partial fulfillment of the degree of Bachelor of Computer Application from V.B.S. Purvanchal University, Jaunpur, for the session 2011-2012. This project is based on bona fide work undertaken by Nitin Shukla pursing, under my supervision during the course of fifth semester.

I recommended that this project may be sent for evaluation.

Mr. Ajit Pratap Singh Mr. AMIT PRATAP

Head Programmer

Department of Computer Application

**DECLARATION**

I**, Nitin Shukla** hereby declare that this project report on “Medical Representative Management System” has been prepared by me under the supervision of Mr..Amit Pratap This research project report is my bona fide work and has not be submitted in any from to any university or institute for award of any degree or diploma prior to the mentioned date. I bear the entire responsibility of this project report.

**Nitin Shukla**

B.C.A. 3rd YEAR

Department of Computer Application

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**PREFACE**

**ABOUT PROJECT:-**

The business organization has evolved as one of the most critical and integrated components of modern society. To manage a business, organization need resources like manpower, material etc; but as the size and complexity of organization increases, it is faced the task of managing large volume of relevant data as well.

Every organization has to maintain large volume of data pertaining to its products, people, customers, suppliers and other related entities. This data needs to be maintained in such a manner that it is easily available and can presented in desired format. MS-Access or Oracle is one package that has gained increasing acceptance as a database management tools. Starting with simple data features, one can create complex data-handling application. In business, computers are widely used in areas of accounting among all business function. I base functions can also deals with large volume of dynamic data, which makes them ideal targets for computerization. Thus, computer is not allowing traditional data processing task to perform much faster and more accurate but is also encourages the use of new and different methods for the new generation. Report system”.

So keeping this in view I have made a project on “Medical Representative Management system”. The Documentation of the software covers all the related matters to a “Medical Representative”. This documentation of the software introduces the concept of business system. Various facilities in available in computer for capturing, storing, retrieving and transmitting data in a computerized data processing system. It also covers the concept of computer files used in data processing. These include various types of data files and their organization. It also introduced principles and techniques of programming or program definition, various steps in program development, designed technique and object oriented programming approach.

**ACKNOWLEDGEMENT**

The software project **“Medical Representative Management System”** is an original work of mine, but I would never have been able to complete it alone on my own. I always needed help band support to complete it. This help and support came in many forms from different people.

So, I have a long list of people to thank to.First of all, I would like to thank my supervisor, Mr.Amit Pratapunder whose guidance I completed the software project. Without his support, it was literally impossible to complete it. His guidance was like a streak of light on a no-moon night to me. It was of immense importance. It was he who explained the topic in detail to me, told me about me in marking this software project presentable.

I would like to thank **Mr.Amit Pratap** who taught me about database management system what it is various sources from where I could get the information related to the topic and also helped me in acquiring and gathering information. It was he who corrected my faults at each and every step and helped that how it functions. Database Management System helped me a lot in constructing E-R Diagram and tables. A word of thanks toMr. **Bipin Bihari,** who taught me about Software Engineering without that designing, was not possible. I would like to thanks Mr.**Amit pratap,** who taught me a lot and gave a detailed and sound knowledge about all steps followed to make this project.

It’s my duty to thank all the respondents who out of their precious time spared some time for me. Their contribution is the greatest because without their support, it was impossible to prepare this software project. Their responses are the base of this report so they need a special word of thanks **NITIN SHUKLA**

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**ABOUT**

**PROJECT**

**1. INTRODUCTION**

My project, Medical Representative Management System is designed to cater to the very special needs of a pharmaceutical company. The MR is the fulcrum of the marketing and market research activities of a pharma company. The MR introduces a new product , markets it ,and also provides feedback from the Doctors , Patients , Chemists on its impact both medical and financial.

**ABOUT A Pharma Company:**

The marketing of drugs and pharmaceuticals is very different from that of any other product or service. A drug is never advertised, and never sold without a prescription. The product is invariably marketed through the Medical Management through visits to doctors, via Seminars, discussions and demonstrations, or via advertisements in select Medical Magazines. Therefore the activities of the MR are central to the company. .

**The Present System:**

As described earlier, the present system is time consuming, tedious and error prone. Potentially suspicious entries are hard to detect and the job of seeking clarifications is almost impossible owing to the delays involved. Therefore it is possible for the MR to shirk work and file wrong entries.

**Time Consuming Process:**

The process of detecting important trends and other relevant data analysis from the filed reports is done manually, and is very tedious and error prone.

**MR Reporting System:**

The MR Reporting System provides extensive and instant data analysis capabilities so that market trends can be detected easily and fast, allowing the company to react with due speed.

**Miscellaneous:**

Miscellaneous part from those limitations the biggest drawback of the existing was to need to do manual work and keep various registers. If they are not updated then there will be certain conflicts in the entire system, which would reduce the efficiency of the management system.

**Initial Requirements**

**2. INTIAL REQUIRMENT:**

When a project is started an initial investigation is carried out. During this phase of study users need has recognized and other requirements are determined. Once the problem has been defined a study is carried out to select the best system i.e. a feasible system that meets performance requirements. So Feasibility is the determination of whether or not a project is worth doing and the process followed in making this determination is called a Feasibility Study. In order to conduct the feasibility study we have seven distinct, but inter-related types of feasibility, these are Technical feasibility, Operational feasibility, Economical feasibility, Social feasibility, Management feasibility, Legal feasibility and Time feasibility. Out of these seven three are key feasibilities to consider, these are:

* Technical Feasibility
* Economical Feasibility
* Operational feasibility

## Technical feasibility:

This is concerned with specifying equipment (hardware) and software that will successfully satisfy the user requirement. It consider the following facts:

The facility to produce outputs in a given time

Response time under certain conditions

Ability to process a certain volume of transaction at a particular speed

Facility to communicate data to distant location

While examining technical feasibility, huge importance is given to the configuration of the proposed system. The configuration should give the complete picture about the system’s requirement such that what kind of hardware is required and how these units are interconnected so that they could operate and communicate smoothly. The proposed system can be run on currently existing software and hardware.

**The minimum required configuration of the system is-**

|  |  |
| --- | --- |
| **Software** | **Hardware** |
| WINDOW XP | core2 dual |
| Front End Visual Basic | 500 MB RAM or More |
| Back End Microsoft Access |  |

**Economical feasibility:**

Since cost plays quite an important role in deciding the new system, it must be identified and estimated properly. So economic analysis is the most frequently used technique for evaluating the effectiveness (economical feasibility) of a proposed system. To determine the economical feasibility of the system a cost/benefit analysis is to make. This procedure is to determine the benefits and savings that are expected from a proposed system and compare them with costs. Four facts that plays an important role in deciding economical feasibility of the proposed system are as follows: Cost-saving benefits, Cost-avoidance benefits, Improved-performance benefits, Improved-information benefits, Hence the proposed system is economically feasible.

## Operational feasibility:

It is mainly related to human organizational aspects. The points to be considered are:

What changes will be brought with the system?

What organizational structures are disturbed?

What new skills will be required?

Do the existing staff members have these skills if not, can they be trained.

**User’s requirement:**

**Software Specification:**

User interface would be used to provide information necessary to generate a new claim also update information.

1. Front End - Visual Basic 6.0

2. Backend - MS-Access 2000

3. O/S – Windows-XP

**Hardware Specification:**

RAM - 1 GB

Mother board - 31 GT

Hard Disk - 160 GB

Processor - 1.8 GHz Dual Core

Mouse - Optical

Keyboard - Odyssey

Monitor - T.F.T. 18 ” HP

U.P.S. - Multi-tech

**System Analysis**

**3. SYSTEM ANALYSIS:**

System analysis is the process of gathering and interpreting facts, diagnosing problems and using the information to recommend improvements on the system. System analysis is a problem solving activity that requires intensive communication between the system users and system developers.   
System analysis or study is an important phase of any system development process. The system is studied to the minutest detail and analyzed. The system analyst plays the role of an interrogator and dwells deep into the working of the present system. The system is viewed as a whole and the inputs to the system are identified. The outputs from the organization are traced through the various processing that the inputs phase through in the organization.   
A detailed study of these processes must be made by various techniques like Interviews, Questionnaires etc. The data collected by these sources must be scrutinized to arrive to a conclusion. The conclusion is an understanding of how the system functions. This system is called the existing system. Now, the existing system is subjected to close study and the problem areas are identified. The designer now functions as a problem solver and tries to sort out the difficulties that the enterprise faces. The solutions are given as a proposal. The proposal is then weighed with the existing system analytically and the best one is selected. The proposal is presented to the user for an endorsement by the user. The proposal is reviewed on user request and suitable changes are made. This loop ends as soon as the user is satisfied with the proposal.

**Business Need:**

In the world we are growing for globalization day by day with the development in IT resources and advancement, by using latest technologies every organization wants to beat its competitors and want to grow. Enterprise Resourceful Planning is the need of today’s organization. Survival on manual system is difficult so, that’s why organization of the corporate world wants to computerize their departments. The modules should be complete database driven and interactive that should provide the proper information about the Placement and Training Organization. Success of any system depends up to a large extent on how accurately a problem is defined, thoroughly investigated and properly carried out to the choice of solution. Analysis is the only phase in which the requirements for the new system are identified. System analysis is a detail study of the various operations performed by a system and their relationship within and outside of the system. The question is: what must be done to solve the problem? One aspect of analysis is defining the boundaries of the system and determining whether or not a candidate system should consider other related system. During analysis data are collected on the available files, decision points and transactions handled by the parent system. Data flow diagram, interviews, onsite observations, questionnaires are used as a logical system model and tools to perform the analysis.

**Objective of Project:**

* The current system is based on paper report being filed by the MR and handed over to the HQ or by courier. This leads to costly delays in transition and processing, and relevant data analysis is also error prone.So with the help of computer M R make a database of his\her report consume by Doctor, Medical store and other resources and send report to Pharma Company.
* Every M R has to maintain large volume of data pertaining to its products, doctors, customers, medicalshop where M R advertise their medicine and also maintain the feedback from Doctor’s medicalshop’s and other related entities. This data needs to be maintained in such a manner that it is easily available and can presented in desired format.

**Existing System description:**

**Existing System Details:**

The existing system, for managing the query of a customer corresponding procedure is carried out manually. Whenever customers arrive in a hotel to enquire about vacant room, then customer is provided with the requisite detail of the rooms. The main problem is storage. For storing each of data there are number of registers used and a number of employee takes a lot of time to do this work. Searching of record in manual system is very difficult to manage each register and protecting them from unauthorized people, fire and external calamity.

**Problem Faced with Existing System:**

The manual system seams to be time consuming and less efficient with respect to the following:

1. Maintenance of large amount of data is a tedious job.
2. Storing all relevant documents concerned with the customers is also a cumbersome job.
3. To obtain details of any customer in case of checkout involves a lot of hard work.
4. No way to check the different queries and services, which may arise at various stages of processing.

**LIMITATIONS OF EXISTING SYTEM:**

Existing system hotel management limitation is room availability, floor information, security of personal information, advance payment, customer search information and evaluation of rent with proper government taxes etc. The existing system had several limitations and drawbacks, which led the hotel to switch to a better and effective system-

* Low functionality
* Erroneous input/output
* Portability problem
* Security problem
* Data redundancy
* Processing speed
* Financial problem
* Manual errors
* Complexity problem

1. Limit customer.

2. The use of man power in this so high.

3. Quick report on the current status will be very time consuming and the chances of error will be high.

4. Need a lot of paper work.

5. Need a much skilled person to take care all the activities.

6. Calculate mistake are another problem for the system and have drawback of accuracy of result obtained

**Proposed System:**

In order to make the site dynamic and more interactive we have tried to include a database link to our college website. Hence the recruiters have been provided with the facility to post their eligibility criteria, vacancies and salary packages. In response to which a student can submit his willingness to appear for the drive along with his personal details. Provision has also been made to display the latest events and announcements associated with the college online. We have developed our project using the three tier architecture which uses the following languages.

**Benefits:**

**Cost Benefits Analysis:**

Cost Benefits analysis is performed to ascertain whether the costs in the system match with the benefits they will provide. The various end of costs incurred in the development and implementation of the system include:

* Hardware costs incurred in purchase of hardware, i.e., computer and its peripherals.
* Personnel cost include the salaries of the EDP staff as well as the perks of personnel involved in the development of the system.
* Facility costs are expenses incurred in the preparation of the physical site like flooring, wiring, lighting etc.
* Operation costs include all costs associated with the day-to-day operation of the system.
* Supply costs are variable costs that increased use of paper, ribbon, disks etc.

The system is expected to provide benefits. The first is to identify each benefit and then assign a monetary value to it for cost/benefit analysis. Both tangible and intangible benefits are considered as discussed earlier.

**Procedure for Cost-Benefit Analysis:**

The determination of cost and benefit can be enumerated as under:

* Identify the various costs and benefit pertaining to give project.
* Categorize the various costs and benefits for analysis.
* Select and method for evaluation.
* Interpret the results of evaluation.
* Take action.
* **Advantage :**

1. All the procedure in this project is automatic accept the of data from the user.

2. the project given the user-friendly environment, which gives the way of working in more efficient manner.

**Feasible Study with Report:**

The end product, i.e. the documentation after feasibility study report document. It contains the following sections:

Covering report, which briefly indicates the management about the nature, general findings and recommendations to be considered.

Table of contents

Narrative explanation of the purpose and scope of the project, the reason for undertaking feasibility study, and the department involved or affected by candidate system

Detail findings outline the methods used in the present system. Effectiveness, efficiency operating costs, description of objectives and general procedures of the candidate system.

Economic justification details point-to-point cost comparisons and preliminary cost estimates for the development and operation of the candidate system. Return on Investment (ROI) is also given.

Recommendations and conclusion suggest to management the most beneficial and cost effective system.

Appendices document are the memos and data compiled during the investigation.

**Software Requirement Specification**

**4. Software Requirement Specification:**

A requirements specification for a software system – is acomplete description of the behavior of a system to be developed. It includes a set of [used cases](http://en.wikipedia.org/wiki/Use_case) that describe all the interactions the users will have with the software. In addition to use cases, the SRS also contains non-functional (or supplementary) requirements. [Non-functional requirements](http://en.wikipedia.org/wiki/Non-functional_requirements) are requirements which impose constraints on the design or implementation (such as [performance engineering](http://en.wikipedia.org/wiki/Performance_engineering) requirements, [quality](http://en.wikipedia.org/wiki/Quality_%28business%29) standards, or design constraints).

Requirement documentation is very important activity after the requirements elicitation and analysis. This is the way to represent the requirements in a consistent format. Requirement document is called **Software Requirement Specification (SRS).**

The software requirement specification is produced at the culmination of the analysis task. This is the way to represent requirements in a consistent format. It is a specification for a particular software product , program or a set of programs that performs certain functions in a specific environment .The function and allocated to software as part of system engineering are refined by establishing a complete information description, a detailed functional and behavioral description, an indication of performance requirements and design constraints, appropriate validation criteria, and other data pertinent to requirements.

Software product, program or set of programs that perform certain functions in a specific environment. There are two important cases regarding SRS: First one, SRS is used to define the needs and expectations of the users. The second one, SRS is written for different purpose and serve as a contract document between customer and developer. This produces the probability of the customer being disappointment with the final product.

IEEE defines a requirement as :

* A condition of capability needed by a user to solve a problem or achieve an objective.
* A condition or capability that must be met or processed by a system to satisfy a contract, standard, specification, or other formally imposed document.

Generally, the SRS is a document that completely describes what the proposed software should do without describing how the software will do it. The basic goal of the requirements phase is to produce the SRS, which describe the complete external behavior of the proposed software.

**Organization of an SRS:**

The most general organization of an SRS is as follow

Introduction

Purpose

Scope

Definitions

System Overview

* Overall Description

Product Perspective

Product Functions

User Characteristics

Constraints, Assumptions and Dependencies

* Specific Requirements

External interfaces

Functions

Performance requirements

Logical database requirement

Design constraints

An SRS must consist of the following features:-

* consistent
* complete
* unambiguous
* modifiable
* verifiable
* traceable
* ranked

**Need for SRS:**

The SRS is needed for the following reasons:

* An SRS establishes the basis for agreement between client and developer.
* An SRS provides a reference for validation of the final product.
* A high- quality SRS is a prerequisite to high–quality software.
* A high- quality SRS reduces the development cost.

**Platform:**

Windows is very powerful scalable Operating System that provides basic file and prints services as well as robust platform for server applications. Main features are as follows:-

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* More extensive network management features.
* Improved Network Performance.
* Enhanced communication features.

**Objective:**

A software requirement specification is literally the conversation of a specific point. It's difficult in this instance to avoid the circular reference. A project's specifications consist of the body of information that should guide the project developers, engineers, and designers through the work of creating the software.  
 A software requirement specification document describes how something is supposed to be done. A specifications document may list out all of the possible error states for a certain form, along with all of the error messages that should be displayed. The specifications may also describe the steps of any functional interaction, and the order in which they should be followed by the user. A requirements document, on the other hand, would state that the software must handle error states reasonably and effectively, and provide explicit feedback to the users.

The specifications show how to meet this requirement.  
Specifications may take several forms. They can be a straightforward listing of functional attributes, they can be diagrams or schematics of functional relationships or flow logic, or they can occupy some middle ground. Software Requirement Specifications can also be in the form of prototypes, mockups, and models.  
Project specifications are much more important for determining the quality of the product. Every rule and functional relationship provides a test point.

A disparity between the program and its specification is an error in the program if and only if the software requirement specification exists and is correct. A program that follows a terrible specification perfectly is terrible, not perfect.

**Scope:**

Boundaries of software products are defined by a set of Requirements. The software development team designs, implements, tests, and delivers these Requirements to you. A Requirement is an atomic unit of a software product from the viewpoint of the user. As a rule, Requirements are always correct, unambiguous, verifiable, and traceable. Requirements are numbered and prioritized.

All Functional Requirements are then listed in a requirements attributes spreadsheet, where all necessary attributes for each Requirement are maintained. Changes to the project scope can be made only by issuing new Specifications through a process called Change Requests. Each Change Request implies that changes will be made to the Budget, Schedule, and Risks.

THIS PROJECT is most functional and easy to use solution for prioritizing, planning, managing and executing projects. This project can be used in educational institutions where an analysis of various projects allotted to various scholars is necessary, and also in MNC’s with slight modification to judge the performance of employees. One can also gain some experience based on earlier projects in his upcoming assignments.

**Requirement:**

The software requirements specification is produced at the culmination of the analysis task. This is the way to represent requirements in a consistent format. It is a specification for a particular software product , program or a set of programs that performs certain functions in a specific environment .The function and allocated to software as part of system engineering are refined by establishing a complete information description, a detailed functional and behavioral description, an indication of performance requirements and design constraints, appropriate validation criteria, and other data pertinent to requirements.

**Functional Requirement:**

Functional requirements specify which output should be produced from the given input . They describe the relationship between the input and output of the system. For each functional requirement, a detail description of all the data inputs and their sources, the units of measure, and the range of valid inputs must be specified.

All the operations to be performed on the input data to obtain the output should be specified. This includes specifying the validity checks on the input and output data, parameters affected by the operations, and equations or other logical operations that must be used to transfer the inputs into corresponding outputs.

An important part of the specification is the system behavior in abnormal situations, like input unit (which can occurs in many ways) or error during computations.

The functional requirement must clearly state what the system should do if such situations occurs. Specially, it should specify the behavior of the system for invalid input and invalid outputs. Furthermore, behavior for situations where the input is valid but the normal operations can not be performed should also be specified. In short, the system for the foreseen inputs and all foreseen system states should be specified. These special conditions are often likely to be overlooked, resulting in the system that is not robust.

**Security Requirement:**

Security requirements are the particularly significant in defense system and many database systems. Security requirement place restrictions on the use of certain commands, control access to data, provide different kind of access requirement for different people, require the use of passwords and cryptography techniques, and maintain a log of activities in system. Given the current security needs even of common systems, they may also require proper assessment of security threats, proper programming techniques, and use of tools to detect flaws like buffer overflow.

For the purpose of security process I have added the login feature into my project so as to keep it safe from the external problem. One can only interact with my project by giving it the suitable i.e. the accurate ID and password.

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**Software Requirement:**

Software requirement plays a very important role in the making and development of a project, as it provides a suitable language as well as the perfect medium to implement our program or project on the system. software requirement is very necessary for the implementation of a program.

The Software requirements specification is produced at the culmination of the analysis task. This is the way to represent requirements in a consistent format. It is a specification for a particular software product, program or a set of programs that performs certain functions in a specific environment .The function and allocation to software as part of system engineering are refined by establishing a complete information description, a detailed functional and behavioral description, an indication of performance requirements and design constraints, appropriate validation criteria, and other data pertinent to requirements.

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**SOFTWARE REQUIREMENT:**

* Front End **-** Visual Basic 6.0
* Back End  **-** MS. Access
* Operating System  **-** Windows XP

**Hardware Requirement:**

The hardware requirements specification is produced at the culmination of the analysis task. This is the way to represent requirements in a consistent format. It is a specification for a particular hardware product, program or a set of programs that performs certain functions in a specific manner.

In the designation of my project hardware requirement is also very necessary as it provide various tools for the making of my project.

RAM - 1 GB

Processor - Core 2 Duo

Hard Disk - 260 GB

Monitor - 17” CRT

Mouse - Optical

Keyboard - Multimedia

**MODULE DESCRIPTION:**

**PHARMA COMPANY MODULE:**

The Pharma Company module tells us about the details of Medicine which is distributed by Medical representative (M R).

**MEDICAL REPRESENTATIVE MODULE:**

The M R module tells us about the distributer who take the medicine and introduce that medicine to Doctor, Medical shop and all other place where M R want and give the report of medicine to Pharma Company.

**DOCTOR MODULE:**

The Doctor module tells us about the details of doctor that includes Specification, name, and address of the Doctor. Doctor receives the medicine from M R, use it and give valuable result to M R about that medicine.

**MEDICAL SHOP MODULE:**

The Medical Shop module tell us detail of Medical Shop , medical shop module include the detail of medicine . medical shop receive the medicine from M R and provide it to the doctor or doctor advise the patient to buy that particular medicine to medical shop & give the valuable result to M R.

**SYSTEM**

**DESIGNING**

**5. SYSTEM DESIGN:**

System design provides the understandings and procedural details necessary for implementing the system recommended in the syst Emphasis is on the translating the performance requirements into design specifications. The design phase is a transition from a user oriented document (system proposal) to a document oriented to the programmers or database personnel.

System design goes through two phases of the development:

1. Logical Design
2. Physical Design

A data flow diagram shows the logical flow of the system. For a system it describes the input (source), output (destination), database (data stores), and procedures (data flows) all in a format that meets the user requirements. When analysis prepares the logical system design, they specify the user needs at a level of detail that virtually determines the information flow into and out of the system and the required data resources.

**SOFTWARE PROCESS MODEL:**

**Waterfall Model:**

The waterfall model is a popular version of the systems development life cycle model for software engineering. Often considered the classic approach to the systems development life cycle, the waterfall model describes a development method that is linear and sequential. Waterfall development has distinct goals for each phase of development. Imagine a waterfall on the cliff of a steep mountain. Once the water has flowed over the edge of the cliff and has begun its journey down the side of the mountain, it cannot turn back. It is the same with waterfall development. Once a phase of development is completed, the development proceeds to the next phase and there is no turning back.

The advantage of waterfall development is that it allows for departmentalization and managerial control. A schedule can be set with deadlines for each stage of development and a product can proceed through the development process. Theoretically, be delivered on time. Development moves from concept, through design, implementation, testing, installation, troubleshooting, and ends up at operation and maintenance. Each phase of development proceeds in strict order, without any overlapping or iterative steps.

The disadvantage of waterfall development is that it does not allow for much reflection or revision. Once an application is in the testing stage, it is very difficult to go back and change something that was not well-thought out in the concept stage. Alternatives to the waterfall model include joint application development (JAD), rapid application development (RAD), synchronize and stabilize, build and fix problems.

The waterfall model is a sequential design process, often used in software development processes, in which progress is seen as flowing steadily downwards(like a waterfall)through the phases of conception,initiation,analysis,design,construction,testing,production,implementation & maintenance.

Integration and module testing

Delivery

Maintenance

Coding and module testing

Design and specification

Feasibility study

Requirements analysis and specification

**DESIGNING APPROACH:**

**Top down design:**

The TOP DOWN approach starts from the highest level component of the hierarchy and proceed through to lower levels. A top down design approach start by the major component of the system. Decomposing them into their lower level component and iterative until the desired label of detail is achieved. Top down design method is in some form of step wise refinement. Starting from a abstract design in each step the design is refine to more concrete level, until we reach a level were no more refinement is needed.

A system consists of components, which have components of their own; indeed a system is a hierarchy of components. The highest level component correspond to the total system. The top down approach from the highest level component of hierarchy and proceeds through to lower levels. By contrast a bottom up approach starts with the lowest level component of the hierarchy and proceeds through progressively higher levels to the top level components.

The top down approach has been promulgated by many researches and has been found to be extremely useful for design. Most design methodologies are based on the top down approach.

A top down approach suitable only if the specifications of the systems are clearly known and the system development is from scratch. However, if a system is to be built from an existing system, a bottom approach is more suitable, as it starts from some existing components.

**HIGH LEVEL**

**DESIGN**

**6. HIGH LEVEL DESIGN:**

**DATA FLOW DIGRAM:**

A Data Flow Diagram (DFD) is a graphical representation of the information flow and transformation that are applied, as data moves from the input to the output. It is also known as “data flow graph” or a “bubble chart”. The DFD may be used to represent increasing information flow and function details. A level 0 DFD, also called a fundamental system model, represent an entire software element as a single bubble with the input and the output data directed by the incoming and outgoing arrows. Data flow diagrams are commonly used during problem analysis . Data flow diagram is quite general and nit limited to problem analysis for software requirement specification. DFDs are very useful if understanding a system and can be effectively used during analysis.

A DFD shows the flow of data through the system It views the system as a function that transforms the input into desired output. The DFD aims to capture the transformations that take place within a system to the input data so that eventually the output data is produced. The agent that performs transformation of data from one state to another is called a process. So a DFD shows the movement of data through the different processes.

Named and circle shows the processes and data flows are shows by arrows entering or leaving the circles. A rectangle represent a source or sinks and is a net originator or consumer of the data. A source or sink is typically outside the main system of study.

The DFD should be carefully scrutinized to make sure that all the process in the physical environment are shown in DFD. It should also ensure that none of data flow is actually carrying control information.

**Features of DFD:**

* The exceptional simplicity of the DFD zymology is one reason why data oriented analysis techniques is the most widely used.
* The data flow diagram is a graphical tool that can be very valuable during the system analysis.
* The DFD depicts information flow without explicit notation of control.(e.g. conditions of loops).
* The level 0 data flow diagram should depict the software as a single bubble.
* Primary input/output files should be maintained.
* One bubble at a time should be refined.

There is a natural tendency to over complicate the DFD. This happens when we try to show too many details early.

**CONTEXT DIAGRAM:**

**(0- Level DFD)**

Pharma Company

Medical Shop

Medical Representative

Doctor

**DATA FLOW DIAGRAM**

**(1- Level DFD)**

Id password

Id password Login Database

Medical Representative

User Detail

Report

Doctor detail Shop Detail Ph. Company D.b.

Doctor Database Medical Shop Database

Product Detail

Report Database Product Database

**E-R Model Concept:**

The entity relationship model is a generalization of primitive commercial systems, which are based on hierarchical and network approaches. The E-R relationship, which is also known as Entity Relationship is based on the theory of real world which consists of a set of basic objects, which are called entities and relationships among these object. An entity exists as an object and is distinguishable from other objects.

**For example:** account number 1002 at the ICICI bank is an entity that uniquely identifies one particular account.

**Entity:**

Any distinguishable person, place, thing, event or concept about which information is kept or an object which can be distinctly identified and distinguished and represented in a database or anything about which we store information is called an **Entity.**

**Attribute:**

Attributes describe the entity to which they are associated. A particular instance of an attribute is a value. In other words attributes are the characteristics of an entity type. Attributes can be classified as descriptors or identifiers. A descriptor describes a non-uniquely identify an instance of an entity.

**Notification For E-R Diagram:**

There is no standard for representing data objects in E-R diagram. Each modeling methodology uses its own notation. All notational style represents entities as rectangular boxes and relationship as lines connecting boxes. Each style uses a special set of symbols to represent the cardinality of a connection. An entity is represented in E-R diagram as a rectangular box enclosing the entity type name. Attribute names are enclosed in ellipses and attached to their entity type by straight lines.

**The symbols used for the basic E-R constructs are:**

|  |  |  |
| --- | --- | --- |
| **Notation** | **Use** | **Symbols** |
| **Lines** | Linking attributes to entity sets to relationship sets |  |
| **Ellipse** | Representing attributes |  |
| **Rectangle** | Representing entity set |  |

**Keys:**

A key is a value which can always be used to uniquely identify an object instance. It becomes important to invent a method to distinguish entity and relationships. The differences between entities must be expressed in terms of attributes.

**Super Key:**

A Super Key is a set of one or more attributes which, taken collectively, allows us to identify uniquely an entity in the entity set.

**Candidate Key:**

An attribute that uniquely identify a row is called Candidate Key. Candidate key is also referred to as Surrogate keys.

**Primary Key:**

A candidate key to choose to identify rows uniquely is called a Primary key.

**Alternate Key:**

If there are multiple candidate keys in a table, then the keys which are not chosen as primary key will be called as alternate key.

**Composite Keys:**

When the key that uniquely identifies the rows of the table is made up of more than one attribute it is called a composite key.

**Guideline for Drawing E-R Diagram:**

When gathering information I have to:

* 1. Identify the entities in the system.
  2. Identify the attribute of each entity.
  3. Identify the relationship between the entities.

**E R Diagram of the Project:**

Doctor

Retailer

Distributer

Medical Shop

M.R

Manage

Ph. company

Recommend

**TABLE SCHEMA:**

**Table Name: - DOCTOR**

**Table Description: - Doctor Details.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Field Name**  **Attribute** | **Attribute Description** | | | **Data Type** | **Size** | **Cross Reference Or Primary Key** |
| Doctor\_id | ID of Doctor | | | VarChar | 10 | Primary Key |
| Name | Name of Doctor | | | VarChar | 10 | Not Null |
| Address | Address of Doctopr | | | VarChar | 10 | Not Null |
| Phone no. | Phone no. of Doctor | | Number | | 15 | Not Null |
| E-mail id | | E-mail id of Doctor | VarChar | | 15 | Not Null |

**Table Name: - MEDICAL**

**Table Description: - Medical Details.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field Name**  **Attribute** | **Attribute Description** | **Data Type** | **Size** | **Cross Reference Or Primary Key** |
| Medical\_id | Medical id | VarChar | 10 | Primary Key |
| Name | Medicalr Name | VarChar | 20 | Not Null |
| Address | Address of Medical | VarChar | 30 | Not Null |
| Phone no. | Phone no. of Medical | Number | 15 | Not Null |

**Table Name: - MEDICAL REPRESENTATIVE**

**Table Description: - Medical Representative Details.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Field Name**  **Attribute** | | **Attribute Description** | **Data Type** | **Size** | | **Cross Reference Or Primary Key** |
| M R\_id | | ID of the M R | Varchar | 10 | | Primary Key |
| Name | | Name of the M R | Varchar | 20 | | Not Null |
| Address | | Address of M R | VarChar | 10 | | Not Null |
| Mobile no. | Mobile no of M R | | Number | 10 | Not Null | |
| E-mail id | E-mail id of M R | | VarChar | 15 | Not Null | |

**Table Name:- PHARMA COMPANY**

**Table Description: - Pharma Company Details.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Field Name**  **Attribute** | **Attribute Description** | **Data Type** | | **Size** | **Cross Reference Or Primary Key** |
| Ph.Company id | ID of Pharma Company | Varchar | | 10 | Primary Key |
| Name | Name of the Stockiest | Varchar | | 10 | Not Null |
| Address | Address of Ph. Company | Varchar | 15 | | Not Null |
| E-mail id | Email id of Company | Varchar | 10 | | Not Null |
| Phone no. | Phone no. of company | No. | 15 | | Not Null |

**7. Low level design:**

**Modula ration:**

A system is considered modular if a consist of discreet component show that each component can be implemented separately , and a change to one component has minimal impact on other components.

* Each function in each abstraction has a single ,well defined purpose .
* Each function manipulates no more than one major data structure .
* Function share global data selectively .it easy to identify all routins that share a major data structure .
* Function that manipulate instances of abstract data types are encapsulated with the data structure be in manipulated .

**Structure chart:**

The structure chart is one the most commonly used methods for system design. structures chats are used during architectural design to document hierarchical structure , parameters and interconnection in a system .

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