

Project
On
“Hospital Management System”



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1. Introduction

1.1) Purpose

- The Software is for the automation of Hospital Management.
- It maintains two levels of users:-
 - Administrator Level
 - User Level
- The Software includes:-
 - Maintaining Patient details.
 - Providing Prescription, Precautions and Diet advice.
 - Providing and maintaining all kinds of tests for a patient.
 - Billing and Report generation.

1.2) Scope

It can be used in any Hospital, Clinic, Dispensary or Pathology labs for maintaining patient details and their test results.

1.3) Technologies to be used

This project will be a desktop application to be developed in C# or PHP or Java - Swing having MySQL or MS Server or Oracle as backend.

- Database Design (MySQL or MS Server or Oracle)
- Form Design (C# or PHP or Java - Swing)
- Coding (C# or PHP or Java - Swing)
- Testing (C# or PHP or Java - Swing)
- Reporting Tool (Data Report)

1.4) **Overview**

- Project is related to Hospital Management System.
- The project maintains two levels of users:-
 - Administrator Level-Doctor
 - User Level-Data Entry Operator
- Main facilities available in this project are:-
 - Maintaining records of indoor/outdoor patients.
 - Maintaining patients diagnosis details, advised tests to be done.
 - Providing different test facilities to a doctor for diagnosis of patients.
 - ❖ X-Ray
 - ❖ Urine Test
 - ❖ Stool Test
 - ❖ Sonography Test
 - ❖ Gastroscopy Test
 - ❖ Colonoscopy Test
 - ❖ Blood Test
 - ❖ Biochemistry Test
 - Maintaining patient's injection entry records.
 - Maintaining patient's prescription, medicine and diet advice details.
 - Providing billing details for indoor/outdoor patients.
 - Maintaining backup of data as per user requirements (between mentioned dates).
 - If user forgets his/her password then it can be retrieved by hint question.
- In this project collection of data is from different pathology labs.
- Results of tests, prescription, precautions and diet advice will be automatically updated in the database.
- Related test reports, patient details report, prescription and billing reports can be generated as per user requirements.
- User or Administrator can search a patient's record by his/her name or their registration date.
- Patient's diet advice can be provided in Hindi.

2. Overall Description

2.1) Goals of proposed system

1. **Planned approach towards working:** - The working in the organization will be well planned and organized. The data will be stored properly in data stores, which will help in retrieval of information as well as its storage.
2. **Accuracy:** - The level of accuracy in the proposed system will be higher. All operation would be done correctly and it ensures that whatever information is coming from the center is accurate.
3. **Reliability:** - The reliability of the proposed system will be high due to the above stated reasons. The reason for the increased reliability of the system is that now there would be proper storage of information.
4. **No Redundancy:** - In the proposed system utmost care would be that no information is repeated anywhere, in storage or otherwise. This would assure economic use of storage space and consistency in the data stored.
5. **Immediate retrieval of information:** - The main objective of proposed system is to provide for a quick and efficient retrieval of information. Any type of information would be available whenever the user requires.
6. **Immediate storage of information:** - In manual system there are many problems to store the largest amount of information.
7. **Easy to Operate:** - The system should be easy to operate and should be such that it can be developed within a short period of time and fit in the limited budget of the user.

2.2) Background

A Hospital is a place where Patients come up for general diseases. Hospitals provide facilities like:-

- Consultation by Doctors on Diseases.
- Diagnosis for diseases.
- Providing treatment facility.
- Facility for admitting Patients (providing beds, nursing, medicines etc.)
- Immunization for Patients/Children.

Various operational works that are done in a Hospital are:-

- Recording information about the Patients that come.
- Generating bills.
- Recording information related to diagnosis given to Patients.
- Keeping record of the Immunization provided to children/patients.
- Keeping information about various diseases and medicines available to cure them.

These are the various jobs that need to be done in a Hospital by the operational staff and Doctors. All these works are done on papers.

The work is done as follows:-

- Information about Patients is done by just writing the Patients name, age and gender. Whenever the Patient comes up his information is stored freshly.
- Bills are generated by recording price for each facility provided to Patient on a separate sheet and at last they all are summed up.
- Diagnosis information to patients is generally recorded on the document, which contains Patient information. It is destroyed after some time period to decrease the paper load in the office.
- Immunization records of children are maintained in pre-formatted sheets, which are kept in a file.
- Information about various diseases is not kept as any document. Doctors themselves do this job by remembering various medicines.

All this work is done manually by the receptionist and other operational staff and lot of papers are needed to be handled and taken care of. Doctors have to remember various medicines available for diagnosis and sometimes miss better alternatives as they can't remember them at that time.

2.3) Project Requirements

Hardware Requirements		
<i>Processor</i>	<i>RAM</i>	<i>Disk Space</i>
Intel i3 or higher	2 Gb or Higher	750 Mb or Higher
Software Requirements		
<i>Operating System</i>	<i>Database</i>	
Win-7/8/10, Linux or any other higher version	MS Server Or MySQL	

2.4) User Characteristics

Every user should be:

- Comfortable of working with computer.
- He must have knowledge in medical field.
- He must also have basic knowledge of English too.

2.5) Constraints

- GUI is only in English in first phase later other languages can be added.
- Login and password is used for identification of user and there is no facility for guest.

2.6) Definitions of problems

Problems with conventional system

1. **Lack of immediate retrievals:** -The information is very difficult to retrieve and to find particular information like- E.g. - To find out about the patient's history, the user has to go through various registers. This results in inconvenience and wastage of time.
2. **Lack of immediate information storage:** - The information generated by various transactions takes time and efforts to be stored at right place.
3. **Lack of prompt updating:** - Various changes to information like patient details or immunization details of child are difficult to make as paper work is involved.
4. **Error prone manual calculation:** - Manual calculations are error prone and take a lot of time this may result in incorrect information. For example calculation of patient's bill based on various treatments.
5. **Preparation of accurate and prompt reports:** - This becomes a difficult task as information is difficult to collect from various registers.

2.7) Alternative Solutions

1. Improved Manual System:-

One of the alternative solutions is the improvement of the manual system. Anything, which can be done by using automated methods, can be done manually. But the question arises how to perform thing manually in a sound manner. Following are some suggestions, which can be useful in the manual system.

A more sophisticate register maintenance for various Patient Information, Doctor diary, Immunization Details and a good system for writing bill amount employees and stock availed for the customers can be maintained at central place.

Adequate staff may be maintained so that updations are made at the very moment at the same time. Proper person for proper work should be made responsible so that a better efficiency could be achieved. This needs a lot of work force.

2. Batch System:-

Another alternative solution can be used of computer based batch system for maintaining the information regarding purchase details, customers and employees. A batch system refers to a system in which data is processed in a periodical basis.

The batch system is able to achieve most of the goals and sub goals. But a batch system data is processed in sequential basis. Therefore batch system is not suggested.

3. Online System:-

This system (**HMS**) provides online storage/ updations and retrieval facility. This system promises very less or no paper work and also provides help to Doctor and operational staff.

In this system everything is stored electronically so very less amount of paper work is required and information can be retrieved very easily without searching here and there into registers. This system is been discussed here.

3. Feasibility Study

Depending on the results of the initial investigation the survey is now expanded to a more detailed feasibility study. “**FEASIBILITY STUDY**” is a test of system proposal according to its workability, impact of the organization, ability to meet needs and effective use of the resources. It focuses on these major questions:

1. What are the user’s demonstrable needs and how does a candidate system meet them?
2. What resources are available for given candidate system?
3. What are the likely impacts of the candidate system on the organization?
4. Whether it is worth to solve the problem?

During feasibility analysis for this project, following primary areas of interest are to be considered. Investigation and generating ideas about a new system does this.

Steps in feasibility analysis

Eight steps involved in the feasibility analysis are:

- ✓ Form a project team and appoint a project leader.
- ✓ Prepare system flowcharts.
- ✓ Enumerate potential proposed system.
- ✓ Define and identify characteristics of proposed system.
- ✓ Determine and evaluate performance and cost effective of each proposed system.
- ✓ Weight system performance and cost data.
- ✓ Select the best-proposed system.
- ✓ Prepare and report final project directive to management.

3.1) Technical feasibility

A study of resource availability that may affect the ability to achieve an acceptable system. This evaluation determines whether the technology needed for the proposed system is available or not.

- Can the work for the project be done with current equipment existing software technology & available personal?
- Can the system be upgraded if developed?
- If new technology is needed then what can be developed?

This is concerned with specifying equipment and software that will successfully satisfy the user requirement. The technical needs of the system may include:

Front-end and back-end selection

An important issue for the development of a project is the selection of suitable front-end and back-end. When we decided to develop the project we went through an extensive study to determine the most suitable platform that suits the needs of the organization as well as helps in development of the project.

The aspects of our study included the following factors.

Front-end selection:

1. It must have a graphical user interface that assists employees that are not from IT background.
2. Scalability and extensibility.
3. Flexibility.
4. Robustness.
5. According to the organization requirement and the culture.
6. Must provide excellent reporting features with good printing support.
7. Platform independent.
8. Easy to debug and maintain.
9. Event driven programming facility.
10. Front end must support some popular back end like MS Server or MySQL.

According to the above stated features we may select C# or Php or Java as the front-end for developing our project.

Back-end Selection:

1. Multiple user support.
2. Efficient data handling.
3. Provide inherent features for security.
4. Efficient data retrieval and maintenance.
5. Stored procedures.
6. Popularity.
7. Operating System compatible.
8. Easy to install.
9. Various drivers must be available.
10. Easy to implant with the Front-end.

According to above stated features we may select MS Server or MySQL as the backend.

The technical feasibility is frequently the most difficult area encountered at this stage. It is essential that the process of analysis and definition be conducted in parallel with an assessment to technical feasibility. It centers on the existing computer system (hardware, software etc.) and to what extent it can support the proposed system.

3.2) Economical feasibility

Economic justification is generally the “Bottom Line” consideration for most systems. Economic justification includes a broad range of concerns that includes cost benefit analysis. In this we weight the cost and the benefits associated with the candidate system and if it suits the basic purpose of the organization i.e. profit making, the project is making to the analysis and design phase.

The financial and the economic questions during the preliminary investigation are verified to estimate the following:

- The cost to conduct a full system investigation.

- The cost of hardware and software for the class of application being considered.
- The benefits in the form of reduced cost.
- The proposed system will give the minute information, as a result the performance is improved which in turn may be expected to provide increased profits.
- This feasibility checks whether the system can be developed with the available funds. The **Hospital Management System** does not require enormous amount of money to be developed. This can be done economically if planned judiciously, so it is economically feasible. The cost of project depends upon the number of man-hours required.

3.3) Operational Feasibility

It is mainly related to human organizations and political aspects. The points to be considered are:

- What changes will be brought with the system?
- What organization structures are disturbed?
- What new skills will be required? Do the existing staff members have these skills? If not, can they be trained in due course of time?

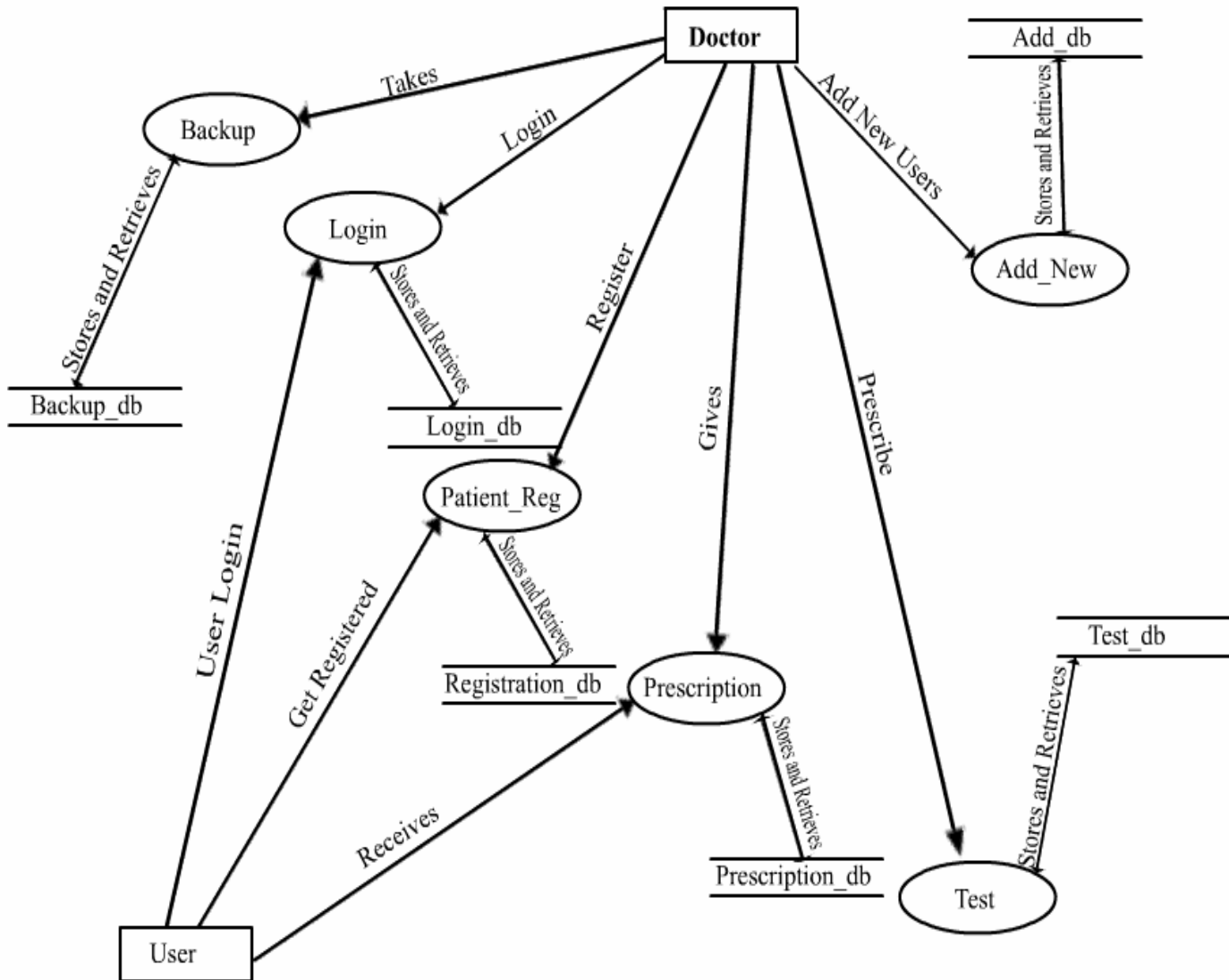
The system is operationally feasible as it very easy for the End users to operate it. It only needs basic information about Windows platform.

3.4) Schedule feasibility

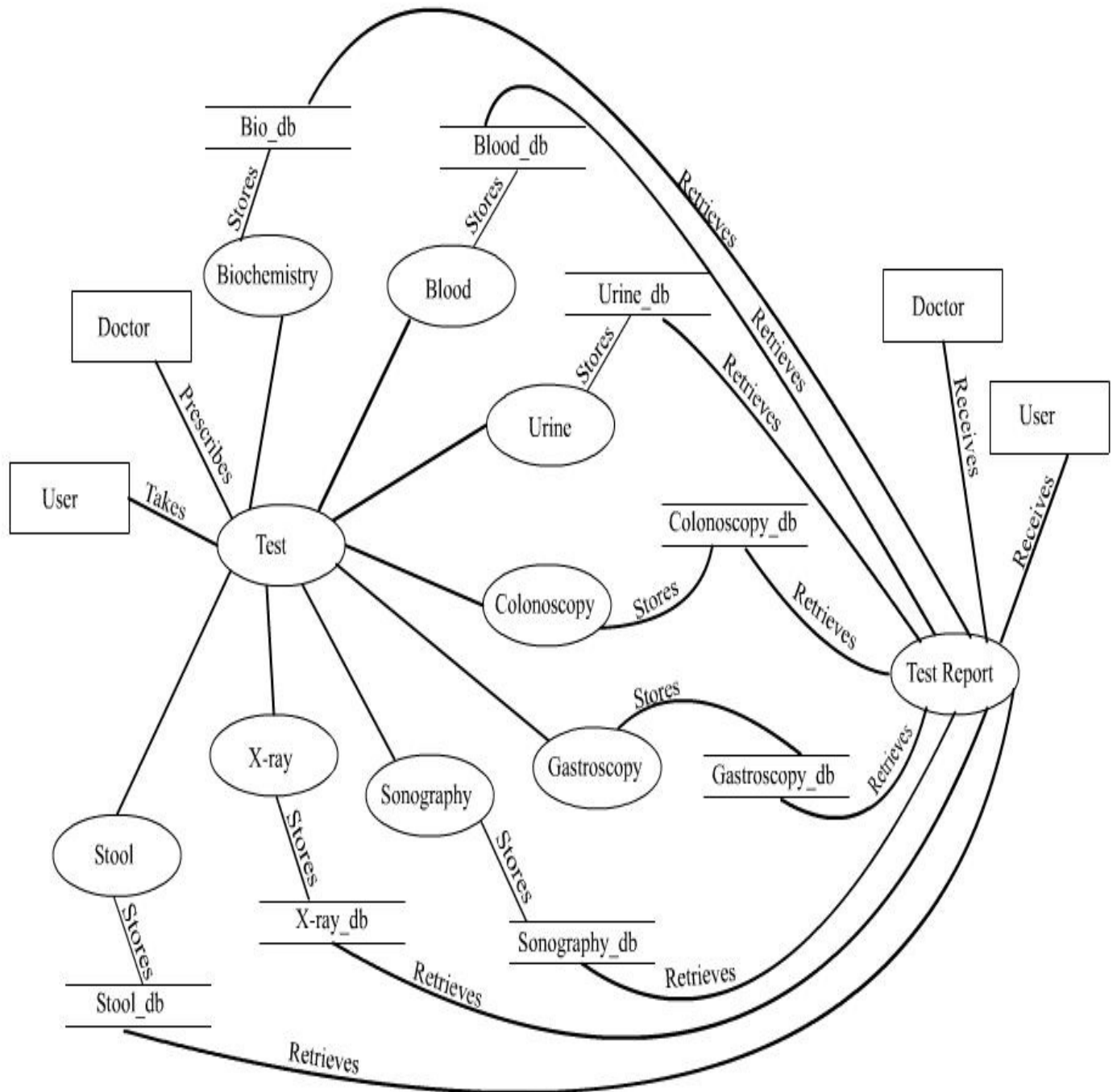
Time evaluation is the most important consideration in the development of project. The time schedule required for the developed of this project is very important since more development time effect machine time, cost and cause delay in the development of other systems.

A reliable **Hospital Management System** can be developed in the considerable amount of time.

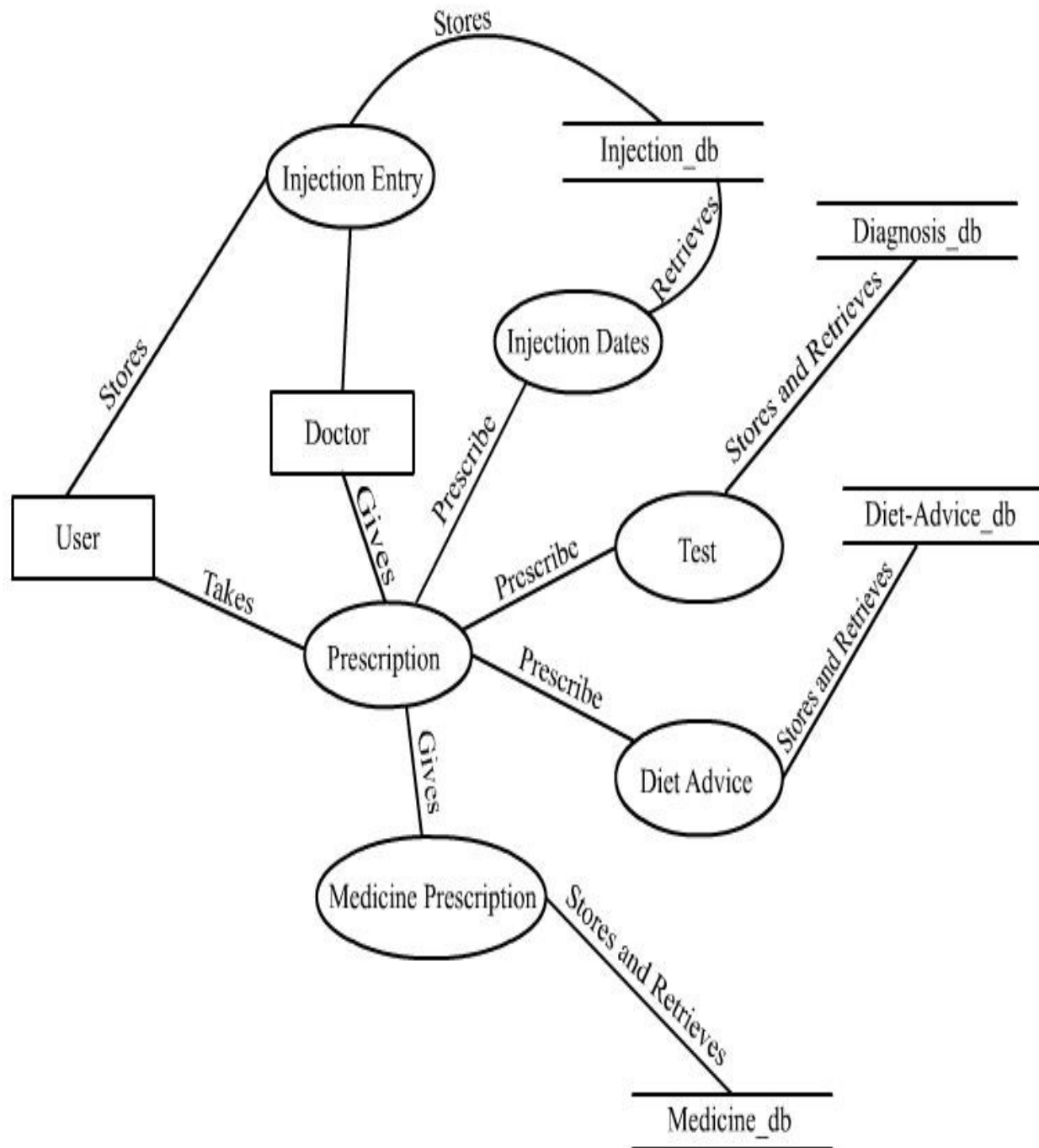
4. Data Flow Diagrams



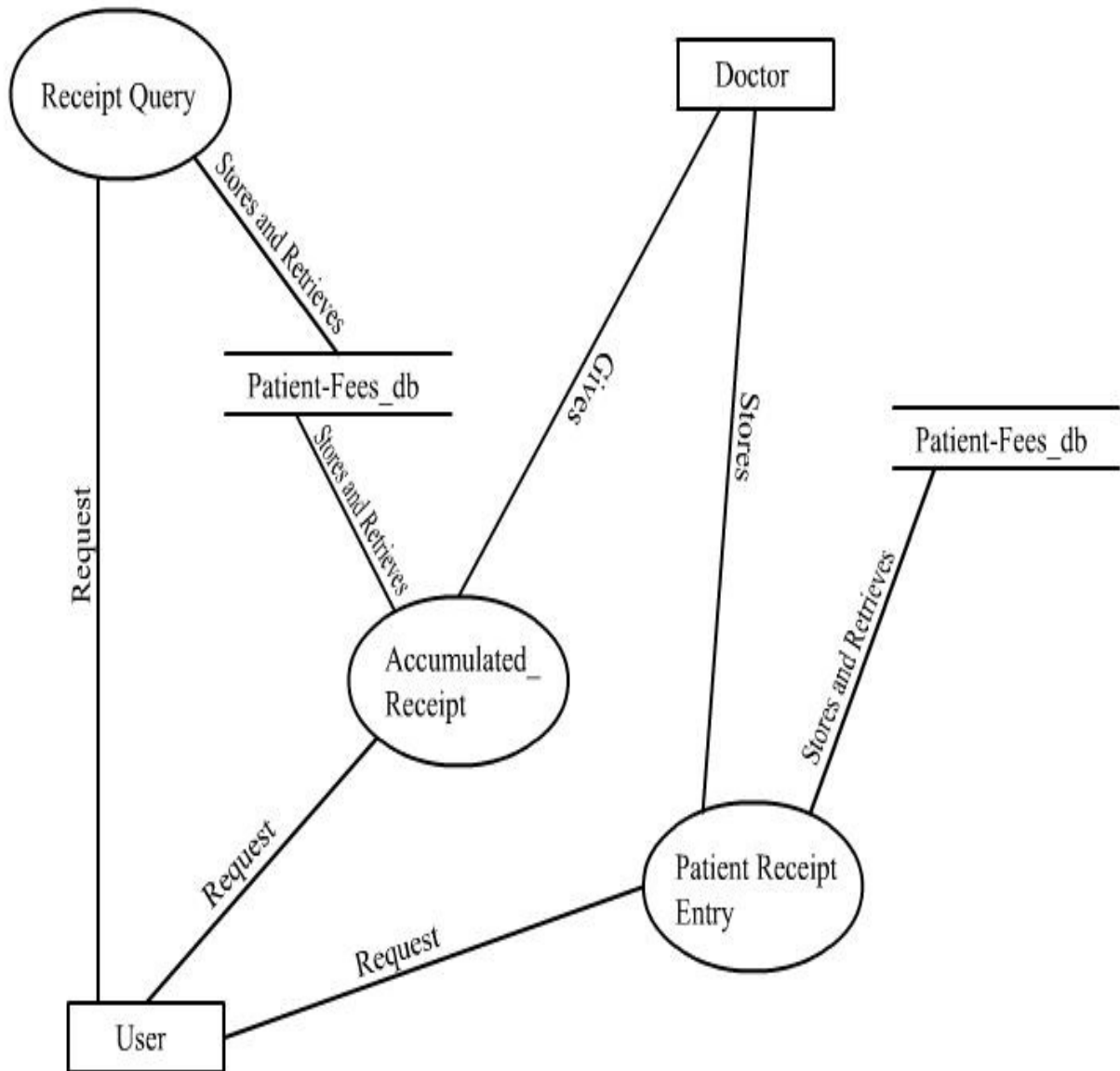
DFD: Level 0



DFD: Level 1

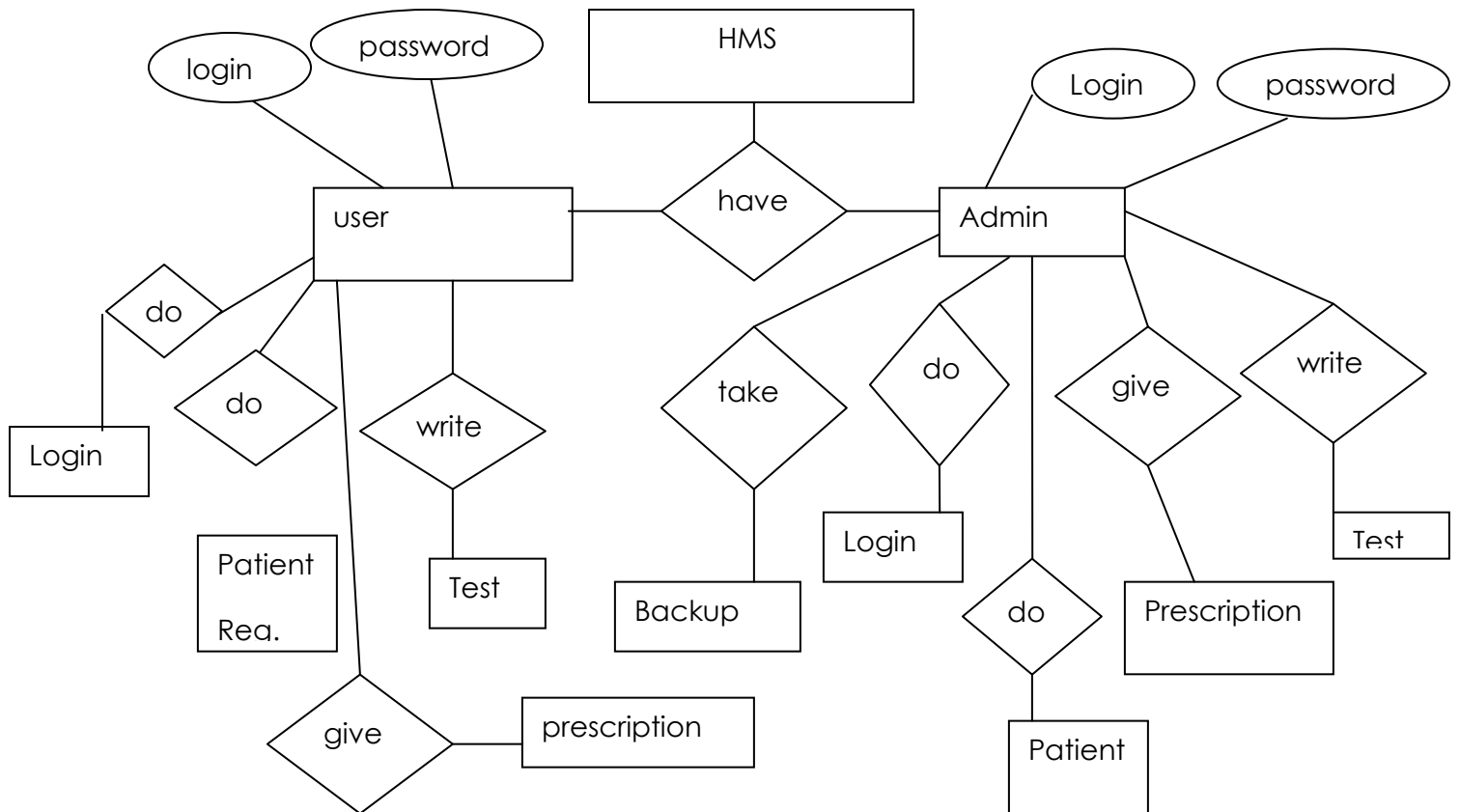


DFD: Level 2



DFD: Level 3

5. Entity Relationship Diagram



6. Data Tables

1. Login Table:-

Field Name	Data Type	Description
User_Name	Text	
Password	Text	
Hint_Question	Text	
Hint_Answer	Text	
User_Type	Text	

2. Patient Detail Table:-

Field Name	Data Type	Description
Registration_No	Text	
Registration_Date	Date/Time	
Name	Text	
Address	Text	
City	Text	
TelePhone_Mobile_No	Text	
Marital_Status	Text	
Religion	Text	
Gender	Text	
Father_Husband_Name	Text	

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Field Name	Data Type	Description
Status	Text	Indoor / Outdoor
Age	Number	

3. Patient Diagnosis Table:-

Field Name	Data Type	Description
Dignosis_No	Text	
Registration_No	Text	
Dignosis_Date	Date/Time	
Provisional_Dignosis	Text	
Remark	Text	
BioChemistry	Yes/No	
Stool	Yes/No	
Blood	Yes/No	
Colonoscopy	Yes/No	
Gastroscopy	Yes/No	
Urine	Yes/No	
XRy	Yes/No	
SONOGRAPHY	Yes/No	
Others	Text	
Reconsultation_Advice_Week	Text	Week Wise
Reconsultation_Advice_Date	Date/Time	
FINAL_Dignosis	Text	
ECG	Yes/No	

4. Patient Diet Advice Table:-

Field Name	Data Type	Description
Dignosis_No	Text	
Diet_Advice	Text	

5. Patient Medicine Table:-

Field Name	Data Type	Description
Dignosis_No	Text	
Medicine_No	Number	
Medicine_Name	Text	
Precaution	Text	Medicine Related Hindi Words
No_of_Doses	Number	

6. Patient Injection Dates Table:-

Field Name	Data Type	Description
Dignosis_No	Text	
Injection_Date	Date/Time	
Status	Text	Injection Taken or Not

7. Biochemistry Test Table:-

Field Name	Data Type	Description
Registration_No	Text	
Test_Date	Date/Time	
Glucose_Fasting_R	Text	70-110 mg %
Two_Hr_Pg_Pp	Text	< 100 mg %
Blood_Urea	Text	10-40 mg %
Creatinine	Text	0.6-1.5 mg %
S_Cholesterol	Text	130-250 mg %
Total_Protein	Text	6.0-8.0 gm %
Albumin	Text	3.5-5.0 gm %
Globwlin	Text	2.3-3.6 gm %
A_G_Ratio	Text	? 1.5 :-2.3:1
Game_Gt	Text	11-50 UL
Alkaline_Ptase	Text	10-90 U/L Adult
Bilirubin_Direct	Text	0.0-0.8 mg %
Bilirubin_Indirect	Text	0.0-0.6 mg %
Bilirubin_Total	Text	0.2-1.0 mg %
Sgot	Text	0-40 U/L
Sgpt	Text	0-40 U/L
Half_Hr_Pg_Pp	Text	< 110 mg %
One_Hr_Pg_Pp	Text	< 160 mg %
One_And_Half_Hr_Pg_Pp	Text	< 140 mg %

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Field Name	Data Type	Description
Bun	Text	8-20 mg %
Hdl_Cholesterol	Text	30-55 mg %
Ldl_Cholesterol	Text	60-165 mg %
Vldl_Cholesterol	Text	0-60 mg %
Triglycerides	Text	0-60 mg %
S_Total_Lipids	Text	400-700 mg %
S_Amylase	Text	25-125 U/L
S_Lipase	Text	8-54 Ug/L
Sodium	Text	136_146 mEq/L
Potassium	Text	3.5-5.0 mEq/L
Chloride	Text	94-111 mmo I/L
Calcium	Text	8.5-11.0 mg/dl
Ldh_Total	Text	230-461 U/L
Ck_Nac_Activated	Text	0-190 U/L
Ck_Mb_Nac_Activated	Text	< 12 U/L
Uric_Acid	Text	4-6 mgdl
Urine_Sugar1	Text	
Urine_Sugar2	Text	
Urine_Sugar3	Text	
Urine_Sugar4	Text	
Acid_Ptase	Text	
Glucose_R_PP	Text	
T3	Text	0.3-2.5 uI U/L

Field Name	Data Type	Description
T4	Text	4.5-12 uI U/L
TSH	Text	0.4-4.0 uI U/L

8. Blood Test Table:-

Field Name	Data Type	Description
REGISTRATION_NO	Text	
TEST_DATE	Date/Time	
HAEMOGLOBIN	Text	13-15 GMS%
TLC	Text	4500-10500 CELLS/CU MM
NEUTROPHILS	Text	DLC , 45-68%
LYMPHOCYTES	Text	DLC , 25-45%
EOSINOPHIL	Text	DLC , 2-6%
MONOCYTES	Text	DLC , 1-4%
BASOPHILS	Text	DLC , 1-2%
OTHERS	Text	DLC
ESR	Text	0-10 MM IST Hr
PERIPHERAL_BLOOD_FILM_1	Text	
PERIPHERAL_BLOOD_FILM_2	Text	
HAEMATOCRIT_PCV	Text	
TOTAL_RBC	Text	MIL/C.MM
PLATELETS	Text	CU.MM
COLOUR_INDEX	Text	

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Field Name	Data Type	Description
MCHC	Text	
MCV	Text	FI
MCH	Text	PG
TEC	Text	CU.MM
VEC	Text	
PARACYTES	Text	
BLOOD_GROUPING	Text	
RH_FACTOR	Text	
RH_ANTIBODY_TILER	Text	
DIRECT	Text	
INDIRECT	Text	
PLASMA_FIBRINOGEN	Text	150-400 mg%
HIV	Text	
HBSAG	Text	
WIDAL	Text	
FOETAL_HAEMOGLOBIN	Text	
RETICULOCYTES	Text	
BLEEDING_TIME_MIN	Text	
BLEEDING_TIME_SEC	Text	
CLOTING_TIME_MIN	Text	
CLOTING_TIME_SEC	Text	
PROTHROMBIN_TIME_CONTROL	Text	
SECS_PATIENT_1	Text	

Field Name	Data Type	Description
SECS_PATIENT_2	Text	
PTTK_CONTROL	Text	
HAEMOLYSIS_START_FROM	Text	
SALINE_COMPLETE_AT	Text	
CLOT_RETRACTION_TIME_CRT	Text	
LE_CELLS	Text	
ESR_PLATELETS	Text	

9. Colonoscopy Test Table:-

Field Name	Data Type	Description
REGISTRATION_NO	Text	
TEST_DATE	Date/Time	
ANAL_CANAL	Text	
RECTUM	Text	
SIGMOID_COLON	Text	
DESCENDING_COLON	Text	
SPLENIC_FLEXURE	Text	
TRANSVERSE_COLON	Text	
HEPATIC_FLEXURE	Text	
ASCENDING_COLON	Text	
CAECUM	Text	
TERMINAL_ILEUM	Text	

Field Name	Data Type	Description
BIOPSY	Text	
OPINION_1	Text	
OPINION_2	Text	

10. Gastroscopy Test Table:-

Field Name	Data Type	Description
Registration_No	Text	
Test_Date	Date/Time	
Esophagus	Text	Esophagus
Fundus	Text	Stomach
Corpus	Text	Stomach
Antrum	Text	Stomach
Blub	Text	Deuodenum
First_Part	Text	Deuodenum
Second_Part	Text	Deuodenum
Biopsy	Text	
Opinion_First	Text	
Pylorospasm	Text	
Biliary_Reflux	Text	
Gut_Hypomotility	Text	
Opinion_second	Text	

11. Sonography Test Table:-

Field Name	Data Type	Description
Registration_No	Text	
Test_Date	Date/Time	
L_Size	Text	Liver
L_Echotexture	Text	Liver
Focal_Pathology	Text	Liver
Ihbr	Text	Liver
Pv	Text	Liver
Cbd	Text	Liver
G_Size	Text	Gall Bladder
Wall_Thickness	Text	Gall Bladder
Lumen	Text	Gall Bladder
P_Size	Text	Pancreas
P_Shape	Text	Pancreas
P_Echotexture	Text	Pancreas
S_Size	Text	Spleen
S_Shape	Text	Spleen
S_Echotexture	Text	Spleen
K_Size_Rt	Text	Kidneys
K_Size_Lt	Text	Kidneys
K_Shape_Rt	Text	Kidneys
K_Shape_Lt	Text	Kidneys

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Field Name	Data Type	Description
K_Cortex_Rt	Text	Kidneys
K_Cortex_Lt	Text	Kidneys
K_Corticomedullary_Differentiation_Rt	Text	Kidneys
K_Corticomedullary_Differentiation_Lt	Text	Kidneys
K_Pcs_Rt	Text	Kidneys
K_Pcs_Lt	Text	Kidneys
K_Calculus_Rt	Text	Kidneys
K_Calculus_Lt	Text	Kidneys
Aorta	Text	Petroperitoneal Structures
Ivc	Text	Petroperitoneal Structures
Pre_Paraortic_Lymphadenopathy	Text	Petroperitoneal Structures
Fluid_In_Peritoneal_Cavity	Text	Petroperitoneal Structures
Visualised_Bowel	Text	Petroperitoneal Structures
U_Status	Text	Urinary Bladder
U_Wall_Thickness	Text	Urinary Bladder
U_Calculus	Text	Urinary Bladder
Prevoid_Urinary_Vol	Text	Urinary Bladder
Postvoid_Urinary_Vol	Text	Urinary Bladder
Pr_Size	Text	Prostate
Pr_Echotexture	Text	Prostate

Field Name	Data Type	Description
Pr_Capsule	Text	Prostate
U_Size	Text	Uterus
U_Position	Text	Uterus
U_Echotexture	Text	Uterus
U_E_Cavity	Text	Uterus
U_Endometrium	Text	Uterus
O_Size_Rt	Text	Ovaries
O_Size_Lt	Text	Ovaries
O_Shape_Rt	Text	Ovaries
O_Shape_Lt	Text	Ovaries
O_Echotexture_Rt	Text	Ovaries
O_Echotexture_Lt	Text	Ovaries
O_Adenexal_Mass_Rt	Text	Ovaries
O_Adenexal_Mass_Lt	Text	Ovaries
Free_Fluid_In_Pouch_Douglas	Text	Ovaries
Impression	Text	

12. Stool Test Table:-

Field Name	Data Type	Description
Registration_No	Text	
Test_Date	Date/Time	
Color	Text	Physical
Consistency	Text	Physical

Field Name	Data Type	Description
Mucus	Text	Physical
Blood	Text	Physical
Wbc_Hpf	Text	Micoscopic
Rbc_Hpf	Text	Micoscopic
Mecrophages	Text	Micoscopic
Trophozoite	Text	Parasites
P_Ova	Text	Parasites
P_Cyst	Text	Parasites
C_Ova	Text	Concentration Method
C_Cyst	Text	Concentration Method
Occult_Blood	Text	Special Test
Ph	Text	Special Test
Red_Sub	Text	Special Test

13. Urine Table

Field Name	Data Type	Description
REGISTRATION_NO	Text	
TEST_DATE	Date/Time	
APPEARANCE	Text	ROUTINE
SP_GRAVITY	Text	ROUTINE
REACTION	Text	ROUTINE
ALBUMIN	Text	ROUTINE ,mg%
SUGAR	Text	ROUTINE

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Field Name	Data Type	Description
RBCS_HPE	Text	MICROSCOPIC
WBCS_HPF	Text	MICROSCOPIC
EPITH_CELLS_HPF	Text	MICROSCOPIC
CRYSTAILS_HPF	Text	MICROSCOPIC
CAST_HPF	Text	MICROSCOPIC
AMORPHOUS_SEDIMENT	Text	MICROSCOPIC
SPERMATOOZA	Text	MICROSCOPIC
OTHERS	Text	MICROSCOPIC
BILE_SALT	Text	SPECIAL_TEST
BILE_PIGMENT	Text	SPECIAL_TEST
UROBILINOGEN_HPF	Text	SPECIAL_TEST
PORPHOBILINOGEN	Text	SPECIAL_TEST
ACETONE	Text	SPECIAL_TEST
OCCULT_BLOOD	Text	SPECIAL_TEST
PKU	Text	SPECIAL_TEST
BECE_JONES_PROTEINS	Text	SPECIAL_TEST
AMINO_ACID	Text	SPECIAL_TEST
24HRS_URINARY_PROTEIN	Text	SPECIAL_TEST
24HRS_URINARY_17_KETOSTERIOD	Text	SPECIAL_TEST
24HRS_URINARY_VMA	Text	SPECIAL_TEST
TOTAL_VALUE	Text	SPECIAL_TEST
PREGNANCY_TEST	Text	SPECIAL_TEST

14. USG Table

Field Name	Data Type	Description
Registration_No	Number	
Test_Date	Date/Time	
LIV	Text	
LIV1	Text	
LIV2	Text	
GALL	Text	
GALL1	Text	
COMM	Text	
COMM1	Text	
PORT	Text	
PORT1	Text	
PAN	Text	
PAN1	Text	
SPLE	Text	
SPLE1	Text	
KIDN	Text	
KIDN1	Text	
KIDN2	Text	
RK	Text	
LK	Text	
BOTH	Text	
BOTH1	Text	

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Field Name	Data Type	Description
URIN	Text	
URIN1	Text	
N	Text	
N1	Text	
UTER	Text	
LONG	Text	
ANTE	Text	
TRAN	Text	
N3	Text	
ADNE	Text	
OTH	Text	
ECHO	Text	

15. X-Ray Table

Field Name	Data Type	Description
Registration_No	Text	
Test_Date	Date/Time	
X_Ray_Name	Text	
Remark_1	Text	
Remark_2	Text	
Remark_3	Text	
Remark_4	Text	
Remark_5	Text	

Field Name	Data Type	Description
Remark_6	Text	
Remark_7	Text	
Remark_8	Text	
Remark_9	Text	
Remark_10	Text	
Remark_11	Text	
Opinion	Text	

16. X-Ray Values Table

Field Name	Data Type	Description
X_Ray_Name	Text	
Remark_1	Text	
Remark_2	Text	
Remark_3	Text	
Remark_4	Text	
Remark_5	Text	
Remark_6	Text	
Remark_7	Text	
Remark_8	Text	
Remark_9	Text	
Remark_10	Text	
Remark_11	Text	
Opinion	Text	

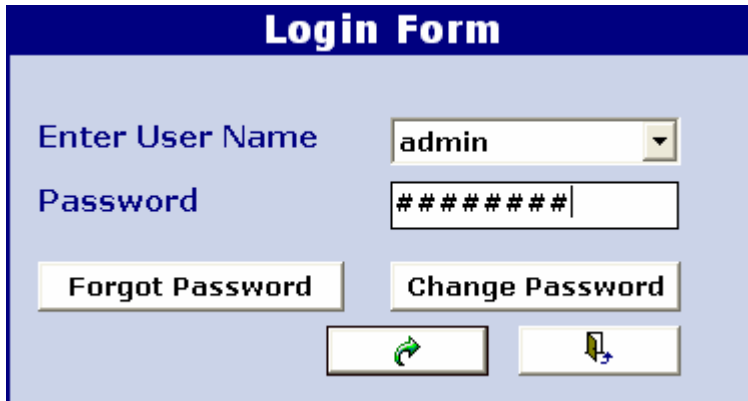
17. Patient Fee Table

Field Name	Data Type	Description
Receipt_No	Text	
Registartion_No	Text	
Receipt_Date	Date/Time	
F_Total_Fees	Number	Total Fees in Figure
W_Total_Fees	Text	Total Fees in Words
Receipt_Name	Text	SELF / Cheque
Dignosios_Fees	Number	
XRy_Fees	Number	
ECG_Fees	Number	
Lab_Test_Fees	Number	
Gastroscopy_Fees	Number	
USG_Fees	Number	
Indoor_Injection_Fees	Number	
Colonoscopy_Fees	Number	

7. Snapshots

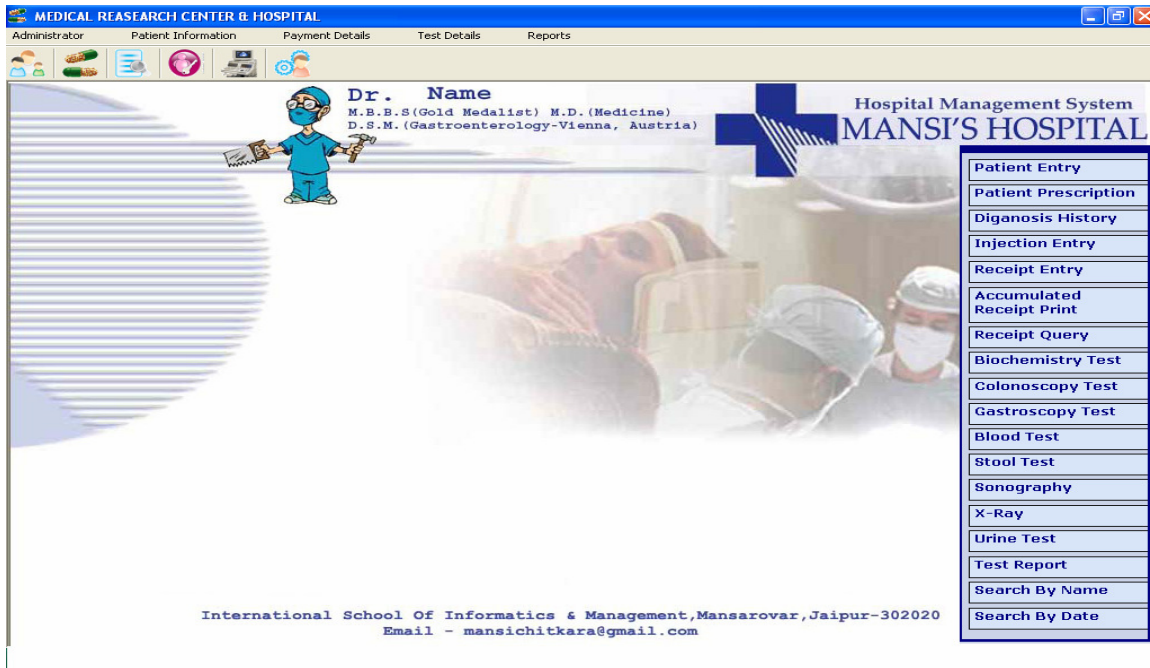
(Wire-Frames/ UI Design)

1. Login Form



The Login Form has a dark blue header with the text "Login Form" in white. Below the header, there are two input fields: "Enter User Name" with a dropdown menu showing "admin" and "Password" with a masked input field showing "#####". Below these fields are two buttons: "Forgot Password" and "Change Password". At the bottom, there are two buttons with icons: a green circular arrow and a blue key icon.

2. Home Page



The Home Page is a web application interface for "MEDICAL RESEARCH CENTER & HOSPITAL". It features a navigation bar with links: Administrator, Patient Information, Payment Details, Test Details, and Reports. The main content area includes a cartoon doctor character, a list of medical services (Patient Entry, Patient Prescription, Diagnosis History, Injection Entry, Receipt Entry, Accumulated Receipt Print, Receipt Query, Biochemistry Test, Colonoscopy Test, Gastroscopy Test, Blood Test, Stool Test, Sonography, X-Ray, Urine Test, Test Report, Search By Name, Search By Date), and contact information for the International School Of Informatics & Management, Mansarovar, Jaipur-302020. The page also displays the name and credentials of Dr. Name, M.B.B.S (Gold Medalist) M.D. (Medicine) D.S.M. (Gastroenterology-Vienna, Austria).

3. Patient Entry Form

Patient Entry Form			
Registration Number	<input type="text"/>	Registration Date	<input type="text"/>
Patient Name	<input type="text"/>	City	<input type="text"/>
Patient Address	<input type="text"/>	TelePhone / Mobile Number	<input type="text"/>
Marital Status	<input type="text" value="CPatD"/>	Gender	<input type="text" value="CPatD"/>
Religion	<input type="text" value="CPatD"/>	Status	<input type="text" value="CPatD"/>
Father's / Husband's Name	<input type="text"/>	Age	<input type="text"/> Yrs.
<input type="button" value="Add"/> <input type="button" value="Update"/> <input type="button" value="Edit"/> <input type="button" value="Search"/> <input type="button" value="Exit"/>			

4. Prescription Entry Form

Prescription Entry Form																																				
Registration Number	<input type="text"/>	<input type="button" value="Submit"/>	Name	<input type="text"/>																																
Diagnosis Date	<input type="text"/>	Provisional Diagnosis	<input type="text"/>																																	
<table border="1"> <thead> <tr> <th>TEST</th> <th>DIET ADVICE</th> <th>INJECTION DATES</th> <th>MEDICINE PRESCRIBED</th> </tr> </thead> <tbody> <tr> <td colspan="4"> Tests For Patient </td> </tr> <tr> <td><input type="checkbox"/> Biochemistry</td> <td><input type="checkbox"/> Colonoscopy</td> <td><input type="checkbox"/> X-RAY</td> <td>Other Test <input type="text"/></td> </tr> <tr> <td><input type="checkbox"/> Stool</td> <td><input type="checkbox"/> Gastroscopy</td> <td><input type="checkbox"/> Sonography</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Blood</td> <td><input type="checkbox"/> Urine</td> <td><input type="checkbox"/> ECG</td> <td></td> </tr> <tr> <td colspan="4"> Remark <input type="text"/> </td> </tr> <tr> <td colspan="2">Reconsultation Week <input type="text"/></td> <td colspan="2">Reconsultation Date <input type="text"/></td> </tr> <tr> <td colspan="2">Final Diagnosis <input type="text"/></td> <td colspan="2"><input type="button" value="Update"/></td> </tr> </tbody> </table>					TEST	DIET ADVICE	INJECTION DATES	MEDICINE PRESCRIBED	Tests For Patient				<input type="checkbox"/> Biochemistry	<input type="checkbox"/> Colonoscopy	<input type="checkbox"/> X-RAY	Other Test <input type="text"/>	<input type="checkbox"/> Stool	<input type="checkbox"/> Gastroscopy	<input type="checkbox"/> Sonography		<input type="checkbox"/> Blood	<input type="checkbox"/> Urine	<input type="checkbox"/> ECG		Remark <input type="text"/>				Reconsultation Week <input type="text"/>		Reconsultation Date <input type="text"/>		Final Diagnosis <input type="text"/>		<input type="button" value="Update"/>	
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Final Diagnosis <input type="text"/>		<input type="button" value="Update"/>																																		
<input type="button" value="Add New"/> <input type="button" value="Edit"/> <input type="button" value="Print First"/> <input type="button" value="PrintSecond"/> <input type="button" value="Exit"/>																																				

5. Patient Diagnosis History Form

Patient Diagnosis History From			
Registration Number	<input type="text"/>	<input type="button" value="Submit"/>	Name <input type="text"/>
Dignosis Date	<input type="text"/>	Age <input type="text"/>	Gender <input type="text"/>
<input type="button" value="DETAILS..."/>			<input type="button" value="Exit"/>

6. Patient Injection Entry Form

Patient Injection Entry							
Registration Number	<input type="text"/>	<input type="button" value="Submit"/>	Name <input type="text"/>				
Diagnosis Date	<input type="text"/>	Age <input type="text"/>	Gender <input type="text"/>				
Injection Date	<input type="text"/>	<input type="button" value="Injected"/>	Address <input type="text"/>				
Injection Status							
<table><thead><tr><th>Injection Date</th><th>Status</th></tr></thead><tbody><tr><td><input type="text"/></td><td><input type="text"/></td></tr></tbody></table>				Injection Date	Status	<input type="text"/>	<input type="text"/>
Injection Date	Status						
<input type="text"/>	<input type="text"/>						
			<input type="button" value="Exit"/>				

7. Patient Receipt Entry Form

Patient Receipt Entry			
Registration Number	<input type="text"/>	<input type="button" value="Submit"/>	Name <input type="text"/>
Receipt No	<input type="text"/>	Age <input type="text"/>	Gender <input type="text"/>
Receipt Date	<input type="text"/>		
Test Fees			
Diagnosis Fees	<input type="text"/>	Lab Test Fees	<input type="text"/> Indoor Injection Fees <input type="text"/>
X-RAY Fees	<input type="text"/>	Gastroscopy Fees	<input type="text"/> Colonoscopy Fees <input type="text"/>
E.C.G. Fees	<input type="text"/>	USG Fees	<input type="text"/>
Total Fees in Number	<input type="text"/>		
Total Fees in Word	<input type="text"/>		
<input type="button" value="Add"/> <input type="button" value="Update"/> <input type="button" value="Edit"/> <input type="button" value="Print"/> <input type="button" value="Exit"/>			

8. Accumulated Receipt Form

Accumulated Receipt			
Registration No.	<input type="text"/>	<input type="button" value="SUBMIT"/>	Name : <input type="text"/>
Receipt Start Date	<input type="text"/>	Age : <input type="text"/>	Gender : <input type="text"/>
	(MM/DD/YYYY)		
Receipt End Date	<input type="text"/>	Address : <input type="text"/>	
	(MM/DD/YYYY)		
Days	<input type="text" value="0"/>		
Bed Charges	<input type="text" value="0"/>		
	(Per Day)		
<input type="button" value="PRINT"/> <input type="button" value="DISPLAY"/> <input type="button" value="EXIT"/>			

9. Patient Receipt Query Form

Patient Receipt Query	
Registration Number	<input type="text"/>
<input type="button" value="Submit"/>	Name <input type="text"/>
Receipt Date	<input type="text"/>
Age	<input type="text"/>
Gender	<input type="text"/>
Total Fees in Number	<input type="text"/>
Dignosis Fees	<input type="text"/>
Address	<input type="text"/>
Total Fees in Word	<input type="text"/>
<input type="button" value="Complete Receipt Details...."/>	
<input type="button" value="Exit"/>	

10.Gastroscopy Test Form

Gastroscopy Test	
Registration Number	<input type="text"/>
<input type="button" value="SUBMIT"/>	Patient Name <input type="text"/>
Test Date	<input type="text"/>
Age	<input type="text"/>
Gender	<input type="text"/>
<div><div>Gastroscopy Test Entry1</div><div>Gastroscopy Test Entry2</div></div>	
<div><div>Esophagus</div><div><div>Stomach</div><div>Fundus</div><div>Corpus</div><div>Antrum</div></div><div><div>Deuodenum</div><div>Bulb</div><div>First Part</div><div>Second Part</div></div></div>	
<div><div><input type="button" value="NEW"/></div><div><input type="button" value="SAVE"/></div><div><input type="button" value="EDIT"/></div><div><input type="button" value="CLEAR"/></div><div><input type="button" value="PRINT"/></div><div><input type="button" value="EXIT"/></div></div>	

11. Biochemistry Test Form

Biochemistry Test			
Registration Number	<input type="text"/>	<input type="button" value="SUBMIT"/>	Patient Name <input type="text"/>
Test Date	<input type="text"/>	Age	<input type="text"/> Gender <input type="text"/>
<div> <div>Biochemistry & RFT & Lipid Profile</div> <div>LFT</div> <div>Miscellaneous</div> <div>GTT</div> </div>			
Biochemistry Glucose Fasting <input type="text"/> mg% 70-110 mg % Glucose R/PP <input type="text"/> mg% 100 to 140 mg%		Lipid Profile S.Cholesterol <input type="text"/> mg% 130-250 mg % HDL Cholesterol <input type="text"/> mg% 30-55 mg % LDL Cholesterol <input type="text"/> mg% 60-165 mg % VLDL Cholesterol <input type="text"/> mg% 0-60 mg % Triglycerides <input type="text"/> mg% 60-165 mg % S.Total.Lipids <input type="text"/> mg% 400-700 mg %	
RFT Blood Urea <input type="text"/> mg% 10-40 mg % Creatinine <input type="text"/> mg% 0.6-1.5 mg % BUN <input type="text"/> mg% 8-20 mg %			
<input type="button" value="NEW"/> <input type="button" value="SAVE"/> <input type="button" value="EDIT"/> <input type="button" value="CLEAR"/> <input type="button" value="PRINT"/> <input type="button" value="EXIT"/>			

12. Colonoscopy Test Form

Colonoscopy Test			
Registration Number	<input type="text"/>	<input type="button" value="SUBMIT"/>	Patient Name <input type="text"/>
Test Date	<input type="text"/>	Age	<input type="text"/> Gender <input type="text"/>
<div> <div>ANAL CANAL</div> <div>RECTUM</div> <div>SIGMOID COLON</div> <div>DESCENDING COLON</div> <div>SPLENIC FLEXURE</div> <div>TRANSVERSE COLON</div> </div>			
<div> <div>HEPATIC FLEXURE</div> <div>ASCENDING COLON</div> <div>CAECUM</div> <div>TERMINAL ILEUM</div> <div>BIOPSY</div> <div>OPINION</div> </div>			
<input type="button" value="NEW"/> <input type="button" value="SAVE"/> <input type="button" value="EDIT"/> <input type="button" value="CLEAR"/> <input type="button" value="PRINT"/> <input type="button" value="EXIT"/>			

13. Blood Test Form

Blood Test			
Registration Number :	<input type="text"/>	<input type="button" value="SUBMIT"/>	Patient Name : <input type="text"/>
Test Date :	<input type="text" value="5/24/2008"/>	Age : <input type="text"/>	Gender : <input type="text"/>
<div> <div>Page 1</div> <div>Page 2</div> <div>Page 3</div> <div>Page 4</div> </div>			
<div> Haemoglobin : <input type="text"/> gms% (13-15 gms%) T.L.C : <input type="text"/> Cells/Cu (4500-10500/C) </div>			
<div> <div>DLC</div> <div> <div>Neutrophils : <input type="text"/> % (45-68%)</div> <div>Basophils : <input type="text"/> % (1-2%)</div> <div>Lymphocytes: <input type="text"/> % (25-45%)</div> <div>Platelets : <input type="text"/> /Cu.mm</div> <div>Eosinophil : <input type="text"/> % (2-6%)</div> <div>Other's : <input type="text"/></div> <div>Monocytes : <input type="text"/> % (1-4%)</div> </div> </div>			
<div> <input type="button" value="NEW"/> <input type="button" value="SAVE"/> <input type="button" value="EDIT"/> <input type="button" value="CLEAR"/> <input type="button" value="PRINT"/> <input type="button" value="EXIT"/> </div>			

14. Stool Test Form

Stool Test Form	
Registration Number :	<input type="text"/> <input type="button" value="SUBMIT"/>
Patient Name :	<input type="text"/>
Test Date :	<input type="text"/>
Age :	<input type="text"/>
Gender :	<input type="text"/>
<div> <div>Physical & Microscopic</div> <div>Concentration Method & Parasites & Special Test</div> </div>	
<div> <div>Physical</div> <div> Color : <input type="text"/> Consistency : <input type="text"/> Mucus : <input type="text"/> Blood : <input type="text"/> </div> </div>	
<div> <div>Micoscopic</div> <div> WBCs/HPF : <input type="text"/> RBCs/HPF : <input type="text"/> Mecrophages : <input type="text"/> </div> </div>	
<div> <input type="button" value="NEW"/> <input type="button" value="SAVE"/> <input type="button" value="EDIT"/> <input type="button" value="CLEAR"/> <input type="button" value="PRINT"/> <input type="button" value="EXIT"/> </div>	

15.Sonography Test Form

Sonography Form					
Registration Number : <input type="text"/>		<input type="button" value="SUBMIT"/>		Patient Name : <input type="text"/>	
Test Date : <input type="text" value="5/24/2008"/>		Age : <input type="text"/>		Gender : <input type="text"/>	
Liver & Gall Bladder	Pancreas & Spleen	Kidneys	Retroperitoneal Structure & Urinary Bladder	Prostate & Uterus	Ovaries
Impression					
Liver SIZE : <input type="text"/> PV : <input type="text"/> ECHOTEXTURE : <input type="text"/> CBD : <input type="text"/> FOCAL PATHOLOGY : <input type="text"/> IHBR : <input type="text" value="DILATED"/>			Gall Bladder SIZE : <input type="text"/> WALL THICKNESS : <input type="text"/> LUMEN : <input type="text"/>		
<input type="button" value="NEW"/> <input type="button" value="SAVE"/> <input type="button" value="EDIT"/> <input type="button" value="CLEAR"/> <input type="button" value="PRINT"/> <input type="button" value="EXIT"/>					

16.X-Ray Form

X - RAY			
RegNumber : <input type="text"/>		<input type="button" value="SUBMIT"/>	
Patient Name : <input type="text"/>		Test Date : <input type="text"/>	
X-RAY Name: <input type="text" value="Normal"/>		Age : <input type="text"/> Gender : <input type="text"/>	
REMARK 1	<input type="text"/>	REMARK 7	<input type="text"/>
REMARK 2	<input type="text"/>	REMARK 8	<input type="text"/>
REMARK 3	<input type="text"/>	REMARK 9	<input type="text"/>
REMARK 4	<input type="text"/>	REMARK 10	<input type="text"/>
REMARK 5	<input type="text"/>	REMARK 11	<input type="text"/>
REMARK 6	<input type="text"/>	OPINION	<input type="text"/>
<input type="button" value="NEW"/> <input type="button" value="SAVE"/> <input type="button" value="EDIT"/> <input type="button" value="CANCEL"/> <input type="button" value="PRINT"/> <input type="button" value="EXIT"/>			

17.Urine Test Form

Urine Test			
Registration Number	<input type="text"/>	<input type="button" value="SUBMIT"/>	Name <input type="text"/>
Test Date	<input type="text"/>	Age <input type="text"/>	Gender <input type="text"/>
Routine & Microscopic		Special Tests	
Routine Appearance <input type="text"/> Sp Gravity <input type="text"/> Reaction <input type="text"/> Albumin <input type="text"/> mg% Sugar <input type="text"/>		Microscopic RBCs/HPF <input type="text"/> Cast/HPF <input type="text"/> WBCs/HPF <input type="text"/> Amorphous Sediments <input type="text"/> EPITH Cells/HPF <input type="text"/> Spermatozoa <input type="text"/> Crystals/HPF <input type="text"/> Others <input type="text"/>	
<input type="button" value="NEW"/> <input type="button" value="SAVE"/> <input type="button" value="EDIT"/> <input type="button" value="CLEAR"/> <input type="button" value="PRINT"/> <input type="button" value="EXIT"/>			

18.Test Reports Form

TEST REPORTS	
Registration Number :	<input type="text"/> <input type="button" value="SUBMIT"/>
Name :	<input type="text"/>
Test Date :	<input type="text"/> (MM/DD/YYYY)
Age :	<input type="text"/>
Gender :	<input type="text"/>
Test Name :	<input type="text"/>
Address :	<input type="text"/>
<input type="button" value="PRINT"/> <input type="button" value="DISPLAY"/> <input type="button" value="EXIT"/>	

19.Search By Name Form

Search By Name	
<p>Enetr Name</p> <div> A.H.KHAN A.K. GUPTA A.K. NAG A.K.ARORA A.K.MATHUR A.K.PANDEY A.S. BHATNAGER A.S.QUAZI A.V.GUPTA AABHAS SHARMA AACHARYA DEV DAKSHA AADITYA SHARMA AAKASH JANGID AARTI BHRDWAJ AARTI KHANDELWAL AARTI SONI AARYAN JAIN AASHISH SHARMA AASMA BEGHUM AASTHA SAMWLANI ABDUL HAKIM ABDUL MUJEEB </div>	<p>Patient Details</p> <p>Registartion No <input type="text"/></p> <p>Name <input type="text"/></p> <p>Age <input type="text"/> Gender <input type="text"/></p> <p>Address <input type="text"/></p> <p>Marital Status <input type="text"/></p> <p>Religion <input type="text"/></p> <p>Father / Husband Name <input type="text"/></p> <p>Status <input type="text"/> <input type="button" value="Next"/> <input type="button" value="Exit"/></p> <p>No of Record <input type="text"/></p>

20.Search By Date Form

Search By Date							
Select Month <input type="text"/>	Enter Year <input type="text"/>						
Enter Date <input type="text"/>	<input type="button" value="Show"/> <input type="button" value="Exit"/>						
<div> <table border="1"> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table> <div></div> </div>							
<p>Patient Details</p> <div> <div> Registartion No <input type="text"/> Name <input type="text"/> Address <input type="text"/> </div> <div> Marital Status <input type="text"/> Religion <input type="text"/> Father / Husband Name <input type="text"/> Age <input type="text"/> Gender <input type="text"/> </div> </div>							

8. Conclusion

The project **Hospital Management System (HMS)** is for computerizing the working in a hospital. The software takes care of all the requirements of an average hospital and is capable to provide easy and effective storage of information related to patients that come up to the hospital.

It generates test reports; provide prescription details including various tests, diet advice, and medicines prescribed to patient and doctor. It also provides injection details and billing facility on the basis of patient's status whether it is an indoor or outdoor patient.

The system also provides the facility of backup as per the requirement.

9. Bibliography

1. CSC based services.
2. SMS hospital reports.
3. Online Retail Pharmacy.
4. Online Medical Magazines and Journals.
5. Online Wellness Coach service.
6. Online/ SMS blood bank status update.
7. Online Tele-medicine.
8. Online appointment with doctor.