SOFTWARE QUALITY ENGINEERING

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Title: Hospital Management System

HOSPITAL MANAGEMENT SYSTEM

1. PROJECT SCOPE:

A project of hospital management system includes patient registration into the hospital, storing their records, assigning doctor, allocating ward and generating computerized bill by receptionist. If we want to see the record of the old patient we will just have to search it by its name and Patient ID. Bills are generated on separate sheet by recording each facility that the customer is provided. All that work is done by the receptionist and other hospital management staff.

The hospital management system lets patients sign up and stores information about their diseases. Our software can give each patient a unique ID and keep track of all of their information. You can use the Hospital Management System by putting in your username and password. Either an administrator or a receptionist can let you in. The only person who can add information to the database is that person. The information is easy to get. The interface makes it easy to use. The data are well protected, and the processing of the data is quick, accurate, and useful.

2. PROJECT GOALS AND OBJECTIVES:

After hospital software is installed, it is easier and more accurate to do daily tasks like registering patients, managing admissions, and running all of the different departments as a whole. Hospital management software has modules that are easy to use and get to.

1. Achieving organizational objectives

2. Improving patient/client satisfaction

3. Cost management by reducing preventable errors

4. Increasing the organization's effectiveness

5. Improving customer service

6. Improving the safety culture and risk awareness

7. Providing insight into performance at individual and team levels

3. TEST PLAN:

1. Verify that the portal for new patient registration has all the mandatory fields required for registering a patient.

2. Verify that after filling the patient details and successful payment a Patient-Card is printed.
3. Verify that card has information like patient details, doctor assigned, department, the application number, DOJ, bed allocated(if applicable) etc.
4. Verify that after patient checkup based on the requirement the details are updated in the patient details database.
5. Verify that for existing patients based on the application number of the patient; their records are added/updated in the database.
6. Verify that the system has an admin for doctors as well.
7. Verify that for each doctor's details like their timings, specialty, fee, patient visited is visible to the authorized users.
8. Verify that new details of new doctors can be added to the system.
9. Verify that the details of existing users can be updated in the system.
10. Verify that the doctor's record can be deleted from the system.

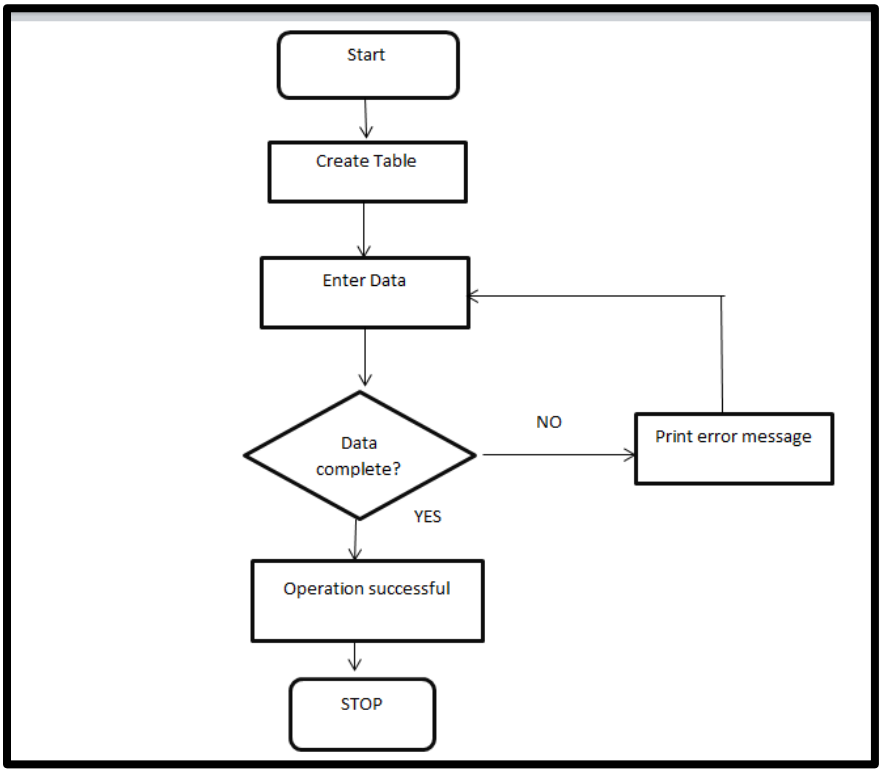
a) TEST CASES:

❖ TEST SUITE 1(FUNCTIONALITY TESTING):

TEST CASE ID 1	Name	Requirement	Preconditions	Steps
1	Verify that the data is entering accurately into the system.	The query you are entering for the insertion of record should be accurate.	Tables should already exist in which we are going to insert the record. Suppose you want to insert data in the table of hospital so you must know the following things to insert it. • Hospital ID • Name of hospital • Hospital type • Hospital address	• Open SQL • Type query • For integer type value just write 1, 2, 3. • For variables single inverted comma's are used. • Query for entering data in hospital record is (Insert into Hospital values(1,' AQSA_hospital', 'Islamabad, 'Private'); • After that

				new one data record is created.

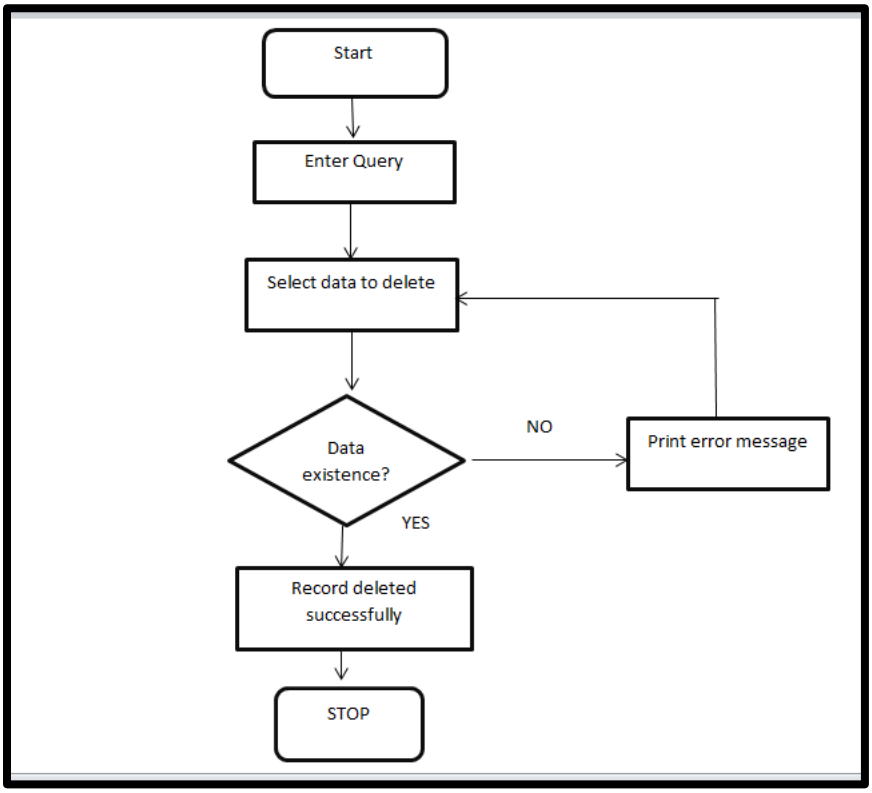
FLOWCHART:



TEST CASE ID 2	Name	Requirement	Preconditions	Steps
2	Verify that the data is deleting accurately from the system.	The query you are entering for the deletion of record should be accurate.	Tables should already exist through which you are going to delete the certain data. Suppose you want to delete data from the table of staff so you must know the following thing to delete it. • Staff name	• Open SQL • Type query • For variables single inverted comma's are used. • Query for deleting data from staff record is (Delete from staff where staff_name='shamsa';) • After that this query will delete

				the whole record where staff name= shamsa.

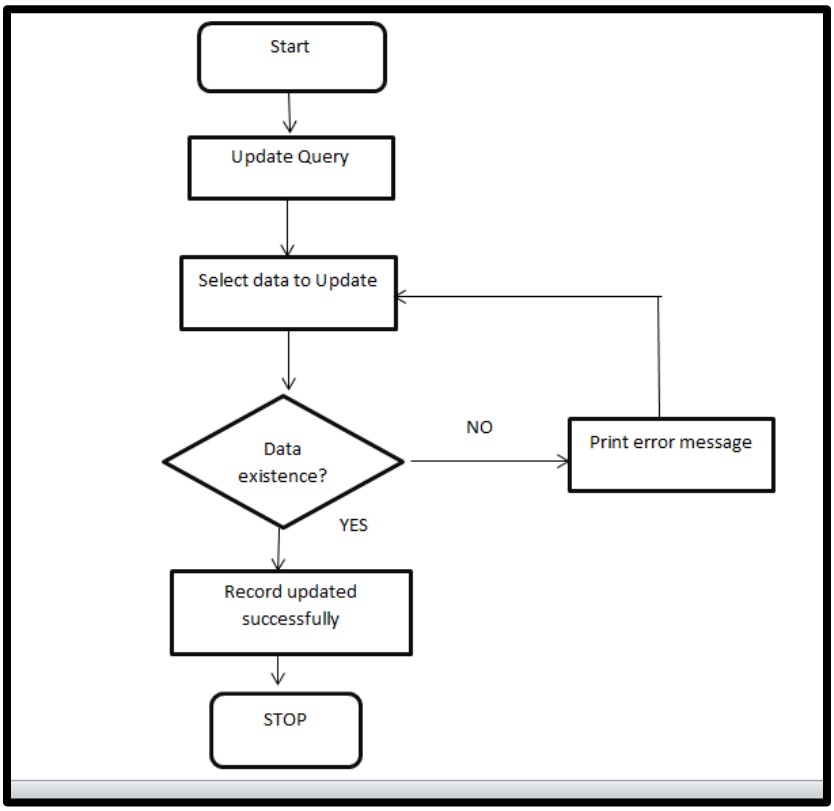
FLOWCHART:



TEST CASE ID 3	Name	Requirement	Preconditions	Steps
3	Verify that the data is updating accurately in the system.	The query you are entering for the updation of record should be accurate.	Tables should already exist through which you are going to update the certain data. Suppose you want to update the data of the doctor from the table of doctor so you must know the	• Open SQL • Type query • For variables single inverted comma's are used. • Query for updation of data from Doctor record

			following things to update it. • Doctor ID • Doctor name • Specialization	is(Update Doctor set specialization = 'Nuriology' where doctor_id = 1) After that this query This query will update the record by changing the specialization column and replacing the cardiology.

FLOWCHART:

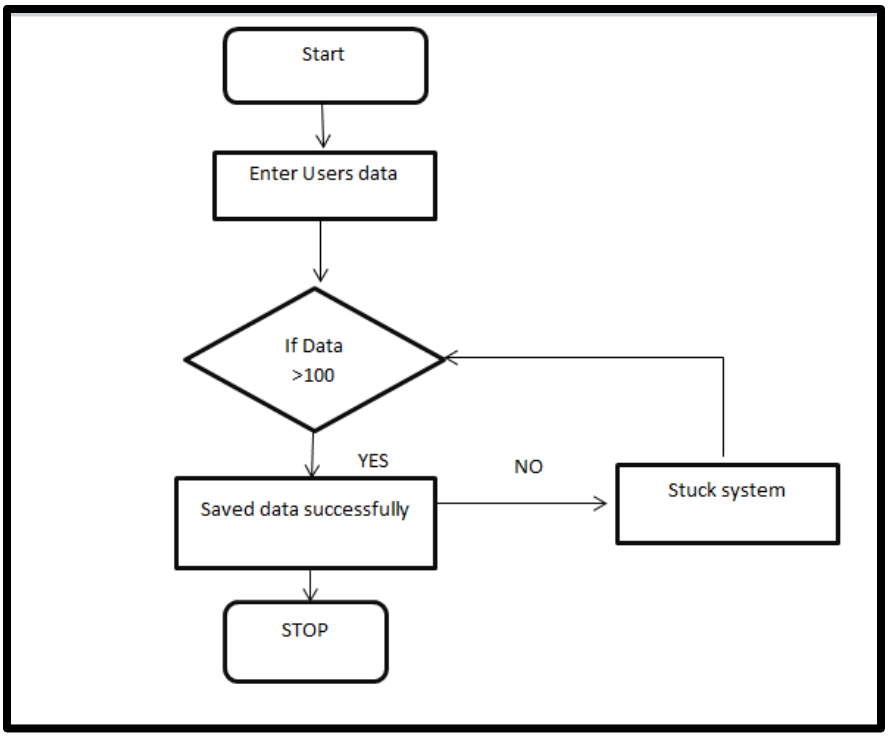


4. TEST SUITE 2(PERFORMANCE TESTING):

TEST CASE ID 1	Name	Requirement	Preconditions	Steps

1	Load Handling	Verify that the designed application can handle loads or not.	If there are multiple patients who want to registered themselves online so the given system is working well for all of them or not.	• Open SQL • Type query • For variables single inverted comma's are used. • Query for deleting data from staff record is (Delete from staff where staff_name='shamsa';) After that this query will delete the whole record where staff name= shamsa. • Then type another query for the insertion of record(Insert into Hospital values(1,' AQSA_hospital', 'Islamabad, 'Private') • Type multiple queries to check the performance of the system.

FLOWCHART:



5. TEST SUITE 3(USABILITY TESTING):

TEST CASE ID 1	Name	Requirement	Preconditions	Steps
1	Undo the function performed.	Verify if Going back, undoing an action, or on touching the wrong item can easily be undone	• You have done a certain action now you are trying to undone it as you think that it's wrong action.	• Open application • First done a certain action • Then try to undone it • Going back, undoing an action, or on touching the wrong item • should be easily undone.

6. TEST SUITE 4(SECURITY TESTING):

TEST CASE ID 1	Name	Requirement	Preconditions	Steps

1	Data protection	Verify that the data of patients, staff and the doctor data is protected.	• No one else the hospital management department can see the data of hospital • No one make changes to the data expect the allowed one • Data should be secure	• In order to check that the data is protected or not try to access the hospital information from fake and unauthorized sides • If the data is still available and you can make changes in it so the system you have designed is failed in secure the data of the hospital.

b) TEST REPORT:

- **DATA INSERTION:**

Input Query	Expected output	Actual output	Remarks
Insert into Hospital values(1,' AQSA_hospital', 'Islamabad, 'Private');	I row should be created which contain the hospital name as AQSA, hospital type as private and hospital address as Islamabad	Same as expected	PASS
Insert into Hospital values(2,' Shamsa_hospital', 'Rawalpindi', 'Government');	I row should be created which contain the hospital name as Shamsa, hospital type as government and	Same as expected	PASS

	hospital address as Rawalpindi		
Select * from patient;	Should display the record of all patients registered in hospital	Same as expected	PASS

OUTPUT:

- **DATA INSERTION FROM USER:**

Input Query	Expected output	Actual output	Remarks
Insert into Patient(Patient_id, patient_name, gender, Patient_address) values(&Patient_id, &patient_name, &gender, &patient_address);	Data should be entered at run time by the patient. Entering data should include Patient ID, its name, gender, and address.	Same as expected	PASS
Select * from patient;	Should display the record of all patients registered in hospital	Same as expected	PASS

OUTPUT;

```
SQL> @d:\AQSA_shamsa_project.sql;
Enter value for patient_id: 02
Enter value for patient_name: 'AQSA TABASSUM'
Enter value for gender: 'FEMALE'
Enter value for patient_address: 'ISLAMABAD'
old   2: values(&Patient_id, &patient_name,&gender,&Patient_address)
new   2: values(02, 'AQSA TABASSUM','FEMALE','ISLAMABAD')

1 row created.

SQL> @d:\AQSA_shamsa_project.sql;
Enter value for patient_id: 08
Enter value for patient_name: 'SHAMSA'
Enter value for gender: 'FEMALE'
Enter value for patient_address: 'SIALKOT'
old   2: values(&Patient_id, &patient_name,&gender,&Patient_address)
new   2: values(08, 'SHAMSA','FEMALE','SIALKOT')

1 row created.

SQL> @d:\AQSA_shamsa_project.sql;
Enter value for patient_id: 03
Enter value for patient_name: 'AMNA'
Enter value for gender: 'FEMALE'
Enter value for patient_address: 'MURREE'
old   2: values(&Patient_id, &patient_name,&gender,&Patient_address)
new   2: values(03, 'AMNA','FEMALE','MURREE')

1 row created.
```

```
SQL> select * from Hospital;

HOSPITAL_ID HOSPITAL_NAME                  HOPSITAL_ADDRESS
----------- ------------------------------ ------------------------------
HOSPITAL_TYPE
------------------------------
          1 AQSA_hospital                  Islamabad
Private

          2 Shamsa_hospital                Rawalpindi
Government


SQL> _
```

- **DATA UPDATION:**

Input Query	Expected output	Actual output	Remarks
Update Doctor set specialization = 'Nuriology' where doctor_id = 1	This query will update the record by changing the specialization column and replacing the cardiology with neurology where id =1. In this record Aqsa tabassum has the id 1 so its record has updated.	Same as expected	PASS
Select * from Doctor;	Should display the updated record.	Same as expected	PASS

OUTPUT;

- **DATA DELETION:**

Input Query	Expected output	Actual output	Remarks
Delete from staff where staff_name='shamsa';	Now this query will delete the whole record where staff name= shamsa.	Same as expected	PASS
Select * from staff;	Should display the updated staff after deletion.	Same as expected	PASS

OUTPUT;

- **DISPLAYING DATA FROM DATABASE:**

Input Query	Expected output	Actual output	Remarks
Select department_name, doctor_name, specialization from department, doctor where doctor.department_id = department.department_id	This query will display the department name, doctor name and specialization from the doctor and department table at the same place.	Same as expected	PASS

OUTPUT;

```
SQL> select department_name, doctor_name,specialization from department, doctor
where doctor.department_id= department.department_id;

DEPARTMENT_NAME                DOCTOR_NAME
------------------------------ ------------------------------
SPECIALIZATION
------------------------------
Psychology_AQSA                AQSA_TABASSUM
Nuriology

Cardiology_shamsa              shamsa
GYNE
```