

Project Sunshine Medical

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Project URL: Please see resume for project URL

Executive Summary

This database was specifically designed for Sunshine Medical to address delayed care that its patients were experiencing. Hospital management attributed the delayed care to a lack of patient prioritization within its departments. From inception to final product release, the database design has undergone a number of draft iterations where each was scrutinized against specific criteria ultimately yielding progressive implementations to remediate any performance or UI shortcomings. Below is a summary of feedback and changes for this project.

Issues found at each step:

Step 1: Entity naming was not consistent and there was minor confusion with entity relationships.

Step 2: Attribute discrepancies between the outline, schema and DLL. Misplaced foreign keys for certain entities.

Step 3: Missing INSERT/SELECT and filter function for specific entities. No nullable relationship. Inconsistencies with CRUD operation naming.

Step 4: Aesthetic UI issues - readability/useability.

Step 5: Drop downs. Minor aesthetic UI issues - readability/useability.

Changes:

Step 1: Entity names were made to be consistent and the entities in question (tests, departments and test records) were clarified through additional explanation and ERD updates.

Step 2: DDL.sql, outline and schema were corrected for attribute discrepancies. Foreign keys were corrected for “Tests” and “Test Records”.

Step3: DML.sql file was updated with filter function (dynamic search). UI and relevant SQL files were updated with INSERT/SELECT functionality. Optional relationship was implemented on the intersection table. CRUD naming was harmonized (e.g. “edit” vs “update”).

Step 4: Added placeholders and pattern attributes to control user input. Harmonized data types between jinja files and DDL.SQL files. Revised CSS files to render enhanced layout organized and readability.

Step 5/6: Added multiple to dynamic drop downs. Modified styling.

Project Outline

Sunshine Medical currently provides care for 2,300 patients per year through a variety of services including primary/urgent care, emergency and laboratory testing and imaging. Hospital management has determined that inefficiencies in patient testing/imaging are contributing to a growing patient backlog. If resolved, Sunshine Medical projects that it has the operational capacity to provide quality care for upwards of 10,000 patients per year.

Sunshine Medical has retained the services of the Kernel Sanders Consulting firm who will implement a website driven database to record/prioritize patient testing for departments such as Pathology (main laboratory testing) and Radiology (imaging).

The goal of this database is to address the inefficiencies experienced by Sunshine Medical's patient testing and imaging management system. Patient information is recorded in the *Patients* entity, allowing the creation of new patients and/or updating previous patients. Ordered tests are stored within the *Test_Records* entity and provide information on the test ordered, the department responsible, testing date requested, date of completed testing, and priority level. Hospital testing departments can then be determined and tests scheduled according to their priority level.

While patients can have multiple records (i.e. multiple tests ordered over time), we are assuming that each visit and its related record in *Test_Records* pertains to one test.

Database Outline

Patients - records the details of the patients admitted

- **Attributes**

- patient_id: INT, auto_increment, unique, not NULL, PK
- first_name: VARCHAR(50), not NULL
- last_name: VARCHAR(50), not NULL
- birthday: DATE, not NULL
- phone: CHAR(12), not NULL
- email: VARCHAR(100), not NULL
- street1: VARCHAR(100), not NULL
- street2: VARCHAR(100)
- city: VARCHAR(50), not NULL
- zip: CHAR(5), not NULL

- **Relationships**

- 1:M Test_Records: A patient can have multiple tests ordered for them

Test_Records - record of tests ordered for patients, specifying for which patient, the type of test ordered, the responsible department, priority level, and progress.

- **Attributes**

- record_id: INT, auto_increment, unique, not NULL, PK
- patient_id: INT, FK
- test_id: INT, FK
- requested_date: DATE, not NULL
- completed: BOOLEAN (TINYINT), not NULL, default 0
- completed_date: DATE
- priority_level: INT, not NULL

- **Relationships**

- M:1 Patients: Each test record pertains to one patient
- M:1 Tests: Each test record pertains to one test

Departments - record of testing departments within hospital to track responsible department for a test and the total number of tests within each department to track capacity

- **Attributes**

- dept_id: int, unique, not NULL, PK
- dept_name: VARCHAR(100), not NULL
- total_tests: INT, not NULL

- **Relationships**

- 1:M Tests: a department can conduct multiple different tests

Tests - record of tests performed at hospital - e.g. X-Ray, Blood test

- **Attributes**

- test_id: INT, unique, auto_increment, not NULL, PK
- test_name: VARCHAR(50), not NULL
- test_desc: VARCHAR(255), not NULL
- dept_id: INT, FK

- **Relationships**

- 1:M Test_Records: a test can be ordered for multiple patients (be on multiple records)
- M:1 Departments: Each test is handled by one department
- M:N Equipment: each test can use multiple equipment

Equipment - record of equipment used for tests

- **Attributes**

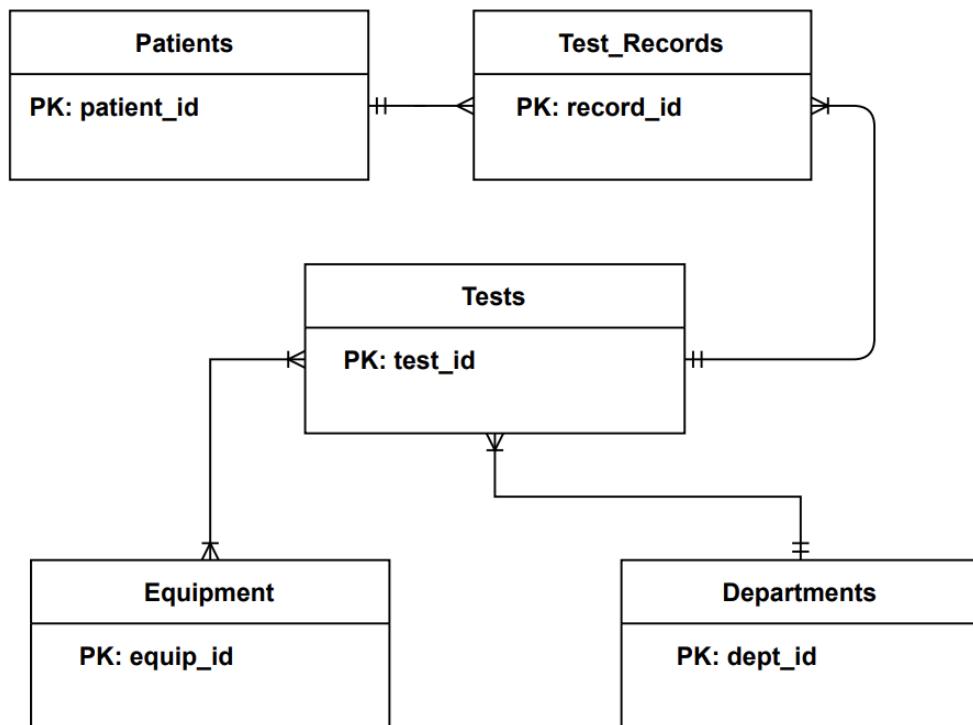
- equip_id: INT, unique, auto_increment, not NULL, PK
- equip_name: VARCHAR(50), not NULL

- availability: BOOLEAN (TINYINT), not NULL
- calibration_date: DATE
- next_maintenance: DATE
- Relationships
 - N:M Tests: each equipment can be used in multiple tests

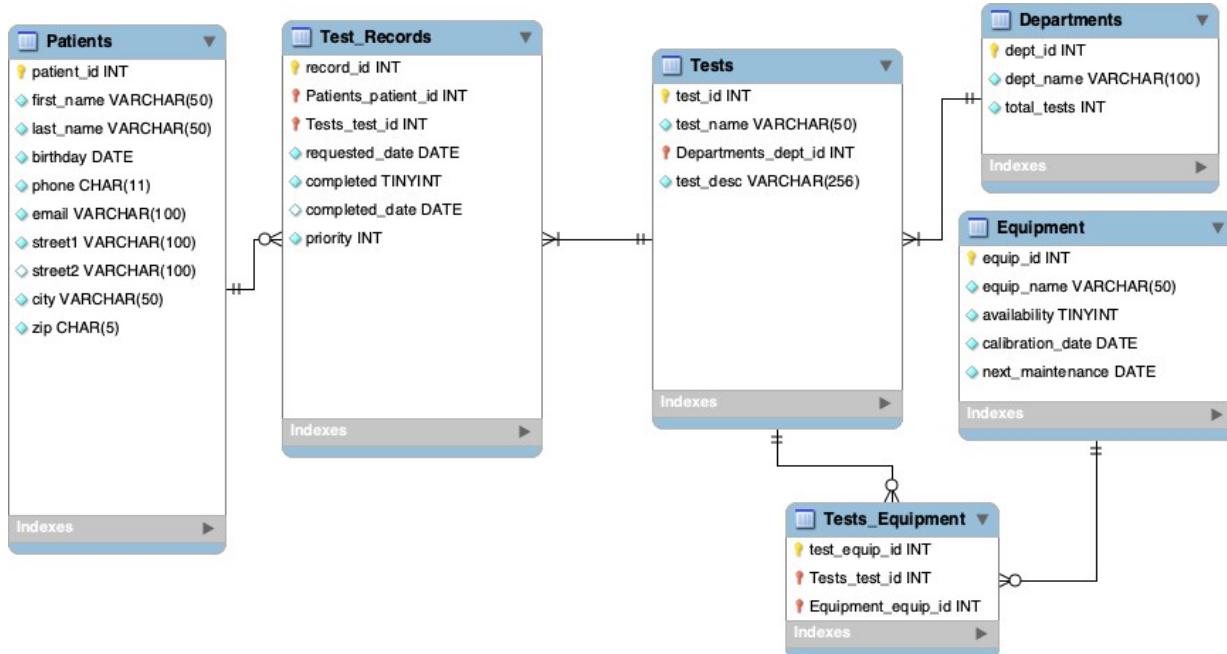
Tests_Equipment - intersection table for tables *Tests* and *Equipment*

- Attributes
 - test_equip_id: INT, UNIQUE, PK,
 - Composite key of foreign keys
 - Tests_test_id: INT, FK
 - Equipment_equip_id: INT, FK

Entity-Relationship Diagram



Schema



Sample Data

Patients

patient_id	first_name	last_name	birthday	phone	email	street1	street2	city	zip
1	Elon	Musk	6/28/1971	415-222-9670	E.Musk@twitter.com	Market Square, 1355 Market St	Suite 900	San Francisco	94103
2	Jeff	Bezos	1/12/1964	206-266-1000	J.Bezos@Amazon.com	440 Terry Ave N		Seattle	98109
3	Mark	Zuckerberg	5/14/1984	650-853-1300	M.Zuckerberg@Meta.com	1 Hacker Way		Palo Alto	94025
4	Susan	Wojcicki	7/5/1968	650-253-0000	S.Wojcicki@YouTube.com	901 Cherry Ave		San Bruno	94066
5	Safra	Catz	12/1/1961	800-392-2999	S.Catz@Oracle.com	2300 Oracle Wy		Austin	78741

Test_Records

record_id	Patients_patient_id	Tests_test_id	requested_date	completed	completed_date	priority
001	003	004	1/30/2023	1	1/31/2023	1
002	001	005	1/30/2023	1	2/1/2023	2
003	002	001	2/1/2023	1	2/3/2023	3
005	005	003	2/5/2023	1	2/7/2023	4
006	004	002	5/1/2023	0	NULL	1

Tests

test_id	Departments_dept_id	test_name	test_desc
001	001	X-Ray	x-ray image
002	001	MRI	mri image
003	001	Ultrasound	ultrasound image
004	002	Blood-Metabolic	metabolic panel
005	003	Urine	Dipstick, Microscopy
006	003	Culture	cell growth, counting

Departments

dept_id	dep_name	total_tests
001	Radiology	3
002	Immunology	3
003	Microbiology	2

Equipment

equip_id	equip_name	availability	calibration_date	next_maintenance
001	Philips all-in-1 imager	1	1/15/2024	5/3/2025
002	B/U analyzer	0	5/10/2023	3/17/2024
003	cell counter	0	7/27/2023	9/5/2023
004	GE wonder tester 5000	1	10/24/2023	12/21/2023

Tests_Equipment

test_id	equip_id
001	001
001	002
003	003
003	004
002	004

UI Screenshots

Patients Page

Patient management page. Allows users to browse, edit, and delete patient information, as well as add new patients.

BROWSE/DISPLAY

Displays all patient information. Links allow users to perform desired CRUD operations. The “Delete” link will delete the corresponding patient entry.

Patients										
patient_id	first_name	last_name	birthday	phone	email	street1	street2	city	zip	
1	Elon	Musk	1971-09-28	4152229670	E.Musk@twitter.com	1355 Market St	Suite 900	San Francisco	94103	Edit Delete
2	Jeff	Bezos	1964-01-12	2062661000	J.Bezos@amazon.com	440 Terry Ave N	None	Seattle	98109	Edit Delete
3	Mark	Zuckerberg	1984-05-14	6508531300	M.Zuckerberg@meta.com	1 Hacker Way	None	Palo Alto	94025	Edit Delete
4	Susan	Wojcicki	1968-07-15	6502530000	S.Wojcicki@youtube.com	901 Cherry Ave	None	San Bruno	94066	Edit Delete
5	Safra	Catz	1961-12-01	8003922999	S.Catz@oracle.com	2300 Oracle Wy	None	Austin	78741	Edit Delete

INSERT/ADD NEW

Upon clicking the “Add New” link, users are redirected to this page where they can input the information for a new patient they want to add.

Patients

[Patients | Test Records | Tests | Departments | Equipment | Tests | Equipment]

Add Patient

first name:	last name:	Birthday:	mm/dd/yyyy	Phone:	XXX-XXX-XXXX	Email:	Street1:	Street2:	City:	ZIP:
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Add Patient | Cancel



EDIT/UPDATE

Clicking the “Edit” link will redirect users to the following page. Input fields are pre-populated with current patient information, and users can edit/update any field to update the selected patient’s information.

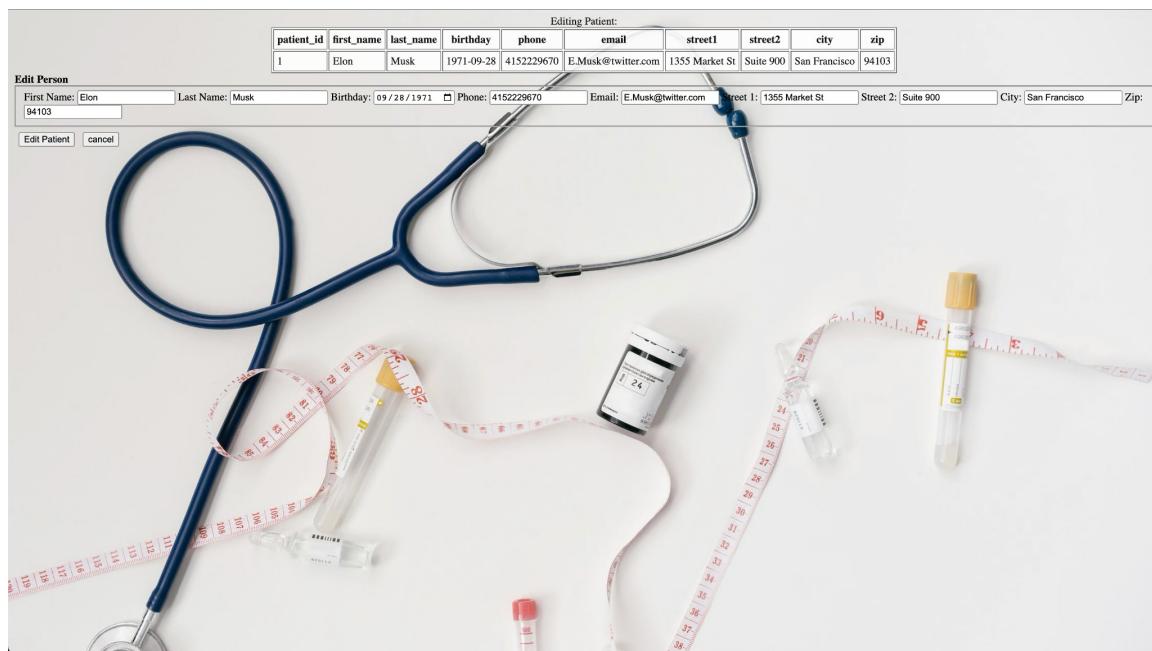
Editing Patient:

patient_id	first_name	last_name	birthday	phone	email	street1	street2	city	zip
1	Elon	Musk	1971-09-28	4152229670	E.Musk@twitter.com	1355 Market St	Suite 900	San Francisco	94103

Edit Person

First Name: Elon	Last Name: Musk	Birthday: 09/28/1971	Phone: 4152229670	Email: E.Musk@twitter.com	Street 1: 1355 Market St	Street 2: Suite 900	City: San Francisco	Zip: 94103
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Edit Patient | cancel



Test Records Page

The Test Records page is where users can browse and manage records of tests that have been ordered for patients.

BROWSE/DISPLAY

Displays all current test records, including what tests were assigned and for which patient.

record_id	patient_id	patient_name	test_id	test_name	requested_date	completed	completed_date	priority
5	4	Susan Wojcicki	2	MRI	2023-05-01	NO		1
1	3	Mark Zuckerberg	4	Blood-Metabolic	2023-01-30	YES	2023-01-31	1
2	1	Elon Musk	5	Urine	2023-01-30	YES	2023-02-01	2
3	2	Jeff Bezos	1	X-Ray	2023-02-01	YES	2023-02-03	3
4	5	Safra Catz	3	Ultrasound	2023-02-05	YES	2023-02-07	4

DYNAMIC SEARCH

The search field at the top allows users to search for specific test records by a patient's name.

Search Test Record by Patient

First Name: Elon Last Name: Musk

Search Test Record

Test Records for Elon Musk

record_id	patient_name	patient_id	test_name	requested_date	completed	completed_date	priority
2	Elon Musk	1	Urine	2023-01-30	YES	2023-02-01	2

INSERT/ADD NEW

Clicking the “Add New Test Record” will redirect users to the following page, which allows for them to add a new test record. Fields include dynamic dropdown menus for which Patient and which Test, as well as the requested date and priority level.



The image shows a stack of brown medical files or records held in a light blue folder holder with two metal clips. The files are stacked vertically, showing their edges and some internal papers. This visual metaphor represents the system's capability to handle and manage large volumes of patient data.

Test Records

Add Test Record

Patient Name: Test Name: Requested Date: Priority:

Add Test Record Cancel

Add Test Record

Patient Name: Test Name: Requested Date: Priority:

Add Test Record Cancel

Musk, Elon
Bezos, Jeff
Zuckerberg, Mark
Wojcicki, Susan
Catz, Safra

Add Test Record

Patient Name: Test Name: Requested Date: Priority:

Add Test Record Cancel

X-Ray
MRI
Ultrasound
Blood-Metabolic
Urine

NULLABLE RELATIONSHIPS

The Test Records entity is an M:1 relationship with the Patients entity, as well as the Tests entity.

The following screenshots demonstrate the nullable behavior in Test Records when a patient is removed from the Patients entity and a test is removed from the Tests entity.

No deletes

The screenshot shows a web-based application titled "Test Records". At the top, there is a navigation bar with links: [Patients | Test Records | Tests | Departments | Equipment | Tests_Equipment]. Below the navigation is a search bar labeled "Search Test Record by Patient" with fields for "First Name" and "Last Name", and a "Search Test Record" button. Underneath the search bar is a link "Add New Test Record". The main content area displays a table of test records:

record_id	patient_id	patient_name	test_id	test_name	requested_date	completed	completed_date	priority
5	4	Susan Wojcicki	2	MRI	2023-05-01	NO		1
1	3	Mark Zuckerberg	4	Blood-Metabolic	2023-01-30	YES	2023-01-31	1
2	1	Elon Musk	5	Urine	2023-01-30	YES	2023-02-01	2
3	2	Jeff Bezos	1	X-Ray	2023-02-01	YES	2023-02-03	3
4	5	Safra Catz	3	Ultrasound	2023-02-05	YES	2023-02-07	4

Deletion of patient Safra Catz - patient information for record ID = 4 is NULL

The screenshot shows the same "Test Records" application interface. The search bar and "Add New Test Record" link are present. The table of test records now includes a row where the patient information is null:

record_id	patient_id	patient_name	test_id	test_name	requested_date	completed	completed_date	priority
5	4	Susan Wojcicki	2	MRI	2023-05-01	NO		1
1	3	Mark Zuckerberg	4	Blood-Metabolic	2023-01-30	YES	2023-01-31	1
2	1	Elon Musk	5	Urine	2023-01-30	YES	2023-02-01	2
3	2	Jeff Bezos	1	X-Ray	2023-02-01	YES	2023-02-03	3
4	None	None	3	Ultrasound	2023-02-05	YES	2023-02-07	4

Deletion of test Ultrasound - test information for record ID = 4 is NULL

The screenshot shows a web application interface for managing test records. At the top, there is a navigation bar with links to Patients, Test Records, Tests, Departments, Equipment, and Tests_Equipment. Below the navigation is a section titled "Search Test Record by Patient" with fields for First Name and Last Name, and a "Search Test Record" button. A link "Add New Test Record" is also present. The main content area displays a table of test records:

record_id	patient_id	patient_name	test_id	test_name	requested_date	completed	completed_date	priority
5	4	Susan Wojcicki	2	MRI	2023-05-01	NO		1
1	3	Mark Zuckerberg	4	Blood-Metabolic	2023-01-30	YES	2023-01-31	1
2	1	Elon Musk	5	Urine	2023-01-30	YES	2023-02-01	2
3	2	Jeff Bezos	1	X-Ray	2023-02-01	YES	2023-02-03	3
4	None	None	None	None	2023-02-05	YES	2023-02-07	4

Tests Page

The Tests page allows users to browse and manage the tests available by the hospital. Fields include the name of the test, a description of the test, and which department is responsible for the test.

BROWSE/DISPLAY

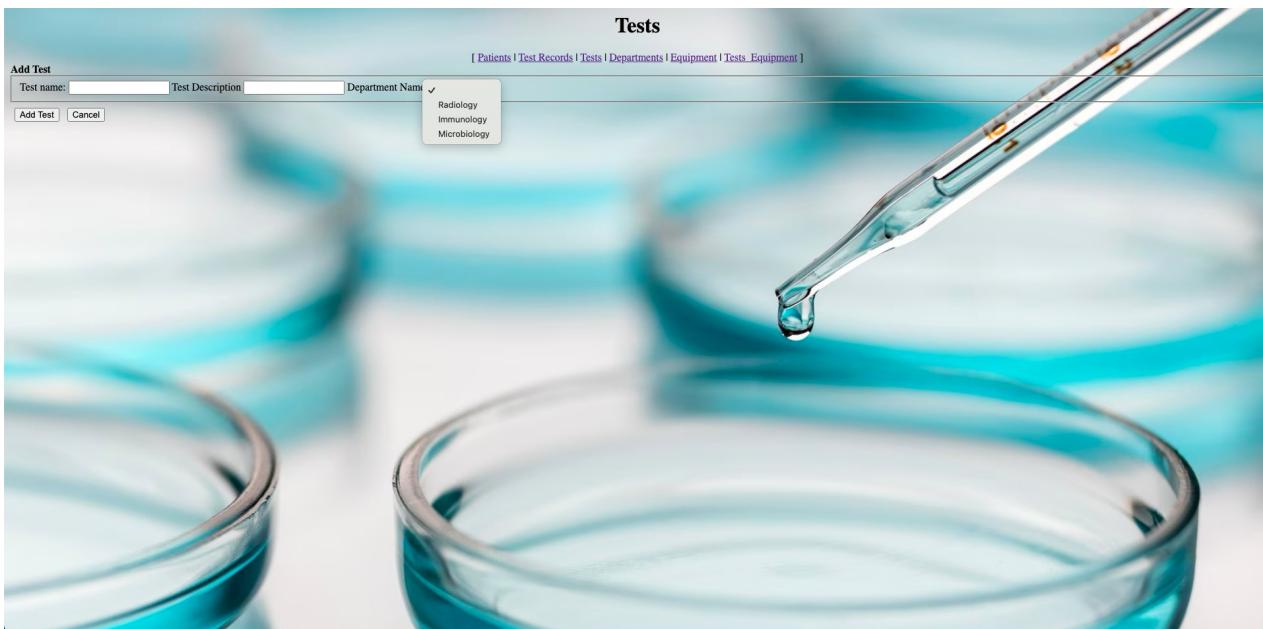
Displays all tests currently run by the hospital. Links allow users to navigate to intended CRUD operations. The “Delete” links will delete the corresponding entry.

The screenshot shows a web application interface for managing tests. At the top, there is a navigation bar with links to Patients, Test Records, Tests, Departments, Equipment, and Tests_Equipment. Below the navigation is a section titled "Tests" with a "Add New Test" link. The main content area displays a table of test details:

test_id	test_name	test_desc	dept_name	Edit	Delete
1	X-Ray	x-ray image	Radiotherapy	Edit	Delete
2	MRI	mri image	Radiotherapy	Edit	Delete
3	Ultrasound	ultrasound image	Radiotherapy	Edit	Delete
4	Blood-Metabolic	Metabolic panel	Immunology	Edit	Delete
5	Urine	Dipstick, microscopy	Microbiology	Edit	Delete
6	Culture	cell growth, counting	Microbiology	Edit	Delete

INSERT/ADD NEW

The “Add New Test” link will redirect users to a page where they can add a new test. Fields included are “Test Name”, “Test Description”, and a dynamic dropdown for “Department Name.”



Tests

[Patients | Test Records | Tests | Departments | Equipment | Tests_Equipment]

Add Test

Test name:	Test Description:	Department Name:
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Add Test | Cancel

Radiology
Immunology
Microbiology

EDIT/UPDATE

Clicking the “Edit” link will redirect users to the following page. Input fields are pre-populated with current test information, and users can edit/update any field to update the selected test’s information.



Editing Test:

test_id	test_name	test_desc	dept_name
1	X-Ray	x-ray image	Radiology

Edit Test

Test Name: X-Ray Test Desc: x-ray image Department Name: Radiology

✓ Radiology
Immunology
Microbiology

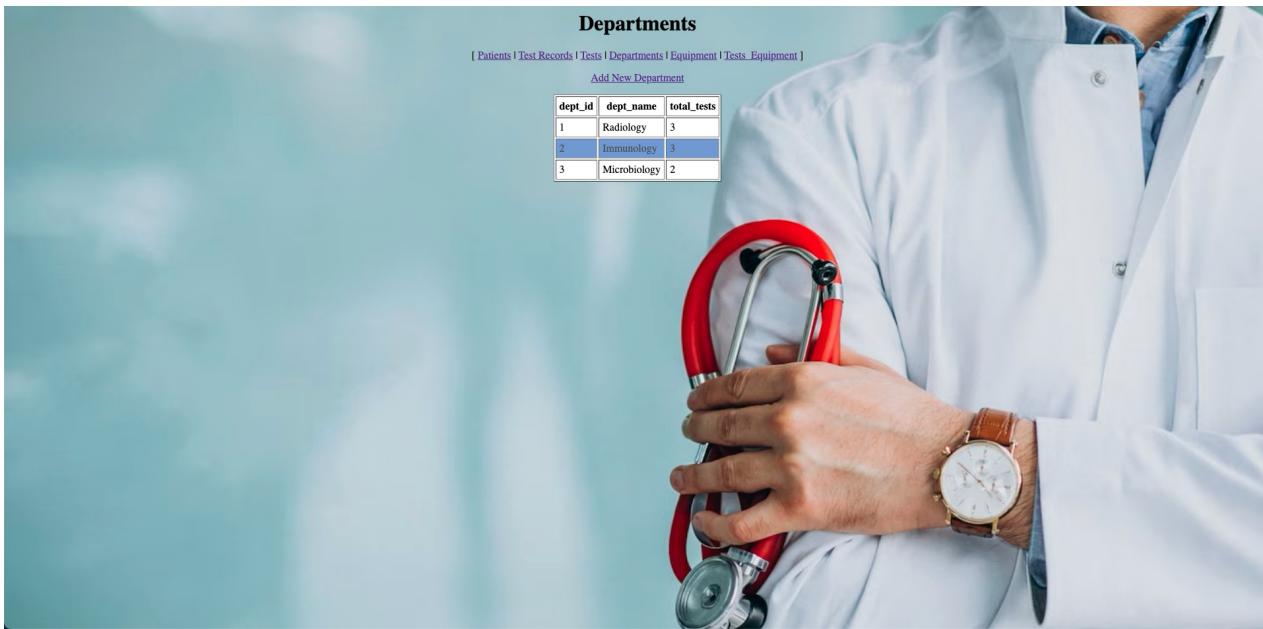
Edit Test | cancel

Departments Page

The Departments page is where users can browse and manage the different testing departments within the hospital.

BROWSE/DISPLAY

Displays all departments and the number of tests they are currently performing.

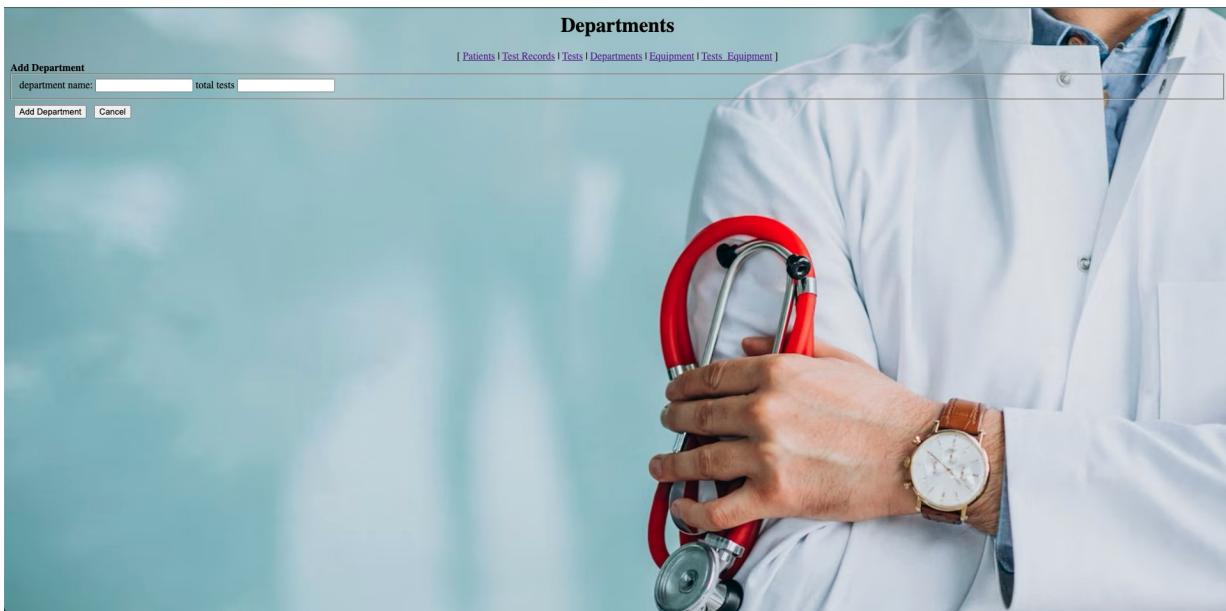


A screenshot of a web application titled "Departments". The page shows a table with three rows of data:

dept_id	dept_name	total_tests
1	Radiology	3
2	Immunology	3
3	Microbiology	2

INSERT/ADD NEW

The "Add New" link will redirect users to the following page, where they can add a new department in the hospital.



A screenshot of a web application titled "Departments". The page has a form for adding a new department:

Add Department

department name: total tests:

Equipments Page

The Equipments page is where users can browse the equipment used by the hospital for running tests, as well as add new equipment or edit/delete current entries. The “Delete” link will delete the corresponding equipment entry.

equip_id	equip_name	availability	calibration_date	next_maintenance	Edit	Delete
1	Philips all-in-1 imager	Yes	2024-01-15	2025-05-03	Edit	Delete
2	B/U analyzer	No	2023-05-10	2024-03-17	Edit	Delete
3	cell counter	No	2023-07-27	2023-09-05	Edit	Delete
4	GE wonder tester 3000	Yes	2023-10-24	2023-12-21	Edit	Delete

INSERT/ADD NEW

Allows users to add new equipment.

Add Equipment

Equipment Name: Availability: YES NO

Calibration Date: mm/dd/yyyy Next Maintenance: mm/dd/yyyy

[Add Equipment](#) [Cancel](#)

EDIT/UPDATE

The “Edit” link will redirect users to the following page. Fields are pre-populated with the equipment’s current information, and users can edit the appropriate fields with new information.



A photograph of a scientist in a white lab coat looking through the eyepiece of a Philips all-in-1 imager microscope. The microscope is a light blue color with several lenses and a stage. The scientist's hands are visible, one holding the eyepiece and the other adjusting a knob on the side. The background is dark, suggesting a laboratory environment.

Equipment Management

Edit Equipment

equip_id	equip_name	availability	calibration_date	next_maintenance
1	Philips all-in-1 imager	Yes	2024-01-15	2025-05-03

Equipment Name: Philips all-in-1 imager Availability: Yes Calibration Date: 01/15/2024 Next Maintenance: 05/03/2025

[Edit Equipment](#) [Cancel](#)

Tests_Equipment Page

The Tests_Equipment page displays the M:M relationship between the Tests and Equipment entities. Qualitatively, this page is used to track which equipment is used for which tests.

BROWSE/DISPLAY

All Tests-Equipment relationships are displayed on the following page. Links provide users to navigate to the proper CRUD operation. The “Delete” link will delete the corresponding entry.

The image is a composite of two photographs. On the right, there is a large, white, cylindrical MRI machine with a control console and a small screen. On the left, there is a screenshot of a web-based application titled "Tests_Equipment". The application has a header with links to "Patients", "Test Records", "Tests", "Departments", "Equipment", and "Tests_Equipment". Below the header is a button labeled "Add Tests_Equipment". The main content is a table with the following data:

test_equip_id	test_name	equip_name	Edit	Delete
1	X-Ray	Philips all-in-1 imager	Edit	Delete
2	X-Ray	BiU analyzer	Edit	Delete
5	MRI	GE wonder tester 5000	Edit	Delete
3	Ultrasound	cell counter	Edit	Delete
4	Ultrasound	GE wonder tester 5000	Edit	Delete

DELETE

Deleting an entry does not cause an anomaly in the Tests and Equipment entities. For example, deleting entry test_equip_id = 1 from the table does not affect the “X-Ray” test or the “Philips all-in 1 imager” equipment.

test_equip_id	test_name	equip_name	
1	X-Ray	Philips all-in-1 imager	Delete
2	X-Ray	B/U analyzer	Delete
5	MRI	GE wonder tester 5000	Delete
3	Ultrasound	cell counter	Delete
4	Ultrasound	GE wonder tester 5000	Delete

test_equip_id	test_name	equip_name	
2	X-Ray	B/U analyzer	Delete
5	MRI	GE wonder tester 5000	Delete
3	Ultrasound	cell counter	Delete
4	Ultrasound	GE wonder tester 5000	Delete

Tests

[[Patients](#) | [Test Records](#). | [Tests](#) | [Departments](#) | [Equipment](#) | [Tests Equipment](#)]

[Add](#) [New](#) [J:cost](#)

test_id	test_name	test_desc	dept_name		
1	X-Ray	x-ray image	Radiology	Edit	Delete
2	MRI	mri image	Radiology	Edit	Delete
3	Ultrasound	ultrasound image	Radiology	Edit	Delete
4	Blood-Metabolic	Metabolic panel	Immunology	Edit	Delete
5	Urine	Dipstick, microscopy	Microbiology	Edit	Delete
6	Culture	cell growth, counting	Microbiology	Edit	Delete

Equipment

[[Patients](#) | [Test Records](#) | [Tests](#) | [Departments](#) | [Equipment](#) | [Tests Equipment](#)]

[Add New Equipment](#)

equip_id	equip_name	availability	calibration_date	next_maintenance	
1	Philips all-in-1 imager	Yes	2024-01-15	2025-05-03	
2	B/U analyzer	No	2023-05-10	2024-03-17	
3	cell counter	No	2023-07-27	2023-09-05	
4	GE wonder tester 5000	Yes	2023-10-24	2023-12-21	

INSERT/ADD NEW

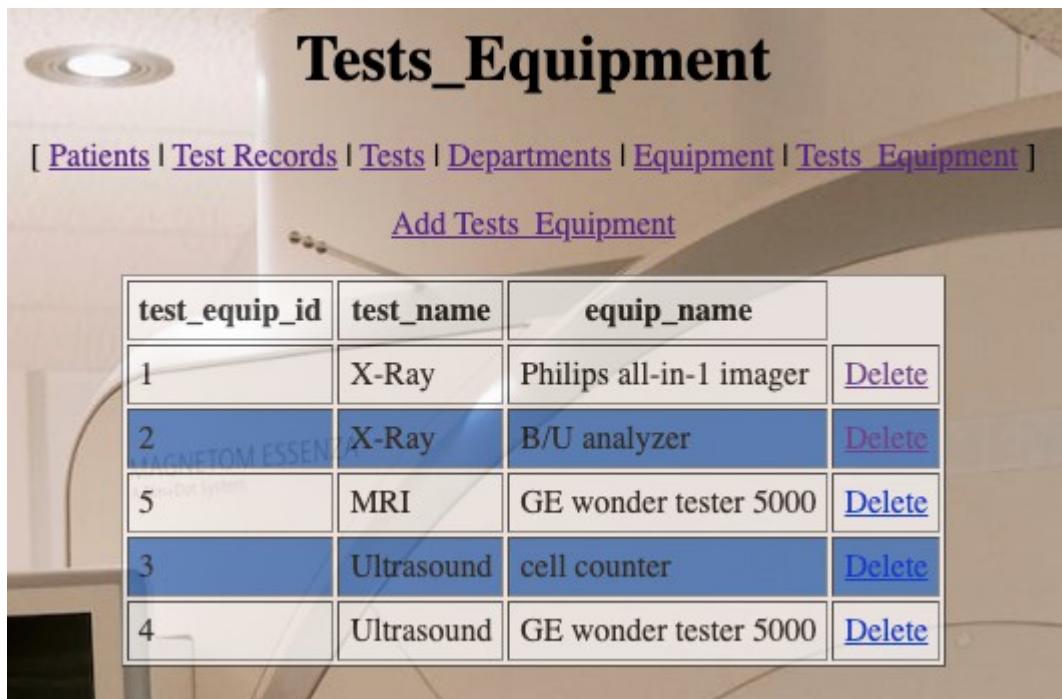
Allows users to add a new Tests_Equipment entry. Dynamic dropdowns for Test Names and Equipment Names allow users to select from available Tests and Equipment



M:M Update

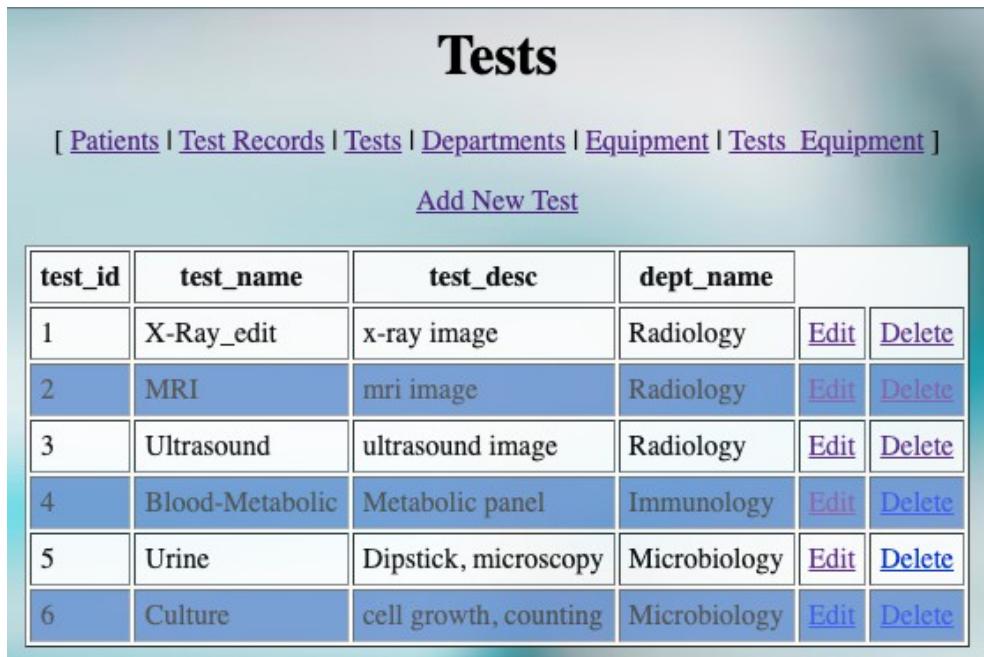
Editing information on the Tests and Equipment entities will be correctly reflected in the Tests_Equipment entity.

No edits



Tests_Equipment			
[Patients Test Records Tests Departments Equipment Tests_Equipment]			
Add Tests_Equipment			
test_equip_id	test_name	equip_name	
1	X-Ray	Philips all-in-1 imager	Delete
2	X-Ray	B/U analyzer	Delete
5	MRI	GE wonder tester 5000	Delete
3	Ultrasound	cell counter	Delete
4	Ultrasound	GE wonder tester 5000	Delete

Editing Test - name changed from “X-Ray” to “X-Ray_edit” on Tests page. The name change is reflected on the Tests_Equipment page.



Tests					
[Patients Test Records Tests Departments Equipment Tests_Equipment]					
Add New Test					
test_id	test_name	test_desc	dept_name		
1	X-Ray_edit	x-ray image	Radiology	Edit	Delete
2	MRI	mri image	Radiology	Edit	Delete
3	Ultrasound	ultrasound image	Radiology	Edit	Delete
4	Blood-Metabolic	Metabolic panel	Immunology	Edit	Delete
5	Urine	Dipstick, microscopy	Microbiology	Edit	Delete
6	Culture	cell growth, counting	Microbiology	Edit	Delete

Tests_Equipment

[[Patients](#) | [Test Records](#) | [Tes.ts](#) | [DcP-artments](#) | [uiP-ment](#) | [Tests_Equipment](#)]

[Add Tests Equipment](#)

test_eqmp_id	test_name	equip_name	
•	X-Ray_J dit	Philips all-in-I imager	Delete
2	X-Ray_edit	B/U analyzer	Delete
5	MRI	GE wonder tester 5000	Delete
3	Ultrasound	cell counter	Delete
4	Ultrasm.md	GE wonder tester 5000	Delete

Editing Equipment - equipment “GE wonder tester 5000” was changed to “GE wonder tester 5000_edit”. The name change is reflected on the Tests_Equipment page.

Equipment						
[Patients] [Test Records] [Tests] [Departments] [Equipment] [Tests_Equipment]						
Add New Equipment						
equip_id	equip_name	availability	calibration_date	next_maintenance		
1	Philips all-in-1 imager	Yes	2024-01-15	2025-05-03	Edit	Delete
2	B/U analyzer	No	2023-05-10	2024-03-17	Edit	Delete
3	cell counter	No	2023-07-27	2023-09-05	Edit	Delete
4	GE wonder tester 5000_edit	Yes	2023-10-24	2023-12-21	Edit	Delete

Tests_Equipment			
[Patients] [Test Records] [Tests] [Departments] [Equipment] [Tests_Equipment]			
Add Tests_Equipment			
test_equip_id	test_name	equip_name	
1	X-Ray_edit	Philips all-in-1 imager	Delete
2	X-Ray_edit	B/U analyzer	Delete
5	MRI	GE wonder tester 5000_edit	Delete
4	Ultrasound	GE wonder tester 5000_edit	Delete
3	Ultrasound	cell counter	Delete