

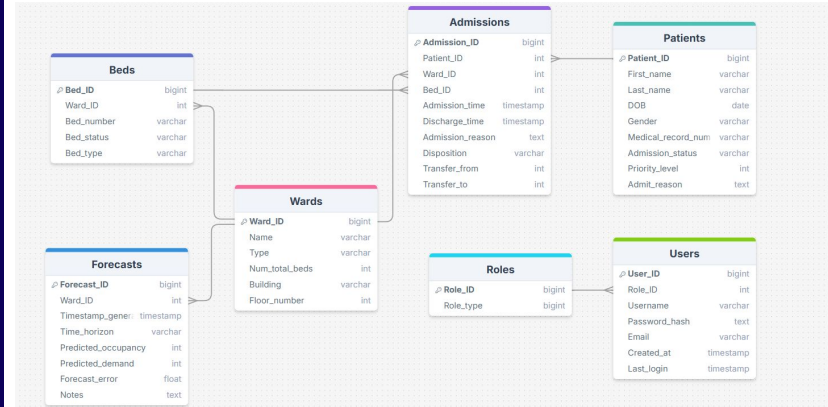


Hospital Bed Management System

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Mock Data / Schema / Hosting

- Created mock data for showcasing site in csv files
- Used GCP buckets and database
- Github pages hosting



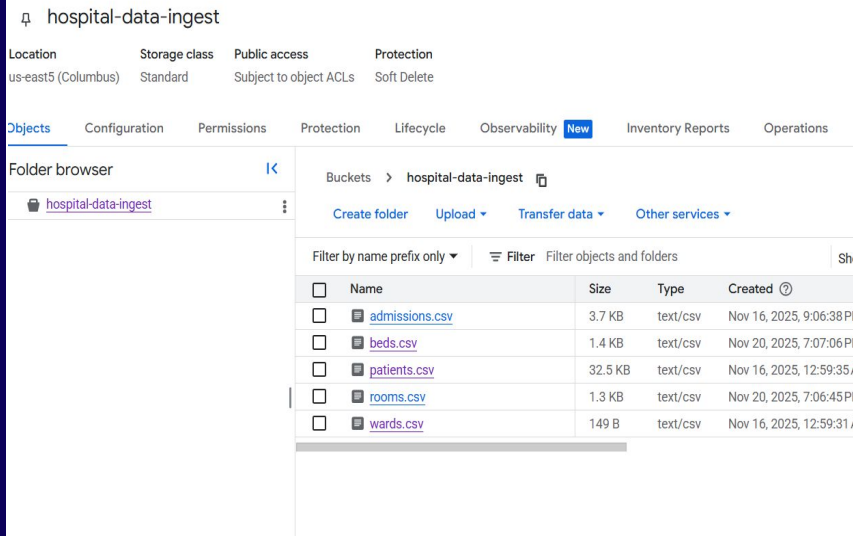
```
mysql> USE BedTest;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> SHOW TABLES;
+-----+
| Tables_in_BedTest |
+-----+
| admissions |
| beds |
| forecasts |
| patients |
| roles |
| users |
| wards |
+-----+
7 rows in set (0.02 sec)

mysql> DESC beds;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| bed_id | bigint unsigned | NO | PRI | NULL | auto_increment |
| ward_id | int | YES | | NULL | |
| bed_number | varchar(20) | YES | | NULL | |
| bed_status | varchar(50) | YES | | NULL | |
| patient_id | int | YES | | NULL | |
| bed_type | varchar(50) | YES | | NULL | |
+-----+
6 rows in set (0.02 sec)
```

GCP / Backend

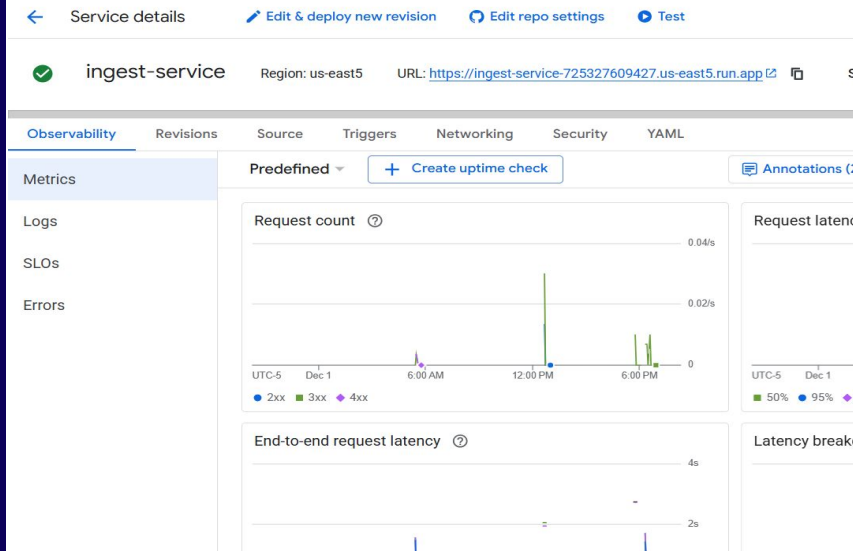
- When a CSV file (beds, patients, wards, admissions, etc.) is uploaded to your bucket, Eventarc automatically triggers your Cloud Run backend.
- The backend reads the CSV, parses each row, and inserts or updates records in MySQL (using ON DUPLICATE KEY UPDATE).
- All live hospital data (beds, wards, patients, admissions) is stored in Cloud SQL MySQL. Every dashboard view pulls real-time data directly from MySQL through REST API calls.



GCP / Backend

- Cloud Run Backend REST API The server (index.js) exposes multiple endpoints:
 - GET /beds → returns every bed
 - GET /beds/:bedNumber → bed + patient details
 - POST /beds/assign → updates bed status and creates/discharges admissions
 - GET /wards → ward statistics
 - GET /patients → all patient profiles

Any CSV upload → Eventarc → backend → SQL update Dashboard auto-refreshes data on page load and after updates This gives the hospital a real-time bed management system without manual syncing.




Login Page

- Firebase Authenticator
- Users added/controlled by third party (us)
- Collections created

Future:

- Add role based permissions for different types of users (Doctors, Nurses, Admin, etc.)

Search by email address, phone number, or user UID					Add user		
Identifier	Providers	Created ↓	Signed In	User UID			
sorio@gmail.com	✉	Nov 21, 2025		D7oA9L5vutYcxuRwa6ZlaUfC...			
jasmine@gmail.com	✉	Nov 12, 2025	Nov 22, 2025	3s3RTM71ovU9JmuMZwne5W...			
jacob@gmail.com	✉	Nov 12, 2025	Nov 23, 2025	7iH2Bg3lxzShEJBqOQ2SxJO...			
stella@gmail.com	✉	Nov 12, 2025	Nov 24, 2025	fo72XQiHumTkIgetNLu3iwHl9...			
marywilson@hospital.o...	✉	Nov 12, 2025		j3w6xyeDoSyEmRNHIEZ7X5e...			



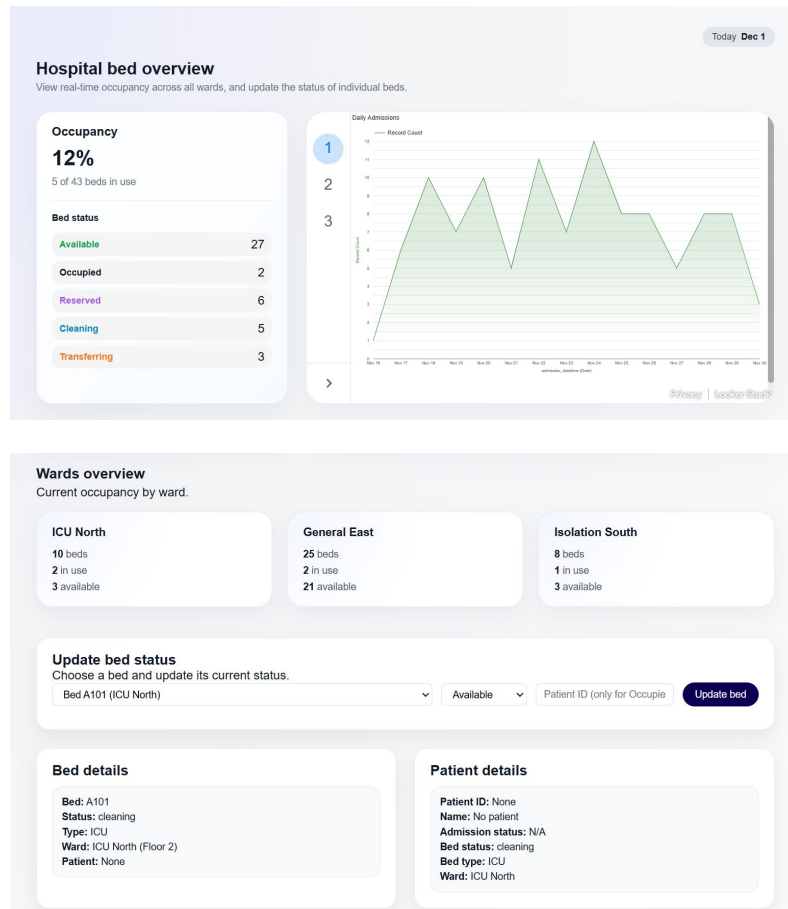
Please use your credentials to log in

Login

🏠 > users > fo72XQiHumTkI...		
(default)	users	fo72XQiHumTkIgetNLu3iwHl9gp1
+ Start collection	+ Add document	+ Start collection
users >	3s3RTM71ovU9JmuMZwne5W7oQNF1 7iH2Bg3lxzShEJBqOQ2SxJONLij1 D7oA9L5vutYcxuRwa6ZlaUfCXdu2 fo72XQiHumTkIgetNLu3iwHl9gp1 >	+ Add field email: "stella@gmail.com" fullName: "Stella G" role: "Nurse"

Dashboard Page

- Occupancy Summary – beds in use, statuses
- Daily Admissions Chart – Looker Studio line chart showing 2-week trends
- Wards Overview – occupancy by ward
- Bed Management – update bed status, view bed details
- Patient Details – quick access to assigned patient information



Insights Page

- Current Occupancy & Busiest Ward – real-time usage highlights
- COVID-19 Case Share – proportion of admissions related to COVID-19
- Admissions by Medical Condition – category breakdown of patient reasons
- Trendline Forecast – Looker Studio forecast showing admission patterns

Insights

Predictive-style analytics for occupancy and patient trends using the current hospital data.

Current occupancy

37%

16 of 43 beds currently in use.

Busiest ward right now

ICU North

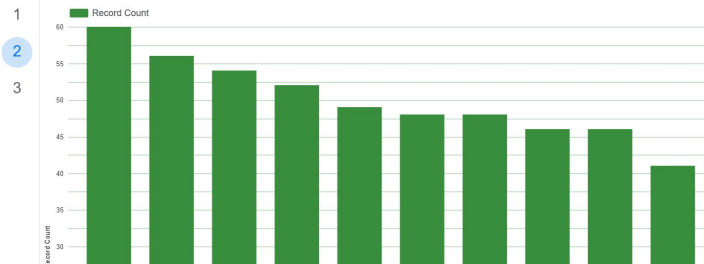
7 beds in use in this ward.

COVID-19 case share

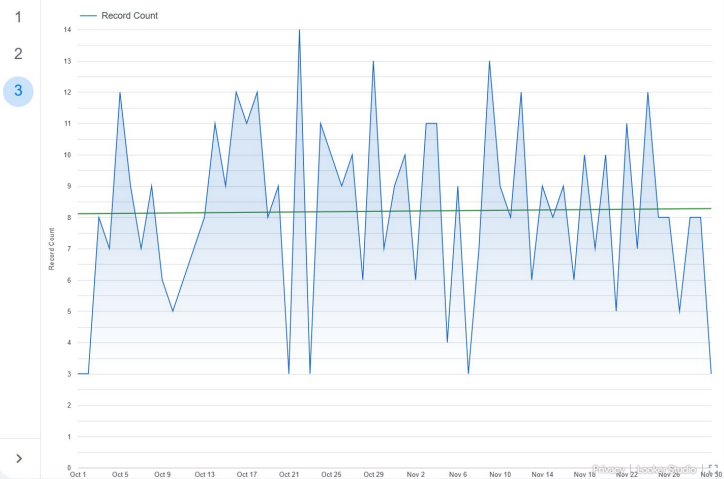
8%

2 of the last 25 admissions were due to COVID-19. Based on the most recent admissions feed.

Admissions by Medical Condition



Trendline Forecast Chart



Patients Page

- Search & Filter – find patients by name, MRN, status, or reason
- Patient Table – view MRN, status, priority level, and admission reason
- Interactive Rows – click a patient to view details or manage their admission
- Admission Management – admit to a bed or discharge from current bed

Patients
Search, filter, and manage patient admissions across the hospital.

Search by name or MRN All statuses All reasons Filter

Tip: Click a patient row to view details, admit them to a bed, or discharge them from their current bed.

Patient	MRN	Status	Priority	Reason
Olivia Wilson	MRN1000	Admitted	1	COVID-19
Ava Smith	MRN1001	Discharged	5	Flu
Ava Garcia	MRN1002	Discharged	2	COVID-19
John Garcia	MRN1003	Discharged	1	COVID-19
Liam Johnson	MRN1004	Admitted	5	Flu
Emma Martinez	MRN1005	Admitted	4	Injury
Alice Johnson	MRN1006	Discharged	2	COVID-19
Sofia Miller	MRN1007	Discharged	4	Injury
Mark Brown	MRN1008	Admitted	1	COVID-19

Manage Beds Page

- Bed Directory – view every bed with its ward and room
- Status Overview – see real-time statuses (available, reserved, cleaning, transferring)
- Filtering – filter beds by ward or status
- Bed Management – select a bed to update its status or view details

Manage beds
View all beds, see which ward and room they belong to, and filter by status.

All wards ▾ All statuses ▾ [Apply filters](#)

Bed	Ward	Room	Status
Bed A101	Ward 1	Room 101	Cleaning
Bed A102	Ward 1	Room 102	Reserved
Bed A103	Ward 1	Room 103	Reserved
Bed A104	Ward 1	Room 104	Cleaning
Bed A105	Ward 1	Room 105	Transferring
Bed A106	Ward 1	Room 106	Available
Bed A107	Ward 1	Room 107	Reserved
Bed A108	Ward 1	Room 108	Available
Bed A109	Ward 1	Room 109	Transferring

Manage Rooms Page

- Room Directory – view all rooms with ward, building, floor, and bed count
- Filtering Options – filter rooms by ward, building, or floor
- Room Details – see bed availability and room assignments
- Navigation – quick access to specific wards or buildings

Manage rooms
Browse all rooms by ward, building, and floor.

All wards ▾ All buildings ▾ All floors ▾ [Apply filters](#)

Room	Ward	Building	Floor	Beds
Room 101	ICU North	A	2	1
Room 102	ICU North	A	2	1
Room 103	ICU North	A	2	1
Room 104	ICU North	A	2	1
Room 105	ICU North	A	2	1
Room 106	ICU North	A	2	1
Room 107	ICU North	A	2	1
Room 108	ICU North	A	2	1
Room 109	ICU North	A	2	1
Room 110	ICU North	A	2	1
Room 201	General East	B	1	1

Live Demo Link