

D.1. THE DATABASE

Queries:

```
CREATE DATABASE Cinema21;
```

```
CREATE TABLE `users` (  
  `users_id` int(11) NOT NULL AUTO_INCREMENT,  
  `username` varchar(50) NOT NULL,  
  `email` varchar(100) NOT NULL,  
  `password` varchar(255) NOT NULL,  
  `firstname` varchar(50) NOT NULL,  
  `lastname` varchar(50) NOT NULL,  
  `birthdate` date DEFAULT NULL,  
  `gender` enum('Male','Female','Other') DEFAULT NULL,  
  `phone_number` varchar(20) DEFAULT NULL,  
  `address` text DEFAULT NULL,  
  `role` enum('admin','customer') NOT NULL DEFAULT 'customer',  
  `loyalty_points` int(11) NOT NULL DEFAULT 0,  
  `created_at` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP,  
  `updated_at` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP ON UPDATE  
  CURRENT_TIMESTAMP,  
  PRIMARY KEY (`users_id`),  
  UNIQUE KEY `username` (`username`),  
  UNIQUE KEY `email` (`email`)  
);
```

```
CREATE TABLE `movies` (  
  `movie_id` int(11) NOT NULL AUTO_INCREMENT,  
  `title` varchar(255) NOT NULL,  
  `release_date` date NOT NULL,  
  `description` text NOT NULL,  
  `poster_path` varchar(255) DEFAULT NULL,  
  `genre` varchar(100) DEFAULT NULL,  
  `duration` int(11) DEFAULT NULL COMMENT 'in minutes',  
  `rating` varchar(100) DEFAULT NULL,  
  `status` enum('coming_soon','now_showing','ended') NOT NULL,  
  `created_at` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP,  
  PRIMARY KEY (`movie_id`)  
);
```

```
CREATE TABLE `theaters` (  
  `theater_id` int(11) NOT NULL AUTO_INCREMENT,
```

```

`theater_id` int(11) NOT NULL AUTO_INCREMENT,
`name` varchar(100) NOT NULL,
`city` varchar(100) NOT NULL,
`address` text NOT NULL,
`phone` varchar(20) DEFAULT NULL,
`special_tag` varchar(50) DEFAULT NULL,
`facilities` text DEFAULT NULL,
`total_seats` int(11) NOT NULL,
`status` enum('active','inactive','under_maintenance') NOT NULL DEFAULT 'active',
`created_at` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP,
`updated_at` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP ON UPDATE
CURRENT_TIMESTAMP,
PRIMARY KEY (`theater_id`)
);

```

```

CREATE TABLE `showtimes` (
`showtime_id` int(11) NOT NULL AUTO_INCREMENT,
`movie_id` int(11) NOT NULL,
`theater_id` int(11) NOT NULL,
`showtime` datetime NOT NULL,
`available_seats` int(11) NOT NULL,
`price` decimal(10,2) NOT NULL,
`status` enum('open','full','cancelled') NOT NULL DEFAULT 'open',
`created_at` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP,
PRIMARY KEY (`showtime_id`),
KEY `movie_id` (`movie_id`),
KEY `theater_id` (`theater_id`),
CONSTRAINT `showtimes_ibfk_1` FOREIGN KEY (`movie_id`) REFERENCES
`movies` (`movie_id`) ON DELETE CASCADE,
CONSTRAINT `showtimes_ibfk_2` FOREIGN KEY (`theater_id`) REFERENCES
`theaters` (`theater_id`) ON DELETE CASCADE
);

```

```

CREATE TABLE `bookings` (
`booking_id` int(11) NOT NULL AUTO_INCREMENT,
`user_id` int(11) NOT NULL,
`showtime_id` int(11) NOT NULL,
`booking_date` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP,
`total_amount` decimal(10,2) NOT NULL,
`status` enum('pending','confirmed','cancelled','completed') NOT NULL DEFAULT
'pending',
PRIMARY KEY (`booking_id`),
KEY `user_id` (`user_id`),
KEY `showtime_id` (`showtime_id`),

```

```
CONSTRAINT `bookings_ibfk_1` FOREIGN KEY (`user_id`) REFERENCES `users`  
(`users_id`) ON DELETE CASCADE,  
CONSTRAINT `bookings_ibfk_2` FOREIGN KEY (`showtime_id`) REFERENCES  
`showtimes` (`showtime_id`) ON DELETE CASCADE  
);
```

```
CREATE TABLE `tickets` (  
  `ticket_id` int(11) NOT NULL AUTO_INCREMENT,  
  `booking_id` int(11) NOT NULL,  
  `user_id` int(11) NOT NULL,  
  `movie_id` int(11) NOT NULL,  
  `showtime_id` int(11) NOT NULL,  
  `seat_numbers` varchar(255) NOT NULL,  
  `quantity` int(11) NOT NULL,  
  `booking_code` varchar(20) NOT NULL,  
  `status` enum('active','used','expired','cancelled') NOT NULL DEFAULT 'active',  
  `created_at` datetime NOT NULL DEFAULT CURRENT_TIMESTAMP,  
  PRIMARY KEY (`ticket_id`),  
  KEY `booking_id` (`booking_id`),  
  KEY `user_id` (`user_id`),  
  KEY `movie_id` (`movie_id`),  
  KEY `showtime_id` (`showtime_id`),  
  CONSTRAINT `tickets_ibfk_1` FOREIGN KEY (`booking_id`) REFERENCES  
`bookings` (`booking_id`) ON DELETE CASCADE,  
  CONSTRAINT `tickets_ibfk_2` FOREIGN KEY (`user_id`) REFERENCES `users`  
(`users_id`) ON DELETE CASCADE,  
  CONSTRAINT `tickets_ibfk_3` FOREIGN KEY (`movie_id`) REFERENCES `movies`  
(`movie_id`) ON DELETE CASCADE,  
  CONSTRAINT `tickets_ibfk_4` FOREIGN KEY (`showtime_id`) REFERENCES  
`showtimes` (`showtime_id`) ON DELETE CASCADE  
);
```

```
CREATE TABLE `booking_seats` (  
  `booking_seats_id` int(11) NOT NULL AUTO_INCREMENT,  
  `booking_id` int(11) NOT NULL,  
  `seat_number` varchar(10) NOT NULL,  
  PRIMARY KEY (`booking_seats_id`),  
  UNIQUE KEY `booking_id_seat_number` (`booking_id`,`seat_number`),  
  CONSTRAINT `booking_seats_ibfk_1` FOREIGN KEY (`booking_id`) REFERENCES  
`bookings` (`booking_id`) ON DELETE CASCADE  
);
```

D.2 THE DATA

Website Inspiration URL (Cinema XXI): <https://www.cinema21.co.id/>

```
INSERT INTO `users` (`users_id`, `username`, `email`, `password`, `firstname`, `lastname`,  
`birthdate`, `gender`, `phone_number`, `address`, `role`, `loyalty_points`) VALUES  
(1, 'admin', 'admin@movieticket.com', '25d55ad283aa400af464c76d713c07ad', 'Admin',  
'User', '1990-01-01', 'Male', '123456789', 'Admin Office, Jakarta', 'admin', 0),  
(2, 'Niet', 'niet@gmail.com', '25d55ad283aa400af464c76d713c07ad', 'Niet', 'Jagok',  
'2005-05-15', 'Male', '08123456789', 'Jl. Merdeka No. 10, Jakarta', 'customer', 0),  
(3, 'Denia', 'denia@gmail.com', '25d55ad283aa400af464c76d713c07ad', 'Denia', 'Denden',  
'2006-10-14', 'Female', '08234567890', 'Jl. Sudirman No. 45, Jakarta', 'customer', 0),  
(4, 'Arkan', 'arkan@example.com', '25d55ad283aa400af464c76d713c07ad', 'Haikal', 'Arkan',  
'2007-11-05', 'Male', '08345678901', 'Jl. Gatot Subroto No. 22, Jakarta', 'customer', 0),  
(5, 'Fau', 'fauzi@example.com', '25d55ad283aa400af464c76d713c07ad', 'Fauzi', 'Ler',  
'2005-03-12', 'Male', '08456789012', 'Jl. Asia Afrika No. 8, Bandung', 'customer', 0),  
(6, 'Aman', 'rachman@example.com', '25d55ad283aa400af464c76d713c07ad', 'Nazhori',  
'Khillany', '2005-07-30', 'Male', '08567890123', 'Jl. Diponegoro No. 15, Surabaya',  
'customer', 0);
```

```
INSERT INTO `movies` (`movie_id`, `title`, `release_date`, `description`, `poster_path`,  
`genre`, `duration`, `rating`, `status`) VALUES  
(41, 'Inside Out 2', '2025-05-04', 'Riley navigates teenage life with new emotions, including  
Anxiety', 'movie_681721de4402c.jpg', 'Animation', 100, 'PG', 'now-showing'),  
(42, 'Deadpool & Wolverine', '2025-05-04', 'Deadpool and Wolverine team up for a chaotic,  
action-packed adventure', 'movie_6817222898531.jpg', 'Action', 127, 'R', 'now-showing'),  
(43, 'Moana 2', '2025-05-04', 'Moana sets sail once again for a magical new journey',  
'movie_68172df3b4c6.jpg', 'Animation, Adventure', 105, 'PG', 'now-showing'),  
(44, 'Despicable me 4', '2025-05-04', 'Gru and the Minions face a new enemy in another  
hilarious adventure', 'movie_6817259d9acf9.jpg', 'Animation, Comedy', 95, 'PG',  
'now-showing'),  
(45, 'Wicked', '2025-05-04', 'A musical prequel that tells the untold story of the witches of  
Oz', 'movie_6817251f1f2cf.jpg', 'Musical, Fantasy', 145, 'PG-13', 'now-showing'),  
(46, 'Mufasa: The Lion King', '2025-05-04', 'A prequel exploring the origins of Mufasa',  
'movie_681726f5b1904.jpg', 'Animation, Drama', 118, 'PG', 'now-showing'),  
(47, 'Dune: Part Two', '2025-05-04', 'Paul Atreides continues his rise among the Fremen',  
'movie_68172735bc8dd.jpg', 'Sci-Fi, Action', 166, 'PG-13', 'now-showing'),  
(48, 'Kung Fu Panda 4', '2025-05-04', 'Po returns to train a new warrior and protect his  
legacy', 'movie_6817278240b03.jpg', 'Animation, Action', 94, 'PG', 'now-showing');
```

```

INSERT INTO `theaters` (`theater_id`, `name`, `city`, `address`, `phone`, `special_tag`,
`facilities`, `total_seats`, `status`) VALUES
(1, 'Cinema XXI Grand Indonesia', 'Jakarta', 'Grand Indonesia Mall Lt. 8', '02123456789',
'IMAX', 'Premium seats, Dolby Atmos, 4K Projection, Food court', 200, 'active'),
(2, 'CGV Plaza Senayan', 'Jakarta', 'Plaza Senayan Lt. 5', '02123456788', 'Regular', 'Standard
seats, Dolby Digital, Food stand', 150, 'active'),
(3, 'Cinepolis Kota Kasablanka', 'Jakarta', 'Kota Kasablanka Lt. 3', '02123456787', '4DX',
'Motion seats, Environmental effects, Dolby Atmos', 120, 'active'),
(4, 'Cinema XXI Pondok Indah', 'Jakarta', 'Pondok Indah Mall Lt. 2', '02123456786',
'Regular', 'Standard seats, Snack bar, Digital projection', 180, 'active'),
(5, 'CGV Central Park', 'Jakarta', 'Central Park Mall Lt. 3', '02123456785', 'SCREENX',
'270-degree screen, Recliner seats, Premium sound', 160, 'active'),
(6, 'Cinema XXI Paris Van Java', 'Bandung', 'Paris Van Java Mall Lt. 2', '02223456784',
'Regular', 'Standard seats, Concession stand', 140, 'active'),
(7, 'CGV Cihampelas Walk', 'Bandung', 'Cihampelas Walk Lt. 3', '02223456783', 'DOLBY',
'Dolby Atmos, Recliner seats, Premium concessions', 130, 'active'),
(8, 'Cinema XXI Trans Studio Mall', 'Bandung', 'Trans Studio Mall Lt. 4', '02223456782',
'IMAX', 'IMAX projection, Premium sound, Deluxe seats', 200, 'active'),
(9, 'Cinepolis BEC Mall', 'Bandung', 'Bandung Electronic Center Lt. 3A', '02223456781',
'Regular', 'Standard seats, Digital sound, Snack stand', 120, 'active'),
(10, 'CGV Festival Citylink', 'Bandung', 'Bandung', '02223456780', 'Premium', 'Recliner seats,
Dolby sound, Premium food', 100, 'active'),
(11, 'Cinema XXI Tunjungan Plaza', 'Surabaya', 'Tunjungan Plaza Lt. 5', '03123456789',
'IMAX', 'IMAX screen, Premium sound, Luxury seating', 180, 'active'),
(12, 'CGV Grand City', 'Surabaya', 'Grand City Mall Lt. 3', '03123456788', 'Gold Class',
'Recliner seats, Waiter service, Premium experience', 100, 'active'),
(13, 'Cinema XXI Pakuwon Mall', 'Surabaya', 'Pakuwon Mall Lt. 3', '03123456787', 'Regular',
'Standard seats, Digital projection, Concession stand', 150, 'active'),
(14, 'Cinepolis Royal Plaza', 'Surabaya', 'Royal Plaza Lt. 4', '03123456786', '4DX', 'Motion
seats, Environmental effects, Premium experience', 120, 'active'),
(15, 'CGV Marvel City', 'Surabaya', 'Marvel City Mall Lt. 2', '03123456785', 'Regular',
'Standard seats, Digital sound, Snack bar', 140, 'active'),
(16, 'Cinema XXI Beachwalk', 'Bali', 'Beachwalk Shopping Center Lt. 3', '03613456789',
'Regular', 'Standard seats, Digital projection, Concession stand', 130, 'active'),
(17, 'Cinepolis Bali Galeria', 'Bali', 'Bali Galeria Mall Lt. 4', '03613456788', 'IMAX', 'IMAX
screen, Premium sound, Luxury seating', 180, 'active'),
(18, 'CGV Level 21', 'Bali', 'Level 21 Mall Lt. 5', '03613456787', 'Regular', 'Standard seats,
Digital sound, Snack bar', 140, 'active'),
(19, 'Cinema XXI Park23', 'Bali', 'Park23 Entertainment Center Lt. 2', '03613456786',
'DOLBY', 'Dolby Atmos, Premium seats, Enhanced concessions', 150, 'active'),
(20, 'CGV Lippo Mall Kuta', 'Bali', 'Lippo Mall Kuta Lt. 3', '03613456785', 'Gold Class',
'Luxury recliners, Waiter service, Premium experience', 100, 'active');

```

```

INSERT INTO `showtimes` (`showtime_id`, `movie_id`, `theater_id`, `showtime`,
`available_seats`, `price`, `status`) VALUES
INSERT INTO showtimes ( showtime_id , movie_id , theater_id , showdate , showtime ,
price , available_seats , status , created_at ) VALUES
(80, 41, 1, '2025-05-05', '10:00:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(81, 41, 1, '2025-05-05', '13:30:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(82, 41, 1, '2025-05-05', '17:00:00', 55000.00, 96, 'active', '2025-05-04 22:55:40'),
(83, 41, 1, '2025-05-05', '20:30:00', 55000.00, 96, 'active', '2025-05-04 22:55:40'),
(84, 41, 2, '2025-05-05', '11:15:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(85, 41, 2, '2025-05-05', '14:45:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(86, 41, 2, '2025-05-05', '18:15:00', 55000.00, 96, 'active', '2025-05-04 22:55:40'),
(87, 41, 3, '2025-05-05', '12:30:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(88, 41, 3, '2025-05-05', '16:00:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(89, 41, 3, '2025-05-05', '19:30:00', 55000.00, 96, 'active', '2025-05-04 22:55:40'),
(90, 41, 4, '2025-05-05', '11:00:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(91, 41, 4, '2025-05-05', '14:30:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(92, 41, 5, '2025-05-05', '13:00:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(93, 41, 5, '2025-05-05', '17:30:00', 55000.00, 96, 'active', '2025-05-04 22:55:40'),
(94, 42, 6, '2025-05-05', '10:30:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(95, 42, 6, '2025-05-05', '14:00:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(96, 42, 6, '2025-05-05', '17:30:00', 55000.00, 96, 'active', '2025-05-04 22:55:40'),
(97, 42, 7, '2025-05-05', '11:45:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(98, 42, 7, '2025-05-05', '15:15:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(99, 42, 7, '2025-05-05', '18:45:00', 55000.00, 96, 'active', '2025-05-04 22:55:40'),
(100, 42, 8, '2025-05-05', '12:00:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(101, 42, 8, '2025-05-05', '16:30:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(102, 42, 8, '2025-05-05', '20:00:00', 55000.00, 96, 'active', '2025-05-04 22:55:40'),
(103, 42, 9, '2025-05-05', '11:30:00', 50000.00, 96, 'active', '2025-05-04 22:55:40'),
(104, 42, 9, '2025-05-05', '16:00:00', 50000.00, 96, 'active', '2025-05-04 22:55:40');

```

```

INSERT INTO `bookings` (`booking_id`, `user_id`, `showtime_id`, `booking_date`,
`total_amount`, `status`) VALUES
(1, 2, 1, '2023-05-18 09:30:00', 100000.00, 'confirmed'),
(2, 3, 5, '2023-05-18 10:15:00', 90000.00, 'confirmed'),
(3, 4, 9, '2023-05-18 11:45:00', 200000.00, 'confirmed'),
(4, 5, 2, '2023-05-19 08:20:00', 150000.00, 'confirmed'),
(5, 6, 7, '2023-05-19 14:10:00', 195000.00, 'confirmed'),
(6, 2, 11, '2023-05-19 16:30:00', 250000.00, 'pending');

```

```

INSERT INTO `tickets` (`ticket_id`, `booking_id`, `user_id`, `movie_id`, `showtime_id`,
`seat_numbers`, `quantity`, `booking_code`, `status`) VALUES
(1, 1, 2, 1, 1, 'A1,A2', 2, 'BOOK23051800001', 'active'),
(2, 2, 3, 2, 5, 'C5,C6', 2, 'BOOK23051800002', 'active'),
(3, 3, 4, 3, 9, 'B3,B4', 2, 'BOOK23051800003', 'active'),
(4, 4, 5, 1, 2, 'D7,D8,D9', 3, 'BOOK23051900001', 'active'),
(5, 5, 6, 2, 7, 'E4,E5,E6', 3, 'BOOK23051900002', 'active'),
(6, 6, 2, 3, 11, 'A10,A11', 2, 'BOOK23051900003', 'active');

```

```

INSERT INTO `booking_seats` (`booking_seats_id`, `booking_id`, `seat_number`) VALUES
(1, 1, 'A1'),
(2, 1, 'A2'),
(3, 2, 'C5'),
(4, 2, 'C6'),
(5, 3, 'B3'),
(6, 3, 'B4'),
(7, 4, 'D7'),
(8, 4, 'D8'),
(9, 4, 'D9'),
(10, 5, 'E4'),
(11, 5, 'E5'),
(12, 5, 'E6'),
(13, 6, 'A10'),
(14, 6, 'A11');

```

D.3. QUERIES

```
SELECT * FROM `users`;
```

This query will select all attributes of users entity that exist in the users entity. The attributes include a hashed password, personal information, and role information. This query is essential for user management and authentication purposes.

```

SELECT m.title, m.genre, m.duration, m.rating, COUNT(s.showtime_id) AS
showtime_count
FROM movies m
LEFT JOIN showtimes s ON m.movie_id = s.movie_id
WHERE m.status = 'now_showing'
GROUP BY m.movie_id

```

```
ORDER BY showtime_count DESC;
```

This query retrieves all currently showing movies along with their genre, duration, rating, and the number of showtimes available for each movie. The results are ordered by the number of showtimes in descending order, which helps identify the most frequently screened movies.

```
SELECT t.name, t.city, t.special_tag, COUNT(s.showtime_id) AS total_showtimes,  
       COUNT(DISTINCT s.movie_id) AS unique_movies  
FROM theaters t  
LEFT JOIN showtimes s ON t.theater_id = s.theater_id  
WHERE t.status = 'active'  
GROUP BY t.theater_id  
ORDER BY total_showtimes DESC;
```

This query shows active theaters along with their location, special tags, total number of showtimes, and the count of unique movies being shown. This information is valuable for analyzing theater utilization and diversity of movie offerings.

```
SELECT u.username, u.firstname, u.lastname, COUNT(b.booking_id) AS total_bookings,  
       SUM(b.total_amount) AS total_spent, u.loyalty_points  
FROM users u  
LEFT JOIN bookings b ON u.users_id = b.user_id  
WHERE u.role = 'user'  
GROUP BY u.users_id  
ORDER BY total_spent DESC  
LIMIT 10;
```

This query identifies the top 10 users based on their total spending on bookings. It displays their username, name, total number of bookings made, total amount spent, and accumulated loyalty points. This information is useful for customer relationship management and loyalty program analysis.

```
SELECT s.showtime_id, m.title, t.name AS theater, s.showtime,  
       s.available_seats, t.total_seats,  
       (t.total_seats - s.available_seats) AS booked_seats,  
       ROUND(((t.total_seats - s.available_seats) / t.total_seats) * 100, 2) AS  
occupancy_percentage  
FROM showtimes s  
JOIN movies m ON s.movie_id = m.movie_id  
JOIN theaters t ON s.theater_id = t.theater_id  
WHERE s.showtime BETWEEN NOW() AND DATE_ADD(NOW(), INTERVAL 7 DAY)  
ORDER BY s.showtime, occupancy_percentage DESC;
```


This query analyzes showtime occupancy for the next 7 days. It calculates the number of booked seats and occupancy percentage for each showtime, providing insights into which movie showtimes are most popular and helping optimize scheduling decisions.