

Pontificia Universidad Católica Madre y Maestra
Campus Santo Tomás de Aquino
Facultad de Ciencias de la Ingeniería



Departamento de ISC

Programa:
Base de datos I

Profesor:
Alicia Santos

Proyecto Final

Grupo:
SD-ISC-347-T-001

Integrantes:
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2016-5468 - Manuel Molina
2016-5265 - Javier Falcon

Tabla original ONF

Theater

<u>id_theatre</u>	theater_name	theater_location	screen_quantity	<u>id_movie</u>	movie_name	movie_duration	movie_type	movie_genre	movie_clasification	movie_copies	time_movie
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continuación...

<u>id_screen</u>	seats_no	screen_category	screen_no	screen_inauguration_date	<u>id_slot</u>	time_slot	attendance	price_charged	<u>id_schedule</u>	schedule
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continuación...

week_day	<u>id_seat</u>	seat_pos	seat_type	<u>id_ticket</u>	movie_date	purchase_date	<u>id_employee</u>	emp_name	emp_address	<u>id_emp_position</u>	emp_position
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continuación...

emp_phone	birth_date	mail	emp_wage	<u>id_log</u>	log_description	log_time	log_date	price
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Fin

Dependencias funcionales **ONF**:

Id_theatre, id_screen → { screen_inauguration_date }

Id_slot, id_movie → { time_movie(start, end) }

Id_schedule → { schedule (start, end) }

Id_schedule, id_slot, id_screen → { week_day }

Id_seat → { seat_pos, seat_type, id_screen → { seats_no, screen_category, screen_no} }

Id_ticket → { movie_date, purchase_date, Id_slot → { time_slot(start, end), attendance, price_charged } }

Id_employee → {emp_name(first_name, last_name), emp_address(zip, building, street), id_emp_position → { emp_position }, emp_phone, birth_date, mail, Id_theatre → { theater_name, theater_location (zip, building, street), screen_quantity } }

Id_employee, id_emp_position → { emp_wage }

Id_log → log_description, Id_movie → { movie_name, movie_duratio, movie_type, movie_genre, movie_clasification, movie_copies } }

Id_employee, id_log, id_screen → { log_time, log_date }

Id_ticket, id_seat → { price }

Normalización en 1NF

<u>id_theatre</u>	theater_name	theater_street	address_zip	building_no	screen_quantity	<u>id_movie</u>	movie_name	movie_duration	movie_type	movie_genre	movie_clasification	movie_copies
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Continuación...

<u>id_screen</u>	seats_no	screen_category	screen_no	screen_inauguration_date	<u>id_slot</u>	slot_start_time	slot_end_time	attendance	price_charged	movie_start_time	movie_end_time	<u>id_schedule</u>
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Continuación...

week_start	week_end	week_day	id_seat	seat_pos	seat_type	id_ticket	movie_date	purchase_date	id_employee	emp_Fname	emp_Lname	emp_street
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Continuación...

emp_zip	house_no	id_emp_position	emp_position	emp_phone	birth_date	mail	emp_wage	id_log	log_description	log_time	log_date	price
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Fin.

Dependencias funcionales 1NF:

Id_theatre, id_screen → { screen_inauguration_date }

Id_slot, id_movie → { movie_start_time, movie_end_time }

Id_schedule → { week_start, week_end }

Id_schedule, id_slot, id_screen → { week_day }

Id_seat → { seat_pos, seat_type, id_screen → { seats_no, screen_category, screen_no} }

Id_ticket → { movie_date, purchase_date, Id_slot → { slot_start_time, slot_end_time, attendance, price_charged }

Id_employee → {first_name, last_name, emp_zip, building_no, address_street, id_emp_position → { emp_position }, emp_phone, birth_date, mail, Id_theatre → { theater_name, address_zip, building_no, theater_street, screen_quantity } }

Id_employee, id_emp_position → { emp_wage }

Id_log → log_description, Id_movie → { movie_name, movie_duratio, movie_type, movie_genre, movie_clasification, movie_copies } }

Id_employee, id_log, id_screen → { log_time, log_date }

Id_ticket, id_seat → { price }

Normalización en 2NF

Theater_Screen

<u>id_theatre</u>	<u>id_screen</u>	screen_inauguration_date
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Slot_movie

<u>id_slot</u>	<u>id_movie</u>	movie_start_time	movie_end_time
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Schedule

<u>id_schedule</u>	week_start	week_end
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Schedule_slot_screen

<u>id_schedule</u>	<u>id_slot</u>	<u>id_screen</u>	week_day
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Seat

<u>id_seat</u>	seat_pos	seat_type	<u>id_screen</u>	seats_no	screen_category	screen_no
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Ticket

<u>id_ticket</u>	movie_date	purchase_date	<u>id_slot</u>	slot_start_time	slot_end_time	Attendance	price_charged
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Employee

<u>id_employee</u>	emp_Fname	emp_Lname	emp_street	emp_zip	house_no	<u>id_emp_position</u>	emp_position	emp_phone	birth_date	mail	<u>id_theatre</u>	theater_name	theater_location	screen_quantity
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Employee_Position

<u>id_employee</u>	<u>id_emp_position</u>	emp_wage
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Retrieving_log

<u>id_log</u>	log_description	<u>id_movie</u>	movie_name	movie_duration	movie_type	movie_genre	movie_clasification	movie_copies
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Employee_log_screen

<u>id_log</u>	<u>id_employee</u>	<u>id_screen</u>	log_time	log_date
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Ticket_price

<u>id_ticket</u>	<u>id_seat</u>	price
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Dependencias funcionales 2NF:

Id_theatre, id_screen → { screen_inauguration_date }

Id_slot, id_movie → { movie_start_time, movie_end_time }

Id_schedule → { week_start, week_end }

Id_schedule, id_slot, id_screen → { week_day }

Id_seat → { seat_pos, seat_type, id_screen → { seats_no, screen_category, screen_no } }

Id_ticket → { movie_date, purchase_date, Id_slot → { slot_start_time, slot_end_time, attendance, price_charged } }

Id_employee → { first_name, last_name, emp_zip, building_no, address_street, id_emp_position → { emp_position }, emp_phone, birth_date, mail, Id_theatre → { theater_name, address_zip, building_no, theater_street, screen_quantity } }

Id_employee, id_emp_position → { emp_wage }

Id_log → log_description, Id_movie → { movie_name, movie_duratio, movie_type, movie_genre, movie_clasification, movie_copies } }

Id_employee, id_log, id_screen → { log_time, log_date }

Id_ticket, id_seat → { price }

[Normalización en 3NF](#)

Theater

<u>id_theatre</u>	theater_name	theater_street	address_zip	building_no	screen_quantity
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Movie

<u>id_movie</u>	movie_name	movie_duration	movie_type	movie_genre	movie_clasification	movie_copies
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Screen

<u>id_screen</u>	seats_no	screen_category	screen_no
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Theater_Screen

<u>id_theatre</u>	<u>id_screen</u>	screen_inauguration_date
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Slot

<u>id_slot</u>	slot_start_time	slot_end_time	attendance	price_charged
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Slot_movie

<u>id_slot</u>	<u>id_movie</u>	movie_start_time	movie_end_time
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Schedule

<u>id_schedule</u>	week_start	week_end
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Schedule_slot_screen

<u>id_schedule</u>	<u>id_slot</u>	<u>id_screen</u>	week_day
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Seat

<u>id_seat</u>	seat_pos	seat_type	<u>id_screen</u>
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Ticket

<u>id_ticket</u>	movie_date	purchase_date	<u>id_slot</u>
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Employee

<u>id_employee</u>	emp_Fname	emp_Lname	emp_street	emp_zip	house_no	<u>id_emp_position</u>	emp_phone	birth_date	mail	<u>id_theatre</u>
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Employee_position

<u>id_emp_position</u>	emp_position
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Employee_Position

<u>id_employee</u>	<u>id_emp_position</u>	emp_wage
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Retrieving_log

<u>id_log</u>	log_description	<u>id_movie</u>
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Employee_log_screen

<u>id_log</u>	<u>id_employee</u>	<u>id_screen</u>	log_time	log_date
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Ticket_price

<u>id_ticket</u>	<u>id_seat</u>	price
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Dependencias funcionales 3NF:

Id_theatre → { theater_name, address_zip, building_no, theater_street, screen_quantity }

Id_movie → { movie_name, movie_duratio, movie_type, movie_genre, movie_clasification, movie_copies }

Id_screen → { seats_no, screen_category, screen_no }

Id_theatre, id_screen → { screen_inauguration_date }

Id_slot → { slot_start_time, slot_end_time, attendance, price_charged }

Id_slot, id_movie → { movie_start_time, movie_end_time }

Id_schedule → { week_start, week_end }

Id_schedule, id_slot, id_screen → { week_day }

Id_seat → { seat_pos, seat_type, id_screen }

Id_ticket → { movie_date, purchase_date, Id_slot }

Id_employee → { first_name, last_name, emp_zip, building_no, address_street, id_emp_position, emp_phone, birth_date, mail, Id_theatre }

Id_employee, id_emp_position → { emp_wage }

Id_emp_position → { emp_position }

Id_log → { log_description, Id_movie }

Id_employee, id_log, id_screen → { log_time, log_date }

Id_ticket, id_seat → { price }

Asunciones:

- La entidad weekly_schedule se antojó necesaria para poder otorgar una programación semanal a cada pantalla. Según nuestra investigación, los cines actualizan su cartelera disponible de manera semanal y, adicionalmente, se pide un rastreo de las películas que se proyectan en una sala para un día específico.
- La información de los seats se decidió agregar debido a que encontramos que pueden haber distintos tipos de asientos en una sala y de esta manera es más fácil identificar los asientos escogidos en los tickets.
- Se decidió agregar la entidad ticket con el objetivo de tener un mecanismo de control de asistencia y de precio acumulado. Aprendimos que el precio del ticket estará relacionado al tipo de asiento que se compre.
- Género y clasificación de películas, comerciales y tráilers: campos agregados a la entidad movie los cuales también son registrados en la vida real. En nuestra investigación observamos que los tráilers y los comerciales también contienen género y clasificación.
- En la entidad screen fue añadido el atributo screen_category ya que observamos que existen varios tipos o categorías de salas en un cine/teatro de la vida real, debido a la llegada de tecnologías 3D y 4D.
- La entidad de retrieving_log fue concebida luego de verse necesario tener un registro de cuál empleado retira la película del inventario para poder rastrearla. En caso de una pérdida, se puede ver quién fue el último que retiró la película.
- La entidad de employee fue necesaria para guardar los datos de los empleados que manipulan las proyecciones de las salas.