Parcialito 1 - Iñaki Llorens

1. PASAJE DE MODELOS

Relación	Clave Primaria	Claves Candidatas	Claves Foráneas
A(A1,A2)	{ A1 }	{{ A1 }}	-
B(A1,B1,B2)	{ A1 }	{{ A1 }}	A1 ref A
C(A1,C1)	{ A1 }	{{ A1 }}	A1 ref A
D(E1,A1,F1,F2)	{ E1,A1 }	{ {E1,A1}, {E1,F1,F2} }	{ E1 ref E, A1 ref A, {F1,F2} ref F }
E(E1,E2)	{ E1 }	{{ E1 }}	-
F(F1,F2)	{ F1,F2 }	{{ F1,F2 }}	-
G(F1,F2,F1',F2'G1)	{ F1,F2 }	{ { F1,F2 }, { F1',F2'} }	{ F1,F2,F1',F2' } ref F
H	-	-	-
I(E1,I1,I2,A1,J1)	{ E1,I1 }	{{ E1,I1 }}	{ E1 ref E, A1 ref A }
J	-	-	-

Aclaración

En clase vimos dos alternativas para manejar las relaciones de jerarquía total y disjunta. Cuando se tiene una relación del tipo A,B,C donde A define el atributo clave, y B y C son los posibles "tipos" o "subclases" de A, las alternativas vistas para manejarlas son creando relaciones para A,B y C o creando relaciones para B y C. Elegí usar la primera alternativa vista. Vale la pena justificar mi elección ya que el modelo elegido tiene dos desventajas:

a. Si sumo una fila en A, y no actualizo en B o C se rompe la **totalidad**.
b. Si agrego en B y C a la vez se rompe la propiedad de **disjunta**.

Igualmente, me quedo con este modelo ya que me permite usar la jerarquía A en la relación ternaria más fácilmente.

2. Álgebra Relacional

a) Encuentre la película más vieja de Hitchcock.

pelisHich = π movies.name,movies.year (((σ last_name='Hitchcock' directors) ⋈directors.id=movies_directors.director_id movies_directors) ⋈ movies_directors.movie_id=movies.id movies)
K1 = ρ m1(pelisHich)
K2 = ρ m2(pelisHich)

K1 - π m1.name,m1.year (σ m1.year > m2.year (K1 × K2))

m1.name m1.year
'Notorious '1946

b) Muestre las películas en donde los directores que han actuado como actores

pelisDirectoresActores = σdirectors.first_name = actors.first_name ∧ directors.last_name = actors.last_name (π movies.name,directors.first_name,directors.last_name,actors.first_name,actors.last_name ((directors ⋈directors.id=movies_directors.director_id movies_directors) ⋈ movies_directors.movie_id=movies.id (movies ⋈movies.id=roles.movie_id (roles ⋈roles.actor_id=actors.id actors))))
pelisDirectoresActores

el resultado en csv:

"movies.name","directors.first_name","directors.last_name","actors.first_name","actors.last_name"
"North by Northwest","Alfred (I)","Hitchcock","Alfred (I)","Hitchcock"
"Notorious","Alfred (I)","Hitchcock","Alfred (I)","Hitchcock"
"Psycho","Alfred (I)","Hitchcock","Alfred (I)","Hitchcock"
"Rear Window","Alfred (I)","Hitchcock","Alfred (I)","Hitchcock"
"Strangers on a Train","Alfred (I)","Hitchcock","Alfred (I)","Hitchcock"
"Vertigo","Alfred (I)","Hitchcock","Alfred (I)","Hitchcock"
"Finding Nemo","Andrew","Stanton","Andrew","Stanton"
"City Lights","Charles","Chaplin","Charles","Chaplin"
"Modern Times","Charles","Chaplin","Charles","Chaplin"
"Unforgiven","Clint","Eastwood","Clint","Eastwood"
"Apocalypse Now","Francis Ford","Coppola","Francis Ford","Coppola"
"Singin in the Rain","Gene (I)","Kelly","Gene (I)","Kelly"

"Groundhog Day","Harold","Ramis","Harold","Ramis"
"Raging Bull","Martin","Scorsese","Martin","Scorsese"
"Taxi Driver","Martin","Scorsese","Martin","Scorsese"
"Braveheart","Mel (I)","Gibson","Mel (I)","Gibson"
"Citizen Kane","Orson","Welles","Orson","Welles"
"Pulp Fiction","Quentin","Tarantino","Quentin","Tarantino"
"Reservoir Dogs","Quentin","Tarantino","Quentin","Tarantino"
"Star Wars: Episode VI - Return of the
Jedi","Richard","Marquand","Richard","Marquand"
"Chinatown","Roman","Polanski","Roman","Polanski"
"Full Metal Jacket","Stanley","Kubrick","Stanley","Kubrick"
"Monty Python and the Holy Grail","Terry","Gilliam","Terry","Gilliam"
"Life of Brian","Terry (I)","Jones","Terry (I)","Jones"
"Monty Python and the Holy Grail","Terry (I)","Jones","Terry (I)","Jones"
"Annie Hall","Woody","Allen","Woody","Allen"
"Manhattan","Woody","Allen","Woody","Allen"