Universidad de San Carlos de Guatemala  
Facultad de Ingenieria  
Sistemas de Bases de Datos 1

DOCUMENTACIÓN

Juan Antonio Solares Samayoa   
Carnet: 201880496  
20 de septiembre de 2021

DOCUMENTACION

* Modelo relacional

Diagram

Description automatically generated

Diagram

Description automatically generated

1. **Listado de entidades**

* Actor
* Category
* City
* Classification
* Client
* Country
* Employee
* Language
* Movie
* Movie\_Actor
* Movie\_Category
* Movie\_Classification
* Movie\_Inventory
* Movie\_Language
* Movie\_Rental
* Rental\_Detail
* Store

1. **Listado de atributos**

* Actor

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | actor\_code | Number | x |  |  | x |
| 2 | actor\_first\_name | Varchar2(50) |  |  |  | x |
| 3 | actor\_last\_name | Varchar2(50) |  |  |  | x |

* Category

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | category\_code | Number | x |  |  | x |
| 2 | category\_name | Varchar2(30) |  |  |  | x |

* Language

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | language\_code | Number | x |  |  | x |
| 2 | language\_name | Varchar2(30) |  |  |  | x |

* Classification

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | classification\_code | Number | x |  |  | x |
| 2 | classification\_name | Varchar2(30) |  |  |  | x |

* Country

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | country\_code | Number | x |  |  | x |
| 2 | country\_name | Varchar2(150) |  |  |  | x |

* City

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | city\_code | Number | x |  |  | x |
| 2 | city\_name | Varchar2(30) |  |  |  | x |
| 3 | fk\_country\_code | Number |  | x |  | X |

* Store

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | store\_code | Number | x |  |  | x |
| 2 | store\_name | Varchar2(150) |  |  |  | x |
| 3 | store\_address | Varchar2(200) |  |  |  | X |
| 4 | city\_code | Number |  | X |  | X |

* Employee

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | employee\_code | Number | x |  |  | x |
| 2 | employee\_first\_name | Varchar2(50) |  |  |  | X |
| 3 | employee\_last\_name | Varchar2(50) |  |  |  | X |
| 4 | employee\_address | Varchar2(50) |  |  |  | X |
| 5 | employee\_email | Varchar2(50) |  |  |  | X |
| 6 | employee\_state | Varchar2(50) |  |  |  | X |
| 7 | employee\_username | Varchar2(50) |  |  |  | X |
| 8 | employee\_password | Varchar2(50) |  |  |  | X |
| 9 | store\_code | Number | X |  |  | X |

* Client

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | client\_code | Number | x |  |  | x |
| 2 | client\_first\_name | Varchar2(30) |  |  |  | x |
| 3 | client\_last\_name | Varchar2(30) |  |  |  | X |
| 4 | client\_zip\_code | Number |  |  |  | X |
| 5 | client\_email | Varchar2(50) |  |  |  |  |
| 6 | register\_date | Date |  |  |  |  |
| 7 | client\_state | Varchar2(50) |  |  |  |  |
| 8 | client\_address | Varchar2(100) |  |  |  | X |
| 9 | client\_city\_code | Number |  | X |  | X |
| 10 | favorite\_store\_code | Number |  | X |  | x |

* Movie

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | movie\_code | Number | x |  |  | x |
| 2 | movie\_title | Varchar2(30) |  |  |  | x |
| 3 | movie\_description | Varchar3(250) |  |  |  |  |
| 4 | movie\_duration | Number |  |  |  | X |
| 5 | release\_year | Number |  |  |  | X |
| 6 | rent\_time | Number |  |  |  | X |
| 7 | rent\_cost | Number |  |  |  | X |
| 9 | penalty\_cost | Number |  |  |  | X |

* Movie\_rental

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | rental\_code | Number | x |  |  | x |
| 2 | rental\_date | Date |  |  |  | x |
| 3 | pay\_date | Date |  |  |  | X |
| 4 | mount\_to\_pay | Number |  |  |  | X |
| 5 | client\_code | Number | X |  |  | X |
| 6 | employee\_code | Number | X |  |  | X |

* Rental\_detail

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | rental\_code | Number |  | X |  | x |
| 2 | movie\_code | Number |  | X |  | x |
| 3 | return\_date | Date |  |  |  |  |
| 4 | rent\_cost | Number |  |  |  | x |
| 5 | rent\_duration | Number |  |  |  | x |

* Movie\_intentory

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | movie\_code | Number |  | X |  | x |
| 2 | store\_code | Number |  | X |  | x |
| 3 | quantity | Number |  |  |  | X |

* Movie\_actor

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | movie\_code | Number |  | X |  | x |
| 2 | actor\_code | Number |  | x |  | x |

* Movie\_category

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | movie\_code | Number |  | x |  | x |
| 2 | category\_code | Number |  | X |  | x |

* Movie\_classification

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | movie\_code | Number |  | X |  | x |
| 2 | classification\_code | Number |  | X |  | x |

* Movie\_language

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Nombre | Tipo | Primary | Forean | Unique | Not Null |
| 1 | movie\_code | Number |  | x |  | x |
| 2 | language\_name | Number |  | X |  | x |

1. **Relaciones entre Entidades**

* Entidad ‘Country’ puede tener uno o muchos de entidad ‘City’
* Entidad ‘City’ puede tener uno o muchos de entidad ‘Client’
* Entidad ‘Client’ puede tener uno o muchos de entidad ‘Movie\_rental’
* Entidad ‘City’ puede tener uno o muchos de entidad ‘Store’
* Entidad ‘Store’ puede tener uno o muchos de entidad ‘Employee’
* Entidad ‘Employee’ puede tener uno o muchos de entidad ‘Movie\_rental’

1. **Restricción para utilizar**

* Entidad 1, Columna número: se creo la restricción de que numero tiene que ser mayor o igual a 1 y menor o igual a 10.
* Entidad 2. Columna género: se creo la restricción para que solo se acepte Hembra o Macho.

1. **Consideración de diseño**

Se dieño una entidad ‘Rental\_detail’ la cual es un detalle de la factura (Renta) correspondiente a la renta de las peliculas, partiendo del concepto de que una renta puede tener muchas peliculas, lo cual haría que la integridad de los datos se viera afectada al manejar todo en la misma tabla ‘Movie\_rental’.

Se diseño una entidad ‘Movie\_category’ debido a la necesidad de romper la relación de muchos a muchos existente entre las entidades ‘Category’ y la entidad ‘Movie’.

Se diseño una entidad ‘Movie\_language’ debido a la necesidad de romper la relación de muchos a muchos existente entre las entidades ‘Language’ y la entidad ‘Movie’.

Se diseño una entidad ‘Movie\_classification’ debido a la necesidad de romper la relación de muchos a muchos existente entre las entidades ‘Movie’ y la entidad ‘Classification’.

Se diseño una entidad ‘Movie\_actor’ debido a la necesidad de romper la relación de muchos a muchos existente entre las entidades ‘Actor’ y la entidad ‘Movie’.

Se diseño la entidad ‘Movie\_inventory’ debido a la necesidad de romper la relación de muchos a muchos existente entre las entidades ‘Movie’ y la entidad ‘Store’ y la entidad ‘Movie\_inventory’ contiene el codigo de la pelicula, el codigo de la tienda y la cantidad de unidades disponibles en la tienda.