**Description of relationships**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Entity name** | **Multiplicity** | **Relationships** | **Multiplicity** | **Entity name** |
| branch | 1.. 1 | has | 1.. 1 | branch\_address |
| branch | 1.. 1 | has at least one | 1.. 3 | telephone\_line |
| branch | 1.. 1 | managed by | 1.. 1 | manager |
| branch | 1.. 1 | has multiple | 0.. n | customer\_registration |
| branch | 1.. 1 | has multiple | 0.. n | video\_copy |
| branch | 1.. 1 | har multiple | 0.. n | video\_order |
| employee\_info | 1.. 1 | has one | 1.. n | manager |
| employee\_info | 1.. 1 | has at least one | 1.. n | supervisor |
| employee\_info | 1.. 1 | has many | 1.. n | employee |
| customer | 1.. 1 | registers | 1.. 1 | customer\_registration |
| customer | 0.. n | has one | 1.. 1 | employee\_info |
| customer | 1.. 1 | has one | 1.. 1 | member\_address |
| customer | 1.. 1 | can have many | 0.. n | rent |
| video\_copy | 1.. 1 | can have many | 1.. 1 | rent |
| video\_copy | 1.. 1 | is one of | 0.. n | video |
| video | 1.. 1 | can have many | 0.. n | role |
| video | 1.. 1 | is part of | 0.. n | video\_order |
| video\_supplier | n.. m | does | n.. m | video\_order |
| video\_supplier | 1.. 1 | has | 1.. 1 | supplier\_address |

|  |  |  |  |
| --- | --- | --- | --- |
| Entity name | **Description** | **Aliases** | **Occurrence** |
| **branch** | Holds all branches of the company. |  | Each branch is under the same company. |
| **branch\_address** | Holds information about branch location. |  | Each branch has one address. |
| **telephone\_line** | Holds phone numbers used by branch. |  | A branch can have up to three phone lines. |
| **employee\_info** | Information that’s common for all employees. | staff info | Managers, supervisors and employees have this. |
| **manager** | Is above supervisor. |  | A branch has only one. |
| **supervisor** | Is above employee. |  | A branch can have multiple. |
| **employee** |  | staff | All employees are tied to a supervisor. |
| **customer** | Someone that rents a video copy. | member |  |
| **customer\_registration** | A customer har to be registered. | member registration | One time for each customer. |
| **member\_address** |  |  | Every member need to give its address. |
| **rent** | Relationship between customer and video copy rented. |  | Entered every time a customer rents a video copy. |
| **video\_copy** | An instance of many videos. |  | You can have infinite copies of videos. |
| **video** |  |  | Unique video. |
| **video\_order** | Relationship between video copies ordered, and video supplier. |  | Every time a group of copies is ordered. |
| **video\_supplier** | Someone who sells video copies. | video dealer | A supplier can sell to multiple branches. |
| **supplier\_address** |  |  |  |
| **role** | Keeps track of actors in movies. | character | An actor can have multiple roles. |

**Description of Entities**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Entity name | **Attributes** | **Description** | **Data type & Length** | **Nulls** | **Multi-valued** |
| **branch** | branch\_number | identifies branch | int | no | no |
| **branch\_address** | branch\_number  state  city  zip\_code  street  street\_code | identifies branch | int  45 char  45 char  4 char  45 char  int | no  no  no  no  no  no | no  no  no  no  no  no |
| **telephone\_line** | tlf\_number\_id  branch\_number  tlf\_number | identifies branch tlf nr  identifies branch | int  int | no  no  yes | no  no  no |
| **employee\_info** | staff\_number  name  position  salary | identifies staff  employee’s job  earned yearly | int  45 char  45 char  int | no  no  yes  yes | no  no  no  no |
| **manager** | staff\_number  branch\_number | identifies as employee  reference to branch | int  int | no  no | no  no |
| **supervisor** | staff\_number  manager\_staff\_number | identifies as employee  reference to manager | int  int | no  no | no  no |
| **employee** | staff\_number  supervisor\_staff\_number | identifies employee  reference to supervisor | int  int | no  no | no  no |
| **customer** | member\_number  first\_name  last\_name  date\_registered  staff\_number | identifies customer  became member here  employee who registered member | int  45 char  45 char  date  int | no  no  no  no  no | no  no  no  no  no |
| **customer\_registration** | member\_number  branch\_number | identifies customer  reference to branch | int  int | no  no | no  no |
| **member\_address** | member\_number  state  city  zip\_code  street  street\_code | identifies customer | int  45 char  45 char  4 char  45 char  int | no  no  no  no  no  no | no  no  no  no  no  no |
| **rent** | rental\_number  date\_rented  date\_returned  video\_copy\_number  member\_number | identifies renting  identifies which copy  identifies which member renting | int  date  date  int  int | no  no  yes  no  no | no  no  no  no  no |
| **video\_copy** | video\_number  daily\_rental\_rate  purchase\_price  status  branch\_number  catalog\_number | identifies video  price to rent for a day  purchased by supplier  rented or not  reference to branch  reference to which video | int  int  int  boolean  int  int | no  no  no  no  no  no | no  no  no  no  no  no |
| **video** | catalog\_number  title  category  director | identifies video  name of main director | int  45 char  45 char  45 char | no  no  yes  yes | no  no  no  no |
| **video\_order** | order\_number  quantity  price  date\_placed  date\_recieved  catalog\_number  supplier\_number  branch\_number | identifies order  how many copies ordered  price of all copies together  when they were ordered  when the copies arrived  reference to video  reference to supplier  reference to branch | int  int  int  date  date  int  int  int | no  no  no  no  yes  no  no  no | no  no  no  no  no  no  no  no |
| **video\_supplier** | supplier\_number  name  telephone  status | identifies supplier  company or person name  single or taken | int  45 char  8 char  boolean | no  no  no  yes | no  no  no  no |
| **supplier\_address** | supplier\_number  state  city  zip\_code  street  street\_code | identifies | int  45 char  45 char  4 char  45 char  int |  |  |
| **role** | character\_name  catalog\_number  actor\_name | character the actor plays  reference to video they starred in | 45 char  int  45 char | no  no  no | no  no  no |

**Desciption of Attributes** (above)