1. Identify and describe the components of the table shown in Figure Q3.21, using correct terminology. Use your knowledge of naming conventions to identify the table’s probable foreign key(s).
   1. Entities - There is only a single entity EMPLOYEE in the above database. Attributes - The attributes related to the EMPLOYEE entity are: EMP\_NUM, EMP\_LNAME, EMP\_INITIAL, EMP\_FNAME, DEPT\_CODE and JOB\_CODE. Constraints – It has a primary key for the EMPLOYEE table, the column EMP\_NUM has unique values, does not have any null values and also uniquely identifies all the records of the table. The probable foreign keys are: DEPT\_CODE (which may reference a DEPARTMENT table) and JOB\_CODE (which may reference a JOB table).
2. Identify the Primary Keys
   1. For DIRECTOR table, the primary key is DIR\_NUM. For the PLAY table, the primary key is PLAY\_CODE.
3. Identify the Foreign Keys
   1. For PLAY table, the foreign key is DIR\_NUM. There is no foreign key in the DIRECTOR table.
4. Create ERM

PLAY

PLAY\_CODE

PLAY\_NAME

PLAY\_NUM

DIRECTOR

DIR\_NUM

DIR\_LNAME

DIR\_DOB

WRITES

|  |  |  |
| --- | --- | --- |
| PLAY\_CODE | PLAY\_NAME | DR\_NUM |
| 1001 | Cat on a Cold | 102 |
| 1002 | Hold the Mayo | 101 |
| 1003 | Coffee | 102 |
| 1004 | Silly putty | 100 |
| 1005 | See no sound | 101 |
| 1006 | Starstruck | 102 |
| 1007 | Stranger | 101 |

1. Create the relational diagram to show the relationship between DIRECTOR and PLAY.

|  |  |  |
| --- | --- | --- |
| DIR\_NUM | DIR\_LNAME | DIR\_DOB |
| 100 | Broadway | 12-Jan-65 |
| 101 | Hollywoody | 18-Nov-53 |
| 102 | Goofy | 21-Jun-62 |

TABLE NAME: DIRECTOR

TABLE NAME: PLAY

1 DIRECTS ∞

1. Suppose you wanted quick lookup capability to get a listing of all plays directed by a given director. Which table would be the basis for the INDEX table, and what would be the index key?
   1. PLAY table would be the basis for the INDEX table and the DIR\_NUM would be the index key.

PLAY TABLE INDEX

|  |  |
| --- | --- |
| 100 | 4 |
| 101 | 2,5,7 |
| 102 | 1,3,6 |

1. What would be the conceptual view of the INDEX table described in Question 26? Depict the contents of the conceptual INDEX table.

PLAY TABLE INDEX PLAY TABLE

|  |  |
| --- | --- |
| 100 | 4 |
| 101 | 2,5,7 |
| 102 | 1,3,6 |

|  |  |  |
| --- | --- | --- |
| PLAY\_CODE | PLAY\_NAME | DR\_NUM |
| 1001 | Cat on a Cold | 102 |
| 1002 | Hold the Mayo | 101 |
| 1003 | Coffee | 102 |
| 1004 | Silly putty | 100 |
| 1005 | See no sound | 101 |
| 1006 | Starstruck | 102 |
| 1007 | Stranger | 101 |