

2 Databases (TGG)

Suppose that we have a relational database with the following tables.

| Table   | Primary Key                           |
|---|---------------------------------------|
| Movies( <i>mid</i> , <i>title</i> , <i>year</i> ) | <i>mid</i>                            |
| People( <i>pid</i> , <i>name</i> )                | <i>pid</i>                            |
| Genres( <i>gid</i> , <i>genre</i> )               | <i>gid</i>                            |
| ActsIn( <i>pid</i> , <i>mid</i> , <i>role</i> )   | <i>pid</i> , <i>mid</i> , <i>role</i> |
| HasGenre( <i>gid</i> , <i>mid</i> )               | <i>gid</i> , <i>mid</i>               |

In table `ActsIn`, `pid` is a foreign key into `People` and `mid` is a foreign key into `Movies`. In table `HasGenre`, `mid` is a foreign key into `Movies` and `gid` is a foreign key into `Genres`.

Note that this database is similar to, but not the same as, the examples used in lectures and the database used for practicals.

- (a) Suppose that the attribute `role` was not considered part of the key for table `ActsIn`. How would this change your interpretation of the database? [2 marks]
- (b) Suppose we replaced the tables `Genres(gid, genre)` and `HasGenre(gid, mid)` with a single table `MovieGenres(mid, genre)`. Would this change what data can be captured in the database? Explain your answer. [2 marks]
- (c) Write an SQL query that returns `title`, `mid`, for those movies that are not associated with any genre. (Use the schema at the top of the page, not the possible modifications discussed in (a) or (b).) [4 marks]
- (d) Write an SQL query that returns `name`, `pid`, for those people that act in at least one movie associated with the genre 'Drama'. [5 marks]
- (e) Write an SQL query that returns `title`, `mid`, `genre`, for those movies that have `genre` as their only genre. That is, if the query returns the row

| 'The Big Hoot' | 947837 | 'Comedy' |

it means that this movie is associated only with the genre 'Comedy' and no other genre. [7 marks]