

## CSCI 2020 Database Fundamentals Lab10

Submit a written document to your instructor before leaving the lab. You may use your notes, SQL files, Oracle documentation, and books. **You may work in teams of 2-3 people**, just make sure all team member names are on the document you submit.

97

### TASKS

**Create a set of tables to model the following information.  
Be sure to indicate all primary keys and foreign keys.  
Also add a few rows of sample data to each of your tables.**

Example:

| Student |     |            |             |         |             |        |           |             |
|---------|-----|------------|-------------|---------|-------------|--------|-----------|-------------|
| ID      | SSN | GIVEN_NAME | FAMILY_NAME | ADDRESS | HIGH_SCHOOL | HS_GPA | ACT_SCORE | MAJOR       |
| PK      |     |            |             |         |             |        |           | FK to MAJOR |

In this database we will track information about many pieces of software. The database is to be used by a company that tracks the success of software houses.

- ✓1. Each piece of software has a unique name and a year of production
- ✓2. A piece of software is made by one software house
- ✓3. A piece of software is a 'Game', 'Utility', or an 'Other'
- ✓4. A piece of software is built for an OS family: Windows, Mac, Linux, etc...
- ✓5. A piece of software has a retail cost per unit
- ✓6. A piece of software is written by one or more developers
- ✓7. Each developer may develop several pieces of software
- ✓8. Each developer specializes in one OS
- ✓9. All developers are treated as subcontractors and are given a fee for each piece of software they work on
- ✓10. For all people in the database, names (family and given), date of birth, and addresses are kept
- ✓11. A developer may have an IM alias
- ✓12. Each software house's unique name, location (street and zip code), and date of founding are tracked
- ✓13. Some developers are under exclusive contract to a specific software house, and are paid a retainer in addition to their development fees
- ✓14. Each software house hires several people to act as project managers
- ✓15. The managers are paid a salary
- ✓16. A piece of software may have one or more backers
- ✓17. Each backer provides some percentage of the software package's cost
- ✓18. A backer may back several pieces of software
- ✓19. A backer is a corporation with a name and a tax\_id

### Software

| ID<br>(PK) | NAME        | YEAR | TYPE         | OS<br>(FK to OS.ID) | MADE_BY<br>(FK to House.ID) | COST |
|------------|-------------|------|--------------|---------------------|-----------------------------|------|
| 1          | Angry Birds |      | 2010 Game    | 2                   | 2                           | 0.99 |
| 2          | ping        |      | 1986 Utility | 1                   | 3                           | 1    |
| 3          | Firefox     |      | 2001 Other   | 3                   | 1                           | 0    |
| 4          | format      |      | 1984 Utility | 4                   | 1                           | 2    |

### OS

| ID<br>(PK) | NAME    |
|------------|---------|
| 1          | Windows |
| 2          | Mac     |
| 3          | Linux   |
| 4          | Solaris |

### House

| ID<br>(PK) | NAME                      | STREET                    | ZIP   | FOUNDED    |
|------------|---------------------------|---------------------------|-------|------------|
| 1          | Mega Software Corporation | 100 Rich Street           | 90210 | JUN-1-2008 |
| 2          | Google                    | 1600 Amphitheatre Parkway | 94043 | JAN-1-1990 |
| 3          | Apple                     | 1 Infinite Loop           | 95014 | FEB-1-1979 |

### Person

| ID<br>(PK) | GIVEN_NAME | FAMILY_NAME | DOB         | ADDRESS            |
|------------|------------|-------------|-------------|--------------------|
| 1          | Peter      | Griffin     | FEB-07-1962 | 100 Spooner St.    |
| 2          | Lois       | Griffin     | MAY-29-1965 | 100 Spooner St.    |
| 3          | Stewie     | Griffin     | JUN-6-2006  | 100 Spooner St.    |
| 4          | Adam       | West        | SEP-21-1941 | 1 Town Hall Square |

### Manager

| ID<br>(PK) | HOUSE<br>should be FK | SALARY |
|------------|-----------------------|--------|
| 2          |                       | 25000  |
| 4          |                       | 700    |

(FK to Person.ID)

Developer

| ID<br>(PK) (FK to Person.ID) | IM_ALIAS | OS_SPECIALITY<br>(FK to OS.ID) | FEE | RETAINER_FEE | HOUSE<br>(FK to House.ID) |
|------------------------------|----------|--------------------------------|-----|--------------|---------------------------|
| 1 peter.g                    |          |                                | 1   | 450          | 0 null                    |
| 3 iruleyou                   |          |                                | 2   | 500          | 100                       |
|                              |          |                                |     |              | 3                         |

Backer

| TAX_ID<br>(PK) | NAME                       |
|----------------|----------------------------|
| 349204203      | Venture Capital Co.        |
| 840224232      | Trusted People Inc.        |
| 706567146      | Reap The Riches Foundation |

Backed\_Software

| BACKER_ID<br>(PK, FK to Backer.TAX_ID) | SOFTWARE_ID<br>(PK, FK to Software.ID) | PERCENTAGE |
|----------------------------------------|----------------------------------------|------------|
| 840224232                              |                                        | 2          |
| 349204203                              |                                        | 4          |
| 840224232                              |                                        | 3          |
| 706567146                              |                                        | 3          |
| 706567146                              |                                        | 1          |
|                                        |                                        | 5          |

Developed

| DEVELOPER_ID<br>(PK, FK to Developer.ID) | SOFTWARE_ID<br>(PK, FK to Software.ID) |
|------------------------------------------|----------------------------------------|
| 1                                        | 4                                      |
| 3                                        | 2                                      |
| 1                                        | 3                                      |
| 3                                        | 1                                      |
| 3                                        | 2                                      |