Assignment 1- CSC455
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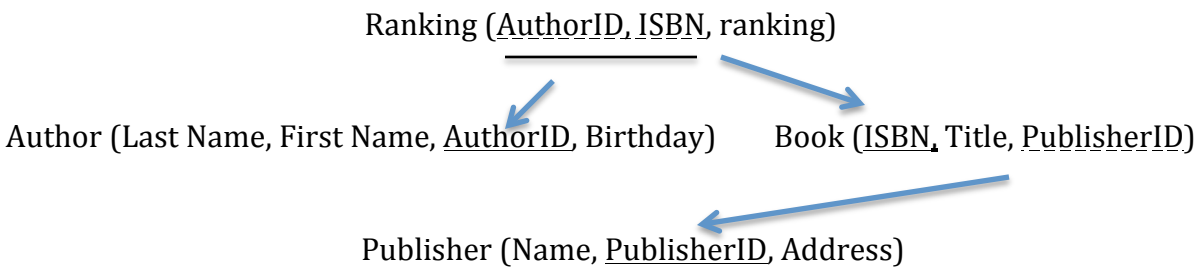
Part 1



Part 2

```
CREATE TABLE Ranking(
 authorID Number(7),
 ISBN Varchar(13),
 ranking Number(7),
 CONSTRAINT RankingPK
  Primary Key  (authorID, ISBN),
 CONSTRAINT RankingFK1
  Foreign Key (authorID)
        REFERENCES Author(authorID),
 CONSTRAINT RankingFK2
  Foreign Key (ISBN)
        REFERENCES Book(ISBN)
  );

CREATE TABLE Book(
 ISBN VarChar(13),
 Title VarChar(300),
 PublisherID Number(30),
 CONSTRAINT BookPK
  Primary Key (ISBN),
 CONSTRAINT BookFK
  Foreign Key (PublisherID)
  References Publisher (PublisherID)
  );

CREATE TABLE Author(
 LastName Varchar(30),
 FirstName Varchar(30),
 AuthorID Number(30),
 Birthday Varchar(30),
 CONSTRAINT AuthorPK
 Primary Key (AuthorID)
 );
```

```
CREATE TABLE Publisher(
  Names Varchar(30),
  PublisherID Number(30),
  Address Varchar(30),
  CONSTRAINT PublisherPK
  Primary Key (PublisherID)
  );

INSERT INTO Author(LASTNAME , FIRSTNAME , AUTHORID , BIRTHDAY)
VALUES('King', 'Stephen', 2, 'September 9 1947');
INSERT INTO Author(LASTNAME , FIRSTNAME , AUTHORID , BIRTHDAY)
VALUES ('Asimov', 'Isaac', 4, 'January 2 1920');
INSERT INTO Author(LASTNAME , FIRSTNAME , AUTHORID , BIRTHDAY)
VALUES ('Verne', 'Jules', 7, 'February 8 1828');
INSERT INTO Author(LASTNAME , FIRSTNAME , AUTHORID , BIRTHDAY)
VALUES ('Rowling', 'Joanne', 37, 'July 31 1965');


INSERT INTO Publisher(NAMES , PUBLISHERID , ADDRESS)
VALUES('Bloomsbury Publishing', 17, 'London Borough of Camden');
INSERT INTO Publisher(NAMES , PUBLISHERID , ADDRESS)
VALUES('Arthur A. Levine Books', 18, 'New York City');

INSERT INTO Book(ISBN,TITLE,PUBLISHERID)
VALUES(1111-111, 'Databases from outer space', 17);
INSERT INTO Book(ISBN,TITLE,PUBLISHERID)
VALUES (2222-222,'Dark SQL', 17);
INSERT INTO Book(ISBN,TITLE,PUBLISHERID)
VALUES (3333-333, 'The night of the living databases', 18);

INSERT INTO Ranking(AUTHORID, ISBN, RANKING)
 VALUES(2, 1111-111, 1);
INSERT INTO Ranking(AUTHORID, ISBN, RANKING)
 VALUES (4, 1111-111, 2);
INSERT INTO Ranking(AUTHORID, ISBN, RANKING)
 VALUES (4, 2222-222, 2);
INSERT INTO Ranking(AUTHORID, ISBN, RANKING)
 VALUES (7, 2222-222, 1);
INSERT INTO Ranking(AUTHORID, ISBN, RANKING)
 VALUES (37, 3333-333, 1);
INSERT INTO Ranking(AUTHORID, ISBN, RANKING)
 VALUES (2, 3333-333, 2);
```

Python Code:

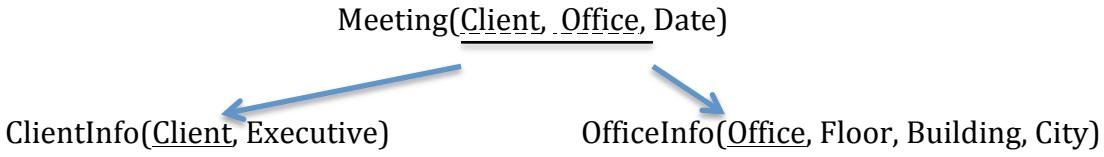
```
def generateInsert(table, listVals):
    statement= 'INSERT INTO '+table+ ' VALUES ('
    length = len(listVals)
    count = 0
    for i in listVals:
        statement += str(i)
        count = count+1
        if count< length:
            statement += ','
    print(str(statement) + ')')
```

Example run in shell:

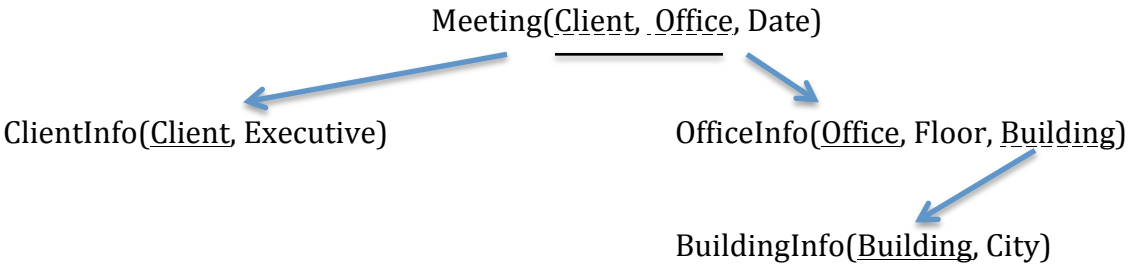
```
generateInsert('Table',['a','b','c'])
INSERT INTO Table VALUES (a,b,c)
```

Part 3

a. Remove partial dependencies to put in 2NF. (Recall: A partial dependency is a functional dependency where the determinant is a subset of the primary key)



b. Remove transitive dependencies to put in 3NF. (Recall: A transitive dependency is a functional dependency where the determinant is not a subset of the primary key)



Part 4 Student (First, Last, GPA, Honor, Credits)

a) This is in 2NF because there are no partial dependencies.
b) This is not in 3FN because GPA--> Honor is a transitive dependency.
3FN Decomposition:

Student (First, Last, GPA, Credits)

HonorStatus(GPA, Honor)