Homework 1 Solution Fall 2015 – 50 pt total

1. Find the names (Last and First) and State of
   a. All persons that were in a Movie in 1997
   b. All persons that were in a TV show that started in 1987.
   c. All persons that were in either a Movie in 1997 or a TV show in 1987
   d. All persons that were in both a Movie in 1997 and a TV show that started in 1987

2. Find the last names (Last and First) of the directors for all Movies and TV Shows that have the same name (TV Show and Movie have the same names).

3. Find the names (Last and First Name) of all actors and their roles for “Friends” for Episodes 11 to 25.

4. Find the names (Last and First) that played the same Role in a TV and a Movie who won an Emmy for the TV role but did not win an Oscar for the Movie role.

5. Find the names of all Shows or Movies that have won an Emmy (TV Show) or Oscar (Movie).
Problem 1 – 5 pts total
- a – no credit – in PPTX of class
- b – 3 pts total – 1 for of the three lines
- c – 1 pts total for one line
- d – 1 pts f total or one line

Problem 2 – 15 pts total – 3 pts for each line

Problem 3 – 16 pts total – 4 pts for each line

Problem 4 – 9 pts total – 3 pts for each line

Problem 5 – 5 pts total – 1 pt union, 2pts either side of union
Problem 1 – 5 pts total

- a – no credit – in PPTX of class
- b – 3 pts total – 1 for of the three lines
- c – 1 pts total for one line
- d – 1 pts f total or one line

Find the names (Last name and First Name) and State of

a. All persons that were in a Movie in 1997

Movies1997(ShowID) = π_{ShowID} (σ_{Year=1997}(Movies))

MovieActors(PersonID) = π_{PersonID} (σ_{Movies1997.ShowID=MovieRoles.ShowID}(Movies1997 x MovieRoles))

1a. Answer = π_{Lname, FName, State} (σ_{Person.PersonID = AllActors.PersonID}(Person x MovieActors))

b. All persons that were in a TV show in 1987.

TVShows1987(ShowID) = π_{ShowID} (σ_{StartYear=1987}(TVShows))

TVActors(PersonID) = π_{PersonID} (σ_{TVShows1987.ShowID=TVRoles.ShowID}(TVShows1987 x TVRoles))

1b. Answer = π_{Lname, FName, State} (σ_{Person.PersonID = AllActors.PersonID}(Person x TVActors))

c. All persons that were in either a Movie in 1997 or a TV show in 1987

AllActors(PersonID) = 1a. Answer ∪ 1b. Answer

d. All persons that were in both a Movie in 1997 or a TV show in 1987

AllActors(PersonID) = 1a. Answer ∩ 1b. Answer
Find the last names (Last name and First Name) of the directors for all Movies and TV Shows that have the same name (TV Show and Movie have the same names).

\[
\text{MovieIDs}(\text{ShowID}) = \pi_{\text{Movies.ShowID}} (\sigma_{\text{MovieName} = \text{ShowName}} (\text{Movies} \times \text{TVShows}))
\]

\[
\text{TVShowIDs}(\text{ShowID}) = \pi_{\text{TVShows.ShowID}} (\sigma_{\text{MovieName} = \text{ShowName}} (\text{Movies} \times \text{TVShows}))
\]

\[
\text{MovieDirs}(\text{PersonID}) = \pi_{\text{PersonID}} (\sigma_{\text{Movies.ShowID} = \text{MovieDirectors.ShowID}} (\text{MovieIDs} \times \text{MovieDirectors}))
\]

\[
\text{TVDirs}(\text{PersonID}) = \pi_{\text{PersonID}} (\sigma_{\text{TV.ShowID} = \text{TVDirectors.ShowID}} (\text{TVShowIDs} \times \text{TV Directors}))
\]

\[
\text{Answer} = \pi_{\text{Lname,FName}} (\sigma_{\text{Person.PersonID} = \text{PersonID}} (\text{Person} \times (\text{MovieDirs} \cup \text{TVDirs})))
\]
Problem 3 – 16 pts total – 4 pts for each line

Find the names (Last name and First Name) of all actors and their roles for “Friends” for Episodes 11 to 25.

\[
\text{Friends(ShowID)} = \pi_{\text{ShowID}} (\sigma_{\text{ShowName}=\text{Friends}} (\text{TVShows}))
\]

\[
\text{ActorsandRoles(PersonID, RoleID)} = \\
\pi_{\text{PersonID, RoleID}} (\sigma_{\text{TVRoles.ShowID}=\text{Friends.ShowID}} (\text{TVRoles} \times \text{Friends}))
\]

\[
\text{RoleNames (PersonID, RLName, RFName)} = \\
\pi_{\text{PersonID,RLName,RFName}} (\sigma_{\text{ActorsandRoles.RoleID}=\text{Roles.RoleID}} (\text{ActorsandRoles} \times \text{Roles}))
\]

\[
\text{Answer} = \pi_{\text{Lname,Fname,RLName,RFName}} (\sigma_{\text{Person.PersonID} = \text{RoleNames.PersonID}} (\text{Person} \times \text{RoleNames}))
\]
Problem 4 – 9 pts total – 3 pts for each line

Find the names (Last name and First Name) that played the same Role in a TV and a Movie who won an Emmy for the TV role but did not win an Oscar for the Movie role.

\[
\text{TVwithEmmy} = \pi_{\text{PersonID, RLName, RFName}} (\sigma_{\text{EmmyFlag=True}} \text{TVRoles}) \times \text{RoleID,ShowID Roles}
\]

\[
\text{MovieNoOscar} = \pi_{\text{PersonID, RLName, RFName}} (\sigma_{\text{OscarFlag=False}} \text{MovieRoles}) \times \text{RoleID,ShowID Roles}
\]

\[
\text{Answer} = \pi_{\text{Lname,Fname Person}} \times \text{PersonID (TVwithEmmy (natural join) MovieNoOscar))}
\]

Problem 5 – 5 pts total – 1 pt union, 2pts either side of union

Find the names of all Shows or Movies that have won an Emmy (TV Show) or Oscar (Movie).

\[
\text{Answer} = \pi_{\text{ShowName}} (\sigma_{\text{NumEmmy}>0} \text{TVShows}) \cup \pi_{\text{MovieName}} (\sigma_{\text{NumOscar}>0} \text{Movies})
\]