**CSC 134-02 Database Management Systems (Spring 2022)**

**In-class Worksheet 6 (100 points)**

**Database Schema Normalization**

**Due at 11:59 pm, Sunday April 17, 2022**

Question 1: Consider the relation R = {A, B, C, D, E, F, G, H, I, J} and the set of functional dependencies S = { {A, B} -> {C}, {A} -> {D, E}, {B} -> {F}, {F} ->{G, H}, {D} -> {I, J} }.

* What is the key for R?
* Decompose R into 2NF, then 3NF relations.

Question 2: Consider the relation R = {A, B, C, D, E, F, G, H, I, J, K} and the set of functional dependencies S = { {A, B} -> {C}, {B, D} -> {E, F}, {A, D} -> {G, H}, {B} -> {I}, {G} -> {J} , {F} -> {K} }.

* What is the key of R?
* Decompose R (1) into 2NF, (2) then into 3NF relations, and (3) check whether the 3NF relations you obtained are in BCNF or not.

**Deliverables**

1. A pdf or image containing all your answers. The instructor will share the Jamboard link with you in class.

* Create a sticky note with your name on your frame.
* Save **your OWN frame** as image. Make sure the sticky note with your name is there.
* Submit your image to Canvas

How to use Google Jamboard: <https://www.youtube.com/watch?v=IJc55XOJhJI>

**Requirements on deliverables**

1. Your deliverable should be ***FLastname\_W6.pdf*** where *F* indicates first letter, in uppercase, of your firstname and *Lastname* indicates your last name where first letter is in uppercase. Please exactly follow the naming rule described above. You will be deducted 5 points for incorrect naming.
2. Clearly state your name, ID, course title, worksheet number, and due date.
3. Submit your pdf file via Canvas.
4. No late submission will be accepted.
5. When grades are returned to you on Canvas, you have 7 days to meet with the instructor for grade changes. Issues and/or disagreements concerning your grade must be resolved in such 7 days window. After 7 days, the grades are written in stone and can't be changed after that point, for whatever reason.