The purpose of a worksheet is to provide a support structure for your study and to provide better coverage of routine introductory exercises prior to completing more challenging homework assignments. Much of the text comes from questions that arise during the course.

Please attempt the worksheet on your own. Answers are provided under the Practice module.

 To receive credit for completing the worksheet, you must write 'Done' in a textbox on D2L submission folder when you have finished the worksheet. Do not paste your work. Just say 'Done'.

Q1. Prime Attributes

What are the prime attributes in this functional dependency set: F={A → BC, B → C, D → B}

Q2. Normal Forms

Given a relation R (S, P, Q, X, Y, N, C) which is in 1 NF and its functional dependency set F = { S → NC, P → XY, SP → Q, Q → P}. F is in minimal cover.

(i) Decompose R first into to 2NF and then into 3NF.

(ii) Try Normalization algorithm directly to see if you get the same decomposition.

Q.3 BCNF

Consider a relation R(A,B,C,D,E). Find the highest normal form (amongst 2NF, 3NF, BCNF) for the given set of FDs.

BCD -->E, BDE --> C, BE --> D, BE --> A

ABD --> C, ACD --> E, ACE --> B, BC --> E

BE --> D, B --> E, D --> E, CD --> A

BDE --> A, AC --> E, B --> C, DE --> A