ASSIGNMENT #2
Due: October 16 by Midnight 11:59 PM

Assignments submitted (**ONE and ONLY ONE Solution per Team**) via ENCS Website or the deadline is not respected would be discarded and no replacement submission will be allowed

Exercise #1

Here are the two sets of FDs for R = {A, B, C, D, E}.

S = {A→B ; AB→C ; D→AC ; D→E}
T = {A→BC ; D→AE}

Are they equivalent?

Exercise #2

a) Compute the closure of the following set F of functional dependencies for relation schema R = {A, B, C, D, E}.

F = {A → BC ; CD → E ; B→D ; E→A}

b) List the candidate keys for R.

Exercise #3

Consider the following decomposition of the table ENROLLMENT in two tables Student and Course.

Table ENROLLMENT

StudentID	StudentName	CourseName	Credits
1111111	William Smith	COMP218	4
2222222	Michel Cyr	COMP353	4
3333333	Charles Fisher	COMP348	4
4444444	Patricia Roubaix	COMP353	4
2222222	Paul Paul	COMP352	3
5555555	Lucie Trembaly	COMP354	3

Table Student

StudentID	StudentName	Credits
1111111	William Smith	4
2222222	Michel Cyr	4
3333333	Charles Latan	4
4444444	Patricia Roubaix	4
2222222	Paul Paul	3
5555555	Lucie Trembaly	3

Table Course

Credits	CourseName
4	COMP218
4	COMP353
4	COMP348
4	COMP353
3	COMP352
3	COMP354

Question: Is this decomposition lossless? Justify.

Exercise #4

Using the Functional Dependencies,

F = {A → BC ; CD → E ; B→D ; E→A}

a) Compute the closure of F (F^+).

b) Is true / false : F $\models$ E → BC?

c) Provide the minimal cover F^c (*min(F)*).

d) List of the candidate keys for R

Submitting Assignment #2

- Naming convention file: Create ***one file .pdf***, containing your solution of your assignment using the following naming convention:

  The pdf file should be called *A2_TeamName*, where *TeamName* is your student group name.

- Submit your pdf file in the appropriate assignment folder via ENCS Website. The deadline is not respected would be discarded and no replacement submission will be allowed.
- Submit only **ONE version** of an assignment for each team. It is not an individual submission. If more than one version is submitted the last one, before the deadline date, will be graded and all others will be disregarded.

Evaluation Criteria of Assignment #2 (50 points)

Activities	Points
Exercise #1: - Are S and T equivalent? 10 pts.	10 pts.
Exercise #2: - Compute the closure of the following set F of functional dependencies for relation schema R. 5 pts. - List the candidate keys for R. 5 pts.	10 pts.
Exercise #3: - Is this decomposition lossless? Justify. 5 pts.	5 pts.
Exercise #4: - Compute the closure of F (F^+). 5 pts. - Is true / false : F $\models \rightarrow E \rightarrow BC$?. 5 pts. - Provide the minimal cover F^c (*min(F)*). 10 pts. - List of the candidate keys for R. 5 pts.	25 pts.