DB개론 Project6 (DeadLine 5월 25일 낮12시, 50점 만점) 조번호( )

1번 5점

- Construct an ER diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various test and examinations conducted. Make each entity to have at least 3 attributes.

2번 5점

- Design an ER diagram for keeping track of the exploits of your favorite sports team. You should store matches played, the scores in each match, the players in each match, and individual player statistics for each match. Summary statistics should be modeled as derived attributes.

3번 5점

Use Armstrong's axioms to prove the soundness of the union rule. (*Hint*: Use the augmentation rule to show that, if $\alpha \rightarrow \beta$, then $\alpha \rightarrow \alpha\beta$. Apply the augmentation rule again, using $\alpha \rightarrow \gamma$, and then apply the transitivity rule.)

4번 5점

Suppose that we decompose the schema $R = (A, B, C, D, E)$ into

$$(A, B, C)$$
$$(A, D, E).$$

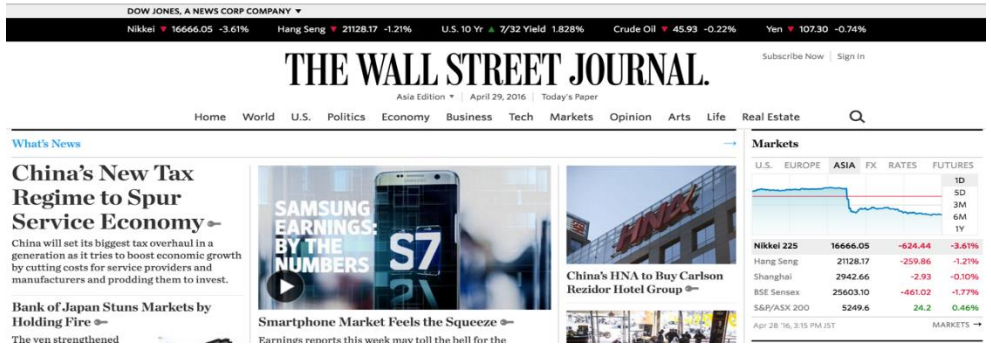
Show that this decomposition is a lossless-join decomposition if the following set F of functional dependencies holds:

$$A \rightarrow BC$$
$$CD \rightarrow E$$
$$B \rightarrow D$$
$$E \rightarrow A$$

5번 10점

- 아래 상황을 고려해서 lossless join property와 dependency preservation property 를 가지는 3NF로 design하시요
- Relation schema: *cust_banker_branch* = (*customer_id, employee_id, branch_name, type*)
- The FDs are:
  1. *customer_id, employee_id* → *branch_name, type*
  2. *employee_id* → *branch_name*
  3. *customer_id, branch_name* → *employee_id*

6번 10점



- (A) Consider the website '*The Wall Street Journal*'. Briefly discuss what dynamic generation of a web page is and describe at least 2 kinds of dynamic generation of the site has applied.
- (B) Describe the role of session and cookie in the context of the HTTP protocol

7번 5점

- *Let* $R = (A, B, C, G, H, I)$ *and* $F = \{A \rightarrow B \quad , \quad A \rightarrow C \, , \quad CG \rightarrow H, \quad CG \rightarrow I, \quad B \rightarrow H \}$
- (1) Find $(AG)^+$
- (2) Is AG a candidate key?

8번 5점

- *Let* $R = (A, B, C)$ *and* $F = \{A \rightarrow BC,\ B \rightarrow C,\ A \rightarrow B,\ AB \rightarrow C\}$
- Find the canonical cover of F?