

FD EXERCISE

1. Consider the following table **History** which shows all details of a patient's attendance at a clinic.

```
History (patientNum, name, address, (date, time, drNum,  
      drName, visitCode, description))
```

The following dependencies apply:

```
patientNum --> name  
patientNum --> address  
patientNum, date, time --> drNum      (doctor number)  
patientNum, date, time --> visitCode  (code to describe the consultation)  
patientNum, date, time --> description (concise description  
                                     of consultation)  
drNum ----> drName                    (doctor name)
```

Transform the above **History** table into 3NF table(s)

2. Given a relation $R(A,B,C,D,E)$ and a set of functional dependencies $F = \{A \rightarrow B, BC \rightarrow E, ED \rightarrow A\}$
 - a. Finding a candidate key
 - b. Transform this relation into 3NF relation(s)
3. Given a relation $R(A,B,C,D)$. For each following sets of functional dependencies,
 - a. Hãy tìm khóa tối thiểu của R.
 - b. Finding a candidate key
 - c. Transform this relation into 3NF relation(s)
 - i. $C \rightarrow D, C \rightarrow A, B \rightarrow C$
 - ii. $ABC \rightarrow D, D \rightarrow A$
 - iii. $A \rightarrow B, BC \rightarrow D, A \rightarrow C$
 - iv. $AB \rightarrow C, AB \rightarrow D, C \rightarrow A, D \rightarrow B$