# 2. tutorial Questions Answers:

# A.

## UNF

PAT\_APPOINMENT (staff\_no, dentist\_name, pat\_no, pat\_name, appointment, surgery\_no)

## 1NF

PAT\_APPOINMENT (staff\_no, pat\_no, dentist\_name, pat\_name, appointment\_date, appointment\_time, surgery\_no)

## Dependency diagram

staff\_no, appointment 🡪 pat\_no, surgery\_no FULL DEPENDENCY

staff\_no 🡪 dentist\_name PARTIAL DEPENDENCY

pat\_no 🡪 pat\_name TRANSITIVE DEPENDENCY

## 2NF:

PAT\_APPOINMENT (staff\_no, appointment, surgery\_no, pat\_no, pat\_name)

STAFF (*staff\_no,* dentist\_name)

## 3NF:

PAT\_APPOINMENT (staff\_no, appointment, surgery\_no, *pat\_no*)

STAFF (*staff\_no,* dentist\_name)

PATIENT (pat\_no, pat\_name)

# B.

## UNIT TABLE:

## UNF

UNIT(unit\_no, unit\_name, unit\_description, unit\_value)

## 1NF

UNIT(unit\_no, unit\_name, unit\_description, unit\_value)

## Dependency diagram

Unit\_no 🡪 unit\_name, unit\_description, unit\_value 🡪 FULL DEPENDENCY

## 2NF

UNIT(unit\_no, unit\_name, unit\_description, unit\_value)

## 3NF

UNIT(unit\_no, unit\_name, unit\_description, unit\_value)

## LECTURER DETAILS TABLE:

## UNF:

LECTURER (lectNo, lectName, lectOffice, lectPhone (unitNo, unitName))

## 1NF

LECTURER (*lectNo*, lectName, lectOffice, lectPhone)

## Dependency diagram

lectNo🡪 lectName, lectOffice, lectPhone FULL DEPENDENCY

ADVISES(lectNo, unitNo, unitName)

## Dependency diagram

unitNo 🡪 unitName PARTIAL DEPENDENCY

## 2NF

LECTURER (*lectNo*, lectName, lectOffice, lectPhone)

ADVISES(lectNo, *unitNo*)

UNIT (unitNo, unitName)

## 3NF

LECTURER (*lectNo*, lectName, lectOffice, lectPhone)

ADVISES(lectNo, *unitNo*)

UNIT (unitNo, unitName)

## STUDENT DETAILS:

## UNF:

STUDENT (studNo, studName, studAddress, courseEnr, modeOfStudy, lectNo, lectName (unitNo, unitName, year, sem, grade))

## 1NF:

STUDENT (studNo, studName, studAddress, courseEnr, modeOfStudy, mentorNo, mentorName)

## Dependency diagram-

lectNo🡪lectName Transitive Dependency

stuNo🡪 stuName, stuaAddress, stuCOurse, stuMonde, lectNo Full Dependency

ACADEMIC RECORD (studNo, unitNo, unitName, year, sem, grade)

## Dependency diagram-

unitNo🡪 unitName Partial Dependency

stuNo, unitNo, year, sem🡪 grade Full Dependency

## 2NF:

STUDENT (studNo, studName, studAddress, courseEnr, modeOfStudy, lectNo, lectName)

ACADEMIC RECORD (studNo, unitNo, year, sem, grade)

UNIT (unitNo, unitName)

### 3NF:

STUDENT (studNo, studName, studAddress, courseEnr, modeOfStudy, *lectNo*)

ACADEMIC RECORD (studNo, unitNo, year, sem, grade)

UNIT (unitNo, unitName)

LECTURER (lectNo, lectName)

## COLLECTED 3NF Relations:

1. UNIT(unit\_no, unit\_name, unit\_description, unit\_value)
2. LECTURER (*lectNo*, lectName, lectOffice, lectPhone)
3. ADVISES(lectNo, *unitNo*)
4. UNIT (unitNo, unitName)
5. STUDENT (studNo, studName, studAddress, courseEnr, modeOfStudy, *lectNo*)
6. ACADEMIC RECORD (studNo, unitNo, year, sem, grade)
7. UNIT (unitNo, unitName)
8. LECTURER (lectNo, lectName)

## Attribute synthesis:

1, 4, and 7

UNIT(unit\_no, unit\_name, unit\_description, unit\_value)

2, and 8

LECTURER (*lectNo*, lectName, lectOffice, lectPhone)

3

ADVISES(lectNo, *unitNo*)

6

ACADEMIC RECORD (studNo, unitNo, year, sem, grade)

5

STUDENT (studNo, studName, studAddress, courseEnr, modeOfStudy, *lectNo*)

# QUESTION 3

## UNF

BOOKING (booking\_no, client\_no, client\_name, (flight\_no, flight\_route, dep\_time, dep\_date, dep\_airport\_code, dep\_airport\_name, arr\_date, arr\_time, arr\_airport\_code, arr\_airport\_name))

## 1NF

BOOKING (booking\_no, client\_no, client\_name)

## Dependency diagram-

booking\_no 🡪 client\_no FULL DEPENDENCY

client\_no 🡪 client\_name TRANSITIVE DEPENDENCY

FLIGHT DETAILS (booking\_no, flight\_no, dep\_date, dep\_time, dep\_airport\_code, dep\_airport\_name, arr\_date, arr\_time, arr\_airport\_code, arr\_airport\_name)

## Dependency diagram-

flight\_no 🡪 dep\_time, dep\_airport\_code, arr\_time, arr\_airport\_code PARTIAL DEPENDENCY

flight\_no, dep\_date 🡪 arr\_date PARTIAL DEPENDENCY

dep\_airport\_code 🡪 dep\_airport\_name TRANSITIVE DEPENDENCY

arr\_airport\_code 🡪 arr\_airport\_name TRANSITIVE DEPENDENCY

## 2NF

BOOKING (booking\_no, client\_no, client\_name)

ITINERARY (booking\_no, flight\_no, dep\_date)

FLIGHT (flight\_no, dep\_time, dep\_airport\_code, dep\_airport\_name, arr\_time, arr\_airport\_code, arr\_airport\_name )

FLIGHT INSTANCE (flight\_no, dep\_date, arr\_date)

## 3NF

BOOKING (booking\_no, client\_no)

CLIENT(client\_no, client\_name)

ITINERARY (booking\_no, flight\_no, dep\_date)

FLIGHT (flight\_no, dep\_time, dep\_airport\_code , arr\_time, arr\_airport\_code,)

DEP\_AIRPORT(dep\_airport\_code , dep\_airport\_name)

ARR\_AIRPORT(arr\_airport\_code, arr\_airport\_name)

FLIGHT INSTANCE (flight\_no, dep\_date, arr\_date)