

**Module Code & Module Title**

CC6001NA Advance Database System Development

**Assessment Weightage & Type**

40% Individual Coursework

**Year and Semester**

2019-20 Autumn

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**Assignment Due Date:**

**Assignment Submission Date:**

**Word Count:**

*I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.*

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# 1. Textual Analysis

The following are the textual analysis of the questions:

* A Company can have many number of staff.
* A Company can have many number of tour packages.
* A Company can have assigned many tour guides for a tour.
* A Customer can take many packages but one at time.

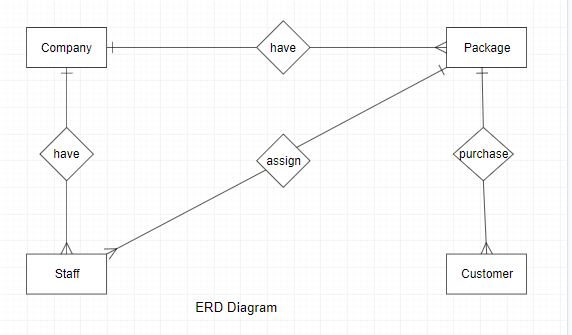


Figure 1 ERD of Textual Diagram

# 2. Normalization of Figure 1

## 2.1. Assumption

* In the normalization destination-id has been assumed as repeating group.

The following normalization of Package Record:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Package ID | Package Name | Destination | Total No of Days | Difficulty |
| LK25A | ABC | Annapurna Base Camp | 7 | Moderate |
| UI32A | Ghandruk | Ghandruk, Pokhara | 4 | Moderate |
| NB34G | Everest Short Trek | Lukla, Khumjung | 4 | Hard |

Table 1Table of Package Record

**UNF**

Package (package-id, package name, total no of days, difficulty, {destination-id, destination})

**1NF**

* **Removing Repeating Group**

**Tables**

Package-1(**package-id**, package name, total no of days, difficulty)

Package-Destination-1(**package-id, destination-id**, destination)

**2NF**

* **Removing Partial Dependency**

package-id ->

package-id, destination-id->

destination-id-> destination

**Tables**

Package-2(**package-id**, package name, total no of days, difficulty)

Package-Destination-2(**package-id, destination-id**)

Destination-2(**destination-id**, destination)

**3NF**

* **Removing Transitive Dependency**

Since there is not transitive dependency. It is in 3NF.

Package-3(**package-id**, package name, total no of days, difficulty)

Package-Destination-3(**package-id, destination-id**)

Destination-3(**destination-id**, destination)

# 3. Normalization of Figure 2

## Assumption

The following are the assumptions for the normalization of figure 2:

* Every Tour Package will have its own package id.
* Every package has number days to travel. So the day and package id are depending to each other.
* In every package it will have many activities which is identified by activities id. So the activity id is depending on package id and day.
* Travel Mode depends on activities.

**UNF**

**Tracking-Record** (**package-id**, package-name, start-date, end-date, tour-guide {day, travel-details {activities-id, activities, travel-mode, status}, difficulty-mode})

**1NF**

* **Removing Repeating Groups**

**Tracking-Record1**(**package-id**, package-name, start-date, end-date, tour-guide)

**PackageDays1**(**package-id**, **day**, travel-details, difficulty-mode)

**PackageActivity1**(**package-id**, **day**, **activity-id**, activities, travel-mode, status)

**2NF**

* **Removing Partial Dependency**

**package-id ->**

**package-id, day ->** travel-details, difficulty-mode

**package-id, day, activity-id ->** travel-mode, status

**Day ->**

**Activity\_id ->** activities

**Tracking-Record2**(**package-id**, package-name, start-date, end-date, tour-guide)

**PackageDays2**(**package-id**, **day**, travel-details, difficulty-mode)

**PackageActivity2**(**package-id**, **day**, **activity-id**, travel-mode, status)

**Activity2**(Activity-id, Activities)

**3NF**

* Since there is no transitive dependency, So the final tables are in 2NF

**Tracking-Record3**(**package-id**, package-name, start-date, end-date, tour-guide)

**PackageDays3**(**package-id**, **day**, travel-details, difficulty-mode)

**PackageActivity3**(**package-id**, **day**, **activity-id**)

# 3. ERD of Figure 1 and Figure 2

