**1NF:**

1. Each table cell contains a single value (atomic value).
2. Each record is unique.

***Tbl\_employeeLeaves***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **employeeID (PK)** | **empName** | **designation** | **officeName** | **dateOfFill** | **leaveType** | **leaveFromDate** | **leaveFromTime** | **leaveToDate** | **leavetoTime** | **leaveReason** | **leaveAddress** | **leaveContactNo** | **leaveProcessDate** | **leaveStatus** | **leaveProcessedBy(FK)** |
| 1 | Ali Raza Khan | Shift Incharge | Site2 | 25/04/2019 | Short | 25/04/2019 | 15:00 | 25/04/2019 | 17:00 | Work at Home | Karachi | 3001234567 | 27/04/2019 | Rejected by Shift Manager | 2 |
| 2 | Saad Malik | Admin | Head Office | 25/04/2019 | Short | 25/04/2019 | 9:00 | 25/04/2019 | 10:30 | Traffic Jam | Karachi | 3451234567 | 27/04/2019 | Accepted | 3 |
| 1 | Ali Raza Khan | Shift Incharge | Site2 | 28/04/2019 | Full | 27/04/2019 |  | 27/04/2019 |  | Visit to Hospital | Karachi | 3001234567 | 30/04/2019 | Accepted | 2 |
| 1 | Ali Raza Khan | Shift Incharge | Site2 | 29/04/2019 | half | 29/04/2019 |  | 29/04/2019 |  | Visit to Hospital | Karachi | 3001234567 | 5/5/2019 | Accepted | 2 |
| 1 | Ali Raza Khan | Shift Incharge | Site2 | 28/05/2019 | half | 28/05/2019 | 13:00 | 28/05/2019 | 15:00 | Work at Home | Karachi | 3001234567 | 29/05/2019 | Rejected by Shift Manager | 2 |
| 2 | Saad Malik | Admin | Head Office | 28/05/2019 | Full | 29/05/2019 |  | 29/05/2019 |  | Personal Work | Nawwab Shah | 3451234567 | 29/05/2019 | Accepted | 3 |
| 3 | Saif | Admin | Head Office | 29/05/2019 | Full | 29/05/2019 |  | 29/05/2019 |  | Wedding ceremoney | Hyderabad | 221234567 | 29/05/2019 | Accepted | 2 |

***employeeLeaves (employeeID, empName, designation, officeName, dateOfFill, leaveType, leaveFromDate,* leaveFromTime *, leaveToDate,* leavetoTime *,leaveReason, leaveAddress, leaveContactNo, leaveProcessDate, leaveStatus, leaveProcessedBy),***

**2NF:**

Below table is already in 1NF. Secondly, single column primary key (leaveID). If we divide the table, One show leave request’s details and other shows employee records.

***Tbl\_employeeLeaverequests***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **employeeID (FK)** | **dateOfFill** | **LeaveID(PK)** | **leaveType** | **leaveFromDate** | **leaveFromTime** | **leaveToDate** | **leavetoTime** | **leaveReason** | **leaveAddress** | **leaveContactNo** | **leaveProcessDate** | **leaveStatus** | **leaveProcessedBy** |
| 1 | 25/04/2019 | 1 | Short | 25/04/2019 | 15:00 | 25/04/2019 | 17:00 | Work at Home | Karachi | 3001234567 | 27/04/2019 | Rejected by Shift Manager | 2 |
| 2 | 25/04/2019 | 2 | Short | 25/04/2019 | 9:00 | 25/04/2019 | 10:30 | Traffic Jam | Karachi | 3451234567 | 27/04/2019 | Accepted | 3 |
| 1 | 28/04/2019 | 3 | Full | 27/04/2019 |   | 27/04/2019 |   | Visit to Hospital | Karachi | 3001234567 | 30/04/2019 | Accepted | 2 |
| 1 | 29/04/2019 | 4 | half | 29/04/2019 |   | 29/04/2019 |   | Visit to Hospital | Karachi | 3001234567 | 5/5/2019 | Accepted | 2 |
| 1 | 28/05/2019 | 5 | half | 28/05/2019 | 13:00 | 28/05/2019 | 15:00 | Work at Home | Karachi | 3001234567 | 29/05/2019 | Rejected by Shift Manager | 2 |
| 2 | 28/05/2019 | 6 | Full | 29/05/2019 |   | 29/05/2019 |   | Personal Work | Nawwab Shah | 3451234567 | 29/05/2019 | Accepted | 3 |
| 3 | 29/05/2019 | 7 | Full | 29/05/2019 |   | 29/05/2019 |   | Wedding ceremoney | Hyderabad | 221234567 | 29/05/2019 | Accepted | 2 |

***employeeLeaverequests (employeeID, dateOfFill,* LeaveID(PK), *leaveType, leaveFromDate,* leaveFromTime *, leaveToDate,* leavetoTime *,leaveReason, leaveAddress, leaveContactNo, leaveProcessDate, leaveStatus, leaveProcessedBy),***

***Tbl\_employees***

|  |  |  |  |
| --- | --- | --- | --- |
| **employeeID(PK)** | **empName** | **designation** | **officeName** |
| 1 | Ali Raza Khan | Shift Incharge | Site2 |
| 2 | Saad Malik | Admin | Head Office |
| 3 | Saif | Admin | Head Office |

***employees (employeeID, empName, designation, officeName),***

3NF: Further divided above tables to be in 3NF as they are already in 2NF and have no transitive functional dependencies.

***Tbl\_employeeLeaveStatus***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **employeeID(FK)** | **leaveID(PK)** | **leaveProcessDate** | **leaveStatus** | **leaveProcessedBy(FK)** |
| 1 | 1 | 27/04/2019 | Rejected by Shift Manager | 2 |
| 2 | 1 | 27/04/2019 | Accepted | 3 |
| 1 | 2 | 30/04/2019 | Accepted | 2 |
| 1 | 3 | 5/5/2019 | Accepted | 2 |
| 1 | 3 | 29/05/2019 | Rejected by Shift Manager | 2 |
| 2 | 2 | 29/05/2019 | Accepted | 3 |
| 3 | 2 | 29/05/2019 | Accepted | 2 |

***employeeLeavestatus (employeeID,* LeaveID(PK), *leaveProcessDate, leaveStatus, leaveProcessedBy),***

***Tbl\_employeeLeaverequests***

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **employeeID(FK)** | **leaveID(PK)** | **dateOfFill** | **leaveType** | **leaveFromDate** | **leaveFromTime** | **leaveToDate** | **leavetoTime** | **leaveReason** | **leaveContactNo** |  |
| 1 | 1 | 25/04/2019 | Short | 25/04/2019 | 15:00 | 25/04/2019 | 17:00 | Work at Home | 3001234567 |  |
| 2 | 1 | 25/04/2019 | Short | 25/04/2019 | 9:00 | 25/04/2019 | 10:30 | Traffic Jam | 3451234567 |  |
| 1 | 2 | 28/04/2019 | Full | 27/04/2019 |   | 27/04/2019 |   | Visit to Hospital | 3001234567 |  |
| 1 | 3 | 29/04/2019 | half | 29/04/2019 |   | 29/04/2019 |   | Visit to Hospital | 3001234567 |  |
| 1 | 3 | 28/05/2019 | half | 28/05/2019 | 13:00 | 28/05/2019 | 15:00 | Work at Home | 3001234567 |  |
| 2 | 2 | 28/05/2019 | Full | 29/05/2019 |   | 29/05/2019 |   | Personal Work | 3451234567 |  |
| 3 | 2 | 29/05/2019 | Full | 29/05/2019 |   | 29/05/2019 |   | Wedding ceremoney | 221234567 |  |

***employeeLeaverequests (employeeID,* LeaveID(PK), *dateOfFill, leaveType, leaveFromDate,* leaveFromTime *, leaveToDate,* leavetoTime *,leaveReason, leaveAddress, leaveContactNo),***

***Tbl\_employees***

|  |  |  |  |
| --- | --- | --- | --- |
| **employeeID(PK)** | **empName** | **designation** | **officeName** |
| 1 | Ali Raza Khan | Shift Incharge | Site2 |
| 2 | Saad Malik | Admin | Head Office |
| 3 | Saif | Admin | Head Office |

***employees (employeeID, empName, designation, officeName),***