**SQL Job Preparation Assignment 1**

1. **Table DEPT:**

|  |  |
| --- | --- |
| DEPTNO(PK) | DNAME |
| 10 | AC |

**Table EMP:**

|  |  |  |
| --- | --- | --- |
| EMPNO | ENAME | DEPTNO(FK) |
| 101 | ROCK | 10 |
| 102 | JACK | 10 |
| 103 | MARK | 10 |
| 104 | JERRY | 10 |

What is the difference between the parent and child tables, and why?

Sol: - Table DEPT is parent table which has Primary Key (PK) and table EMP is the child table which has Foreign Key (FK).

In DEPT table there is DEPTNO(PK) which has UNIQUE and NOT NULL values so there will be no duplicate entries. While, in EMP table there is DEPTNO(FK) which indicates that, it consists of values of parent table.

2. What are the four components of a database management system?

Sol: - There are four main components of DBMS.

1. Data
2. Hardware
3. Software
4. Users

3. What is the distinction between SQL and SQL plus?

Sol:

|  |  |
| --- | --- |
| SQL | SQL PLUS |
| It is a language used to communicate with oracle server to access the data in it. | It will recognize as SQL statement and send them to server. |
| It is based on ANSI SQL | It is based on Oracle proprietary |
| It uses functions to perform some formatting. | It uses commands to format the data |

4. What is the definition of normalization?

Sol: - Normalization is the process of organizing a database to reduce redundancy and improve data integrity. It divides the larger table into smaller and links them using relationships. There are 5-6 NF (Normalization Form). 3NF or BCNF is enough for making good Database.

5. Give examples of 1NF, 2NF, 3NF, and BCNF.

Sol: -

1NF: - A relation is in 1NF if it contains an atomic value means Eliminate Repeating Groups.

2NF: - A relation will be in 2NF if it is in 1NF and all non-key attributes are fully functional dependent on primary key means Eliminate Partial Functional Dependency

3NF: - A relation will be in 3NF if it is in 2NF and no transition dependency exists means Eliminates Transitive Dependency.

BCNF: - A strong definition of 3NF is known as Boyce Codd’S normal form.

**Demonstration**

**Original Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **EMP\_ID** | **EMP\_NAME** | **EMP\_PHONE** | **EMP\_STATE** |
| 375 | Kishan | 8274837825,5287384728 | GJ |
| 376 | Nikita | 9440012345 | CG |
| 384 | Gayathri | 9545375384,9040904070 | AP |

**1NF Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **EMP\_ID** | **EMP\_NAME** | **EMP\_PHONE** | **EMP\_STATE** |
| 375 | Kishan | 8274837825 | GJ |
| 375 | Kishan | 5287384728 | GJ |
| 376 | Nikita | 9440012345 | CG |
| 384 | Gayathri | 9545375384 | AP |
| 384 | Gayathri | 9040904070 | AP |

**2NF Table Emp\_table mobileNo\_ Table**

|  |  |  |
| --- | --- | --- |
| **EMP\_ID** | **EMP\_NAME** | **EMP\_STATE** |
| 375 | Kishan | GJ |
| 376 | Nikita | CG |
| 384 | Gayathri | AP |

|  |  |
| --- | --- |
| **EMP\_ID** | **EMP\_PHONE** |
| 375 | 8274837825 |
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| 375 | 5287384728 |
| 376 | 9440012345 |
| 384 | 9545375384 |
| 384 | 9040904070 |

**3NF Emp\_Name Emp\_States mobileNo\_table**

|  |  |
| --- | --- |
| **EMP\_ID** | **EMP\_NAME** |
| 375 | Kishan |
| 376 | Nikita |
| 384 | Gayathri |

|  |  |
| --- | --- |
| **EMP\_ID** | **EMP\_STATE** |
| 375 | GJ |
| 376 | CG |
| 384 | AP |