**2. There is one database. Let’s say it is hosted locally and one of the team members migrates it to AWS or GCP. How can one confirm that the copied data is the same as the original data ? What would be the check points ?**

**Imagine that data from table is of the form : List>**

Answer :

When migrating a database from a local environment to a cloud platform like AWS or GCP, it is essential to verify the integrity and accuracy of the copied data to ensure a successful migration. Here are some checkpoints and steps you can follow to confirm that the copied data is the same as the original data:

**Data Size Verification:** Check the total size of the data in the source database and compare it with the size of the data in the target database. This can give you a rough idea if all the data has been successfully migrated.

**Record Counts:** Compare the total record count of each table in the source and target databases. Ensure that the number of records matches for each table.

**Data Sampling:** Select a sample set of records from each table in the source and target databases. Compare the data from these samples to confirm that they match.

**Checksums or Hashing:** Calculate checksums or hashing values for data in each table (or a subset of data) in both the source and target databases. Compare the checksums or hashing values to ensure that the data is identical.

**Column Mapping:** Check the mapping of columns in the source and target databases to ensure that data has been migrated to the correct columns.

**Data Type Mapping:** Verify that data types in the target database match those in the source database. For example, ensure that data is not truncated due to smaller data types in the target.

**Constraints and Indexes:** Check that constraints (e.g., primary keys, unique constraints) and indexes have been migrated correctly and are working as expected.

**Referential Integrity:** If there are foreign key relationships between tables, verify that the referential integrity has been maintained in the target database.

**Special Characters and Encoding:** Ensure that special characters and encoding have been handled correctly during the migration.

**Data Validation Queries:** Write and execute specific SQL queries to validate the data between the source and target databases. For example, check that the sum, average, or other aggregate functions return the same results in both databases.

**Data Integrity Tests:** Design and execute data integrity tests that verify the correctness of the data in the target database.

By following these checkpoints and performing thorough testing, you can confirm that the data in the target database is the same as the original data in the source database.

**NOTE : Code for the above question is provided separately.**