Oracle Understand TEMP Tablespace with Simple Example

What is TEMP Tablespace?

The **Temporary Tablespace** (often named TEMP) is a special area Oracle uses **when it needs extra working space** for certain operations - just like your computer uses a *temporary folder* or *RAM* for processing tasks.

It's **not for storing permanent data**, only for short-term operations that happen while queries run.

Think of it Like This:

When Oracle executes a big SQL query, it might need to:

- **Sort** a large number of rows
- **Join** large tables
- **Group or order** results (like GROUP BY, ORDER BY)
- **Create indexes**
- **Use Global Temporary Tables**

If there isn't enough memory (PGA/SGA) to hold all that data, Oracle temporarily writes some of that work to the **TEMP tablespace**.

After the query finishes - Oracle **automatically deletes** everything from TEMP.

Example (Real-life Analogy)

- Imagine you're organizing a huge set of documents (your database).
  Your desk (RAM) has limited space.
  When it overflows, you start using the floor as *temporary space* to sort things out.
- That "floor space" = **TEMP tablespace**
- You don't keep papers there forever — you just use it while working.

Example in Oracle

Say you run a query:

SELECT * FROM orders ORDER BY amount DESC;

If orders has 10 rows - Oracle sorts it in memory.

If it has **10 million rows**, Oracle will **offload** the sorting to the **TEMP tablespace**.

What's Inside TEMP?

- Temporary segments used for sorting, hashing, or joins
- Data for operations that exceed available memory
- It's **automatically managed** - you don't manually insert or delete data from it

Check TEMP Tablespace in Your DB

SELECT tablespace_name, contents FROM dba_tablespaces WHERE contents = 'TEMPORARY';

Output Example:

```
TABLESPACE_NAME          CONTENTS
TEMP                     TEMPORARY
```

To see the actual temp file:

SELECT tablespace_name, file_name FROM dba_temp_files;

Example Output:

```
TABLESPACE_NAME          FILE_NAME
TEMP                     /u01/app/oracle/oradata/ORCL/temp01.dbf
```

Summary

Concept	Explanation
TEMP tablespace	Used for temporary storage during query execution
Stores	Sorts, joins, groupings, and intermediate query data
Data persistence	Data is deleted automatically after the query ends
Analogy	Like your computer's temporary workspace (scratchpad)
Default name	TEMP

In Simple Words:

The **TEMP tablespace** is Oracle's **scratchpad** –

- Used when queries are too big to fit in memory.
- It stores temporary sorting or joining data and clears it automatically once the work is done.