# Reindex+vacuum+analyze vs vacuum full:-

## 1. `REINDEX + VACUUM + ANALYZE`

This option is **non-blocking**, and here's what it does:

`VACUUM`: Cleans dead tuples but doesn't shrink the table's disk usage.

`REINDEX`: Rebuilds indexes that may have become **bloated** due to dead tuples.

`ANALYZE`: Refreshes statistics for the query planner to make better decisions.

### ✔ Advantages:

**Non-blocking**: The table is still accessible, and you can continue querying while the maintenance is being done.

**No table lock**: It doesn't require an exclusive lock on the table, so the operation can be done with minimal disruption.

**Rebuilds indexes**: Rebuilding the indexes can directly improve the performance of queries like yours, which rely on efficient index usage.

### ✖ Disadvantages:

**Does not shrink the table**: The dead rows will remain on disk, occupying space.

**May still leave some bloat**: Depending on the level of bloat, this may not be enough for extreme cases of inefficiency.

## 2. `VACUUM FULL`

`VACUUM FULL` reclaims disk space by completely rewriting the table, removing dead tuples, and reducing its size on disk. It also rebuilds the indexes as part of the process.

### ✔ Advantages:

**Fully reclaims disk space**: It will **shrink the table** and reduce disk usage, which is crucial when there are significant dead tuples.

**Improves performance significantly**: For tables with lots of dead tuples, `VACUUM FULL` will give a much better performance improvement compared to just a regular `VACUUM`.

**Rebuilds both the table and indexes**: It can be highly effective in fixing bloated indexes as well as the table itself.

## ✖ Disadvantages:

**Exclusive lock on the table**: The table will be **locked** during the operation, meaning **no read/write** operations can occur. This could lead to downtime, depending on the size of the table and the workload.

**Time-consuming**: If the table is very large, it could take a long time to complete.

## Which Option is Better?

**In your case**, since you have a large table with significant bloat (5 crore dead tuples), and you're facing **performance issues**, here's what I recommend:

1. **If you can afford downtime** or perform the operation during a **maintenance window**, `VACUUM FULL` will give the best results. It will clean the table and rebuild the indexes effectively, providing **maximum performance gains** for future queries.

2. **If you need to minimize downtime** or avoid locking the table for too long, then `REINDEX + VACUUM + ANALYZE` is a good alternative. This will help clean up the table and indexes without requiring an exclusive lock on the table, but it **won't shrink** the table as effectively as `VACUUM FULL`.

## Recommendation:-

If **performance is a priority** and you can schedule a maintenance window, `VACUUM FULL` is the best option.

If **availability is critical** and you need to avoid downtime, start with `REINDEX + VACUUM + ANALYZE`, and then follow up with a `VACUUM FULL` when possible.