**Too many query rows 50001**

Number of rows that can be returned by a SOQL query is limited to 50K, If our query retrieves more than 50K records then we see this expectation.

Exception – First error: Too many query rows: 50001

**Ways to avoid: –**

Where Clause: Its always good and recommended to filter the records specific to what’s needed instead of querying all the records.

Limit: Use limit to restrict the number of records returned to 50K.

Batch: Use Batch Class if you expect query to return more than 50K records.

### Problem:

You get this exception message on a simple aggregate query like this.  
  
Select Status from Case GROUP BY Status - FAILS  
  
You try to use a limit clause but the query still fails.  
  
Select Status from Case GROUP BY Status LIMIT 1000 - STILL FAILS

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### Reason:

Even though you may use a limit clause, aggregate queries will have to touch all records in the database. If you have less than 50000 Cases you would not receive this error message.

### Solution:

Couple of probable solutions.

1. Try to limit query results using a WHERE clause.
2. If using this on a visualforce page and you do not perform any DML (insert, update etc) from the page, set readOnly=true on the apex:page tag.
3. If using this on a visualforce page and you need to perform DML operations, use @RemoteAction and @ReadOnly on your apex class and deal with the results using javascript. [Example link.](https://developer.salesforce.com/docs/atlas.en-us.pages.meta/pages/pages_js_remoting_example.htm)
4. ReadOnly mode restricts you from DML Operations, calls to System.Schedule, Sending an emails, calls to @Future annoted methods.

**ReadOnly Mode Blocks you from performing the following operations within the request**

  \*    DML operations

  \*    calls to System.schedule,

  \*    calls to methods annotated with @future

 \*  sending emails.