**Ecommerce Database Crash Recovery Documentation**

A database's transactions (or units of work) may be abruptly terminated. The database is left in an inconsistent and useless condition if a failure takes place before all of the changes that are a part of the unit of work are finished, committed, and written to disc. The procedure used to restore the database to a consistent and functional condition is known as crash recovery. This is accomplished by undoing transactions that have already been committed and finishing those that were in progress when the crash happened.

The database may be left in an inconsistent state if the database or database manager malfunctions. The database's information may have been altered by transactions that were unfinished when they failed. It's also possible that the database lacks updates made by transactions that succeeded before the failure but were not yet flushed to disc. To undo partially completed transactions and write changes to finished transactions that had previously only been made in memory, a crash recovery operation must be carried out.

Conditions that can necessitate a crash recovery include:

* A machine power outage that causes the database manager and any attached database partitions to crash is one scenario that may call for a crash recovery.
* A hardware issue with the CPU, RAM, storage, or network.
* A major operating system issue that results in an erroneous shutdown of the Db instance

MySQL workbench has the feature to import all instances of a database to a local server at regular intervals. This tool was used to schedule the automatic export of the Ecomm database’s current state at the end of each business day. In a scenario where there is data corruption, we have the capacity to roll back the database to a previous state depending on how far the corruption spreads.

This MySQL feature has been implemented on the Ecomm database and here are sample images of one of the timed backups taking place.

**Image of a single export of Ecomm DB:**

This image simulates a timed export of the Ecomm DB being saved to a local host via the MySQL database management tool. This way there are backups created for each day.

**Img 1.1.**

Graphical user interface, text, application, email

Description automatically generated

This image simulates the process of restoring one of the backup dumps for the previous day. You can see all the tables in the Ecomm website is referenced in this.

**Image of backup being imported to server.**

Graphical user interface, text, application

Description automatically generated