# Project Phase-4

In this phase, you will implement the support for updates on a horizontally fragmented relation.  And support for a two-phase commit protocol for ensuring atomicity and durability of the update operation.

## Update Operation:

Map the update operation in global relation to updating operations on each of the horizontal fragments. You need to implement atomic execution of transactions consisting of these updates. It consists of sending the corresponding SQL update statement to each of the horizontal fragment sites.

Use four sites for storing four horizontal fragments.

## Two-phase Protocol:

The two-phase protocol will support the atomic execution of the update operations across sites. You need to implement the coordinator and participant code.

After the update operation is initiated or sent to each site by the coordinator, the coordinator starts the 2PC. Each of the sites participates in it and comes to the final global commit or global commit decision.  The log records are stored at all sites, respectively, for the coordinator and participant.  The logs on different sites can be recorded in relation tables, if you want to do so.

The details are in section 12.4.2 of the textbook, and the procedure for the protocol is in Algorithm 12.1 on page 433 and Algorithm 12.2 on page 435.

## Deliverables:

A zip file teamName_phase4.zip containing all the codes.

## Evaluation:

The protocol should work for both commit cases and abort cases. In abort, you kill one of the participant transaction processes (application) and show how the global abort happens. We may check the logs, so store them accordingly.

**Deadline - 11:59 pm, 19th April 2022**

**NOTE:** You can do phase IV independently of phase III. So, start working and submit.