Assignment  
Create a distributed heterogeneous database environment comprising three sites with three different participating database platforms, and at least two different operating systems. Use the above environment to demonstrate your grasp of fragmentation and reconstruction.

Think of a domain area comprising of at least four distributed relations. Write out your applications/reports and use them to perform fragmentation. Come up with appropriate query access frequencies of your choice. Allocate the fragments by implementing them physically in the participating databases. Choose one of the sites to be the decision site and perform reconstruction using either views, functions, stored procedures or any other technique.

## Breakdown

* 3 sites with 3 different participating database platforms, and at least 2 different OSs

|  |  |  |
| --- | --- | --- |
| **3 Sites / nodes / machines** | **3 different db platforms** | **At least 2 different OSs** |
| Kevin’s PC | SQLite | Windows |
| Staicy’s PC | MySQL | Linux |
| a 3rd machine  *\*perhaps a remote server hosted from DigitalOcean account.* | PostgreSQL | Linux |

*\*This being a distributed database course (meaning networking is involved coz databases are being built over a networked system), I’m not sure whether I can use WSL or a VM, as the databases will be on the same laptop but there won’t be that aspect of communicating via a network – different IP addresses. Though WSL can be used during developing, coz when the DBs are communicating the IP address for all the nodes hosting the DBMSs (which will just be only mine) is going to be 127.0.0.1*

* Domain Area – **Ecommerce**

|  |  |
| --- | --- |
| **Relation / Table** | **Possible Fields** |
| Inventory | id, … |
| Orders | id, … |
| Customers | id, … |
| Suppliers | id, … |

* Possible Backstory

The company ABC is an online retailer that sells a variety of products, such as clothing, electronics, books, and home appliances. ABC wants to use a distributed database to store and manage its inventory, orders, customers, and suppliers across different regions and countries. You have been hired as a consultant to design and develop the distributed database.

* Possible Applications

1. Application 1 - Find the name and price of the cheapest product in each category
2. Application 2 - Find the email and address of the customers who have ordered more than 10 times
3. Application 3 - Find the total number of products in stock for each supplier