**Group Assignment 6**

**We are choosing the Paypal.com**

1. **Which locking strategy is most appropriate for your organization’s database, optimistic locking or pessimistic locking?**

PayPal is a way to send fast money online. It conducts some concurrent transactions with some users, all over the globe at any given time. Majority of these transactions involve frequent updates, inserts, and deletes. There may also be more than one user trying to update the same data simultaneously. For example, someone may try to transfer an amount to two e-commerce websites at the same time, which would be processed if adequate locking is not implemented. Since concurrency control issues may arise and should be proactively avoided, **it is advised to use the pessimistic locking**. These transactions happen in real time, and it is necessary to ensure that the table is locked before any transaction is made to avoid additional insert, delete or update anomalies. Also, it is essential to use the highest level of security in matters of money. One of the disadvantages of using pessimistic locking over-optimistic locking is that it may not be super-efficient concerning service time, but it saves on time which optimistic locking will lose in case of multiple conflicts in transactions, resulting in various rollbacks. An advantage of using pessimistic locking for PayPal is locking the participating account for exclusive use until a transaction is finished from that account.

1. **Which transaction isolation level should be used by default for your chosen organization’s relational database?**

We would use the serializable isolation level as none of the reads are allowed at this level. Pay pal would not let any of the reads because if two people having same pay pal account are trying to access the account to pay different bills, then the three reads would cause conflicts. For example, in the case of the phantom read if a customer has $ 2000 in his/her account and the customer is trying to pay two bills each worth $ 2000. Then, in this case, the bills worth $ 4000 will be paid with $ 2000 funds, and this will cause conflicts. Another example for not considering dirty read is when a business organization having one Pay pal account and this business organization has millions of customers attached to its account. In this case, when a customer has proceeded to make a purchase, and he has not committed the purchase but when another customer checks the account amount he sees a deducted amount of detectable worth the investment of the first customer. But, the first customer has not made the purchase. Hence this will create a conflict if the first customer decides not to make a purchase. Therefore, we will proceed with serializable isolation level.