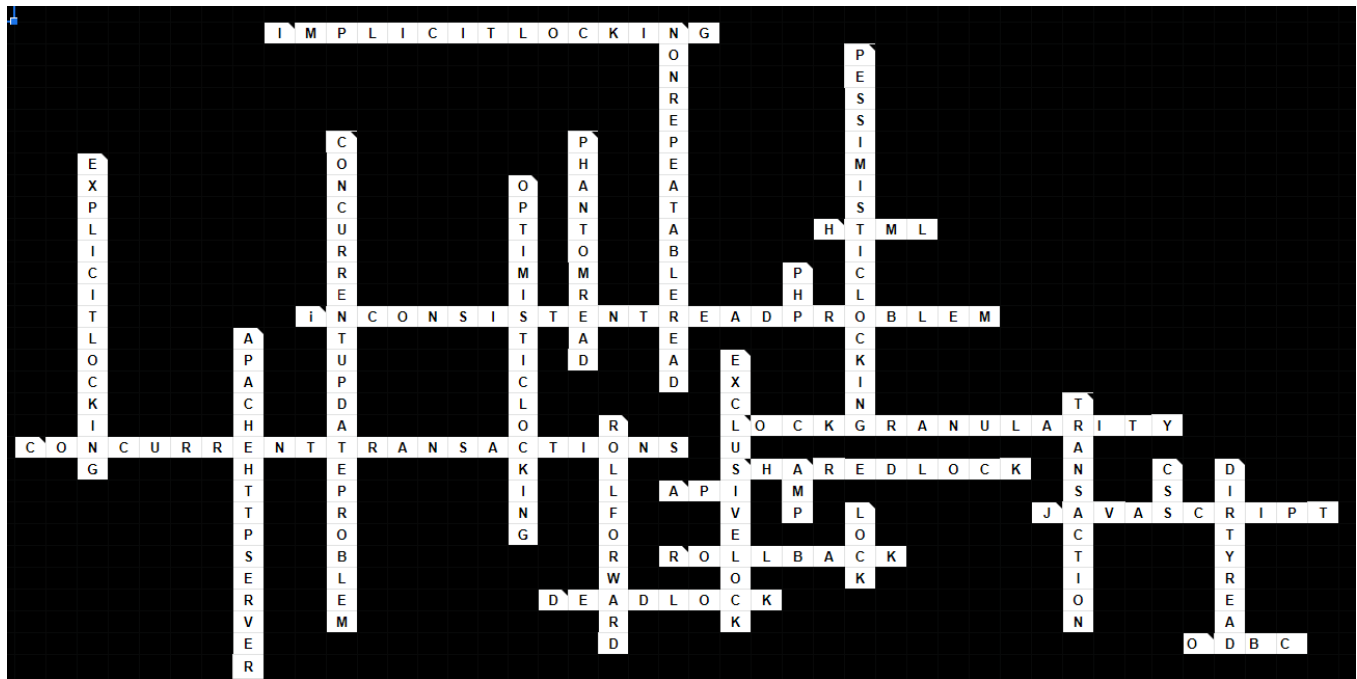


## Lab 7



### ACROSS

- 1 A lock that is automatically placed by the DBMS
- 8 A markup language used to create documents on the World Wide Web
- 10 In a transaction, a series of reads of a set of rows in which some of the rows have been updated by a second transaction and some of the rows have not been updated by that second transaction
- 15 The size of a locked data element
- 16 Two transactions that are being processed at the same time
- 17 A lock against a data resource in which only one transaction may update the data but many transactions can concurrently read that data
- 21 A set of program procedures or functions that can be called to invoke a set of services
- 23 A client-side programming language commonly used in web development
- 24 The process of recovering a database in which before images are applied to the database to return to an earlier checkpoint or other point at which the database is logically consistent
- 25 A condition that can occur during concurrent processing in which each of two (or more) transactions is waiting to access data that the other transaction has locked
- 26 A standard API by which programs can access and process databases, spreadsheets, text files, and other table-like structures in a DBMS-independent manner

### DOWN

- 2 The situation that occurs when a transaction reads data it has previously read and finds modifications or deletions caused by a committed transaction
- 3 A locking strategy that prevents conflict by locking data resources, processing the transaction, and then unlocking the resources

- 4 An error condition in which one user's data changes are overwritten by another user's data changes
- 5 The situation that occurs when a transaction reads data it has previously read and finds new rows that were inserted by a committed transaction
- 6 A lock requested by command from an application program
- 7 A locking strategy that assumes no conflict will occur, processes a transaction, and then checks to determine whether conflict did occur
- 9 A server-side scripting language used to interact with a DBMS
- 11 A popular Web server that runs on most operating systems
- 12 A lock on a data resource such that no other transaction can read or update that resource
- 13 A group of actions that is performed on the database automatically; either all actions are committed or none are committed
- 14 The process of recovering a database by applying after images to a saved copy of the database to bring it to a checkpoint or other point at which the database is logically consistent
- 18 solution stack used to run dynamic websites
- 19 Describes how HTML elements are to be displayed
- 20 Reading data that have been changed but not yet committed to the database
- 22 The process of allocating a database resource to a particular transaction in a concurrent-processing system