**ReadMe for implementation of JDBC as per “problem-description.doc”**

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* Following JAR file is used to implementing the JAVA Program which interfaces with the database: mysql-connector-java-5.1.44; on using this warning may appear which can be ignored as it should not be a hindrance in processing the ‘transfile’. If something worse happens then please consider using previous version of the JAR file.
* In order to have flexibility in setting and getting the initial mysql connection and ease of usage, a “config” file is used and provided along with the remaining files. In this file following fields can be updated based on the system/machine the code will be executed. There is no need to change anything in the java code as it will be handled all by itself.
  + dbusername - Current value in the file is ‘root’
  + dbpassword - Current value in the file is ‘root’
  + dbserver - Current value in the file is ‘localhost’
  + dbport - Current value in the file is ‘3306’
  + dbname - Current value in the file is ‘employeedata’
* As soon as the ‘main’ method is run, after compiling, from the ‘MainClass’ java file. The two relations/tables namely ‘employee’ and ‘worksfor’ is created as per the homework description which was provided along with integrity constraints. After that sql queries are processed based on each of the transaction present in the ‘transfile’. On complete processing of the ‘transfile’, the program drops the schema.
* The ‘transfile’ which was used by me to test the working of the code is provided in the project directory as a sample file.
* Instead of simply printing ‘error’ and displaying values from the tables, whatever the case maybe, in some situations specific messages will be displayed which may be more understandable to someone testing the code. For example –
  + If the transaction code other than 1 to 6 is present in the ‘transfile’ then instead of displaying ‘error’ the program will display “Invalid transaction code <incorrect code value> found in transfile”
  + If the transaction code is 6 then instead of simply displaying the names of employees, the program will display “Following employees have more than one direct managers - [EMP1, EMP2, . . .] or “No employees with more than one manager” as the case may be.
  + If the transaction code is 5 followed by an integer value (yyy here is considered as an integer for explanation) then the program will display “Following is the average salary (rounded off to the nearest integer value) of all the employees working directly under Manager ID: yyy – xxxxx”
  + If the transaction code is 4 followed by an integer value (yyy here is considered as an integer for explanation) then the program will display “Following is the average salary (rounded off to the nearest integer value) of all the employees working directly under Manager ID: yyy – xxxxx”
  + If the transaction code is 3 then instead of simply displaying the average salary of all the employees, the program will display “The average salary of all the employees is equal to xxxxx”
  + If the transaction code is 2 and 1 then it prints ‘done’ when there is successful execution of the query else it prints ‘error’
  + In transaction codes 3 and 6, which do not require additional fields to process the query, if any additional field is supplied in the ‘transfile’ then those fields will be ignored and query will be processed accordingly and following message will be prefixed with the appropriate message described earlier for both of these type of transactions – “Extra fields are encountered than required for transaction code <trans\_code>. Query is being processed after ignoring these extra fields.”
  + For transaction codes 1, 2, 4 and 5, if the additional fields is supplied in incorrect form or is missing in the ‘transfile’ then following message will appear “Remaining fields for transaction code <trans\_code> is either missing or is in invalid form”
  + In all other case, either ‘done’ or ‘error’ will be printed.

*Note 1: yyy and xxxxx are being used here for explanation and these represent integer values for manager id and avg salary respectively.*

*Note 2: <trans\_code> and <incorrect code value> will be substituted by the transcode in the particular line of ‘transfile.*

*Note 3: EMP1, EMP2 and so on are the names of employees*