**Lab: 8**

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| **Problem statement(s)**  **EX1:** Create an application that connects to the previous MySQL database and calculate the average spend. Add to the beginning of the ‘queryDatabase’ method add some code that will insert new values into the ‘orders’ table. Finally, print all customers who have spent over £20.  **EX2:** Create a class that can open, read and then insert the contents of a text file into the database.  **EX3:** Create a new security policy that denies permission for an application to read files. Furthermore, apply this policy to the application along with appropriate exception handling. |

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| **Program description(s)**  **EX1:** I created an application that can connect to a MySQL database using last week’s lab as a template and then calculated the average customer spend by getting the total spend divided by the number of customers. Finally, I added all customer IDs of people who spent over £20 to a set (to remove duplicates) and then used ‘containsKey’ to match the name using a foreach loop. I then got the customers who ordered over £20 using this ‘JOIN’ query: ‘"SELECT customers.name FROM orders INNER JOIN customers ON ((customers.custid=orders.custid) && (orders.price > 20.00));";’.  **EX2:** ‘InsertOrders’ class reads from the ‘orders\_2.txt’ file line by line using the ‘addRow’ method. It then constructs a query using the line and then executes ‘executeQuery’. Meanwhile, this whole method is wrapped in a try, catch block to catch the ‘FileNotFoundException’, ‘IOException’ and ‘SQLExcpetion’.  **EX3:**  I created a new class ‘DenyFilePermission’ which attempts to read from the ‘readTest.txt’ file. I then created a new policy file called ‘fileReadPolicy’ which does not give permission to read files. I then added this policy file to IntelliJ’s VM options and created a ‘Permission’ and ‘SecurityManager’ variable. The security manager will then check the permission and throw an ‘AccessControlException’ that will print “Read access denied.” To the console. |

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| **Test description**  Tried running with the MySQL database on and off and manually checking the orders over £20 with the text file. |
| **Known bugs**  - |
| **Possible improvements**  Sort the customers based on their average spend to see what your top customers are buying. |
| **Comments**  Using security policies was confusing. However, I think I have figured it out now. |
| **Extra credit**  Got orders of customers with less than £20 orders. |
| **References**  **-** |