**Diary – Darryl Murphy - djm749**

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| Date | 25/04/2015 |
| Action | Worked on building further entity classes. Wrote some short notes on the topic of CSV style database implementation. |
| Time Expected | 1.5 Hour. |
| Time Taken | 1 Hour. |
| Problems | Coding a fully-fledged CSV database is a lot of work. There is a lot of tedious functionality to be implemented. |
| Solutions | There are other solutions for database implementations. Some further research into embedded database systems could prove useful. |

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| Date | 26/04/2015 |
| Action | Continued research into database systems. SQLlite seems to be a popular choice for embedded systems. |
| Time Expected | 1 hour. |
| Time Taken | 2 hour. |
| Problems | SQLlite is C code. This could cause problems with the learnability of running a database with SQL/C++ |
| Solutions | Searched for some simple tutorials to be able to better understand how to code SQLite. SQLites interface is nowhere near as usable as java equivalents. |

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| Date | 29/04/2015 |
| Action | Some issues have been raised about GUI implementation and C++. I spend some time learning about QT and QML. It seems to be difficult to use QML as an object in a similar fashion to java swing. |
| Time Expected | 1 hour. |
| Time Taken | 1 hour. |
| Problems | Defining what is the best way to use QT as a gui while maintaining OOP styles. |
| Solutions | Searched for some simple tutorials to be able to better understand how to code SQLite. SQLites interface is nowhere near as usable as java equivalents. |

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| Date | 1/05/2015 |
| Action | Continued building entity classes for the backend of the program while productivity has slowed from the GUI side of things. |
| Time Expected | 1 hour. |
| Time Taken | 0.5 hour. |
| Problems | Its difficult to achieve real productivity without any database backbone. |
| Solutions | Continued experiments with SQLite to assess its feasibility for out software. We would need to figure out a way of converting the CSV output into insert SQL statements. |

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| Date | 1/05/2015 |
| Action | Informed group mates of success with SQLlite. Have put it forward to them as a replacement to the CSV database implementation. |
| Time Expected | 0.5 hour. |
| Time Taken | 1 hour. |
| Problems | Group mates are worried about learning a new software interface. |
| Solutions | Decided to put together a ‘crash couse’ c++ file to help them understand sql. |

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| Date | 5/05/2015 |
| Action | Built the crash course in sql file to show group tomorrow. Moving on to the issue of how to convert the csv files to sql insert scripts. |
| Time Expected | 2 hour. |
| Time Taken | 2.5 hour. |
| Problems | Finding the best way to explain concepts in sql cqn be difficult. |
| Solutions | Putting clear and concise comment in the code should help alleviate this. |

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| Date | 7/05/2015 |
| Action | Built a small java program to perform text processing on the excel csv files. |
| Time Expected | 2 hour. |
| Time Taken | 1 hour. |
| Problems | Don’t yet have tables to test insert statement on yet. |
| Solutions | Start building out tables for the flight System. |

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| Date | 10/05/2015 |
| Action | Finished building the entitly level tables(airport,route etc) for the database. Found many errors in the text processing(“” characters for example). |
| Time Expected | 2 hour. |
| Time Taken | 2.5 hour. |
| Problems | Some rows were inserting into tables and other were not. Need to re-write my test processing program. |
| Solutions | Re-write text processor. |

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| Date | 12/05/2015 |
| Action | Built login process. With ‘Staff’ table and SQL statements |
| Time Expected | 2 hour. |
| Time Taken | 2 hour. |
| Problems | SQL coding has a steep learning curve, and often does not throw helpful error. A lot of trial and error to improve this. |
| Solutions | More practice and building with SQL. |

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| Date | 14/05/2015 |
| Action | Started connecting SQL and the entity classes. This involves defining many getByX() functions. Eg getByID() |
| Time Expected | 4 hour. |
| Time Taken | 3.5 hour. |
| Problems | Coding large amountd of these types of functions can be vert tedious. Testing that these work properly can be difficult with C++. |
| Solutions | Use the sqlite command line tool to validate what is in the database. |

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| Date | 15/05/2015 |
| Action | Continue working on entity/SQL interfacing. Most classes now have create/delete functionality. |
| Time Expected | 2 hour. |
| Time Taken | 2.5 hour. |
| Problems | Finding the best way to explain concepts in sql cqn be difficult. |
| Solutions | Putting clear and concise comment in the code should help alleviate this. |

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| Date | 18/05/2015 |
| Action | In an effort to reclaim ‘sophistication marks’ that we will loose from not implementing a GUI, I experimented with a small airport weather application using an API. Very simple but works well. |
| Time Expected | 4 hr |
| Time Taken | 2hr |
| Problems | Compiling external libraries. Required using visual studio specifically or windows. Would require all group member to install external libraries |
| Solutions | Learn about linking libraries. |

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| Date | 20/05/2015 |
| Action | Start building search functionality. This requires using sql’s dateTime class To compare dates schedules. |
| Time Expected | 4hr |
| Time Taken | 3.5hr |
| Problems | The tables in sql were not built with datetime in mind, I have to rebuild the database. As well as re-process the csv files to re format dates that were provided to us. |
| Solutions | Research sqlLite datetime class. |

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| Date | 22/05/2015 |
| Action | Began implementing the booking controller class. This is one of the more difficult tasks in the system. It involves calling almost every entity class and compiling their data to achieve the goal. |
| Time Expected | 4hr |
| Time Taken | 4hr |
| Problems | Deciding the best way to deal with searching schedules |
| Solutions | Decided best way is to let user input a search using min date – maxdate. |

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| Date | 25/05/2015 |
| Action | Worked on booking functionality. In particular letting a user choose their services for a flight |
| Time Expected | 2 hr |
| Time Taken | 2hr |
| Problems | Storing data from sql to be used in other queries can be messy. |
| Solutions | Use SQL join table functions as much as possible to avoid redundant memory usage. |

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| Date | 27/05/2015 |
| Action | Refactored Booking fuction with the goal on enabling the user to confirm their order before committing the booking to the database. |
| Time Expected | 1.5hr |
| Time Taken | 1.5hr |
| Problems | Code was written messily. Frustrating to untangle and refactor for reuse. |
| Solutions | Design functions before beginning implementation. Had I thought about what I needed to achieve beforehand, I might not have been in this situation. |

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| Date | 30/05/2015 |
| Action | stared on architectural design. Much of the program has changed from when we submitted our design documents. Thus much needs to be re-written to line up with out current designs |
| Time Expected | 5hr |
| Time Taken | 4hr |
| Problems | Data dictionary did not line up with out actual implementation at all. |
| Solutions | Re-write data dictionary to bring it into line. |

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| Date | 1/06/2015 |
| Action | Finished Architectural design and data dictionary. Fixed minor bugs in our system. |
| Time Expected | 2hr |
| Time Taken | 2hr |
| Problems | Structure of code is messy, difficult to follow fault paths to find bugs. |
| Solutions | Too late to refactor. Just endure the frustrating bug finding process. |