

Reflective Journal (Name: Diong Chen Xi Student ID: 32722656)

Week 1

The first week has been quite enjoyable. I learnt about how numbers are processed in a computer as a 32 bit-floating point, how negative integers are stored in a computer, and a basic intro to message error detection. The mathematics was relatively easy to understand and the other concepts were easy to grasp as well, provided that I have watched the pre-recorded sessions by Dr. Tan. I've encountered a problem in ED where a fellow classmate asked about why do we multiply decimal numbers after the decimal point with 2 when converting a number from decimal binary. I did some research and eventually came up with my own explanation upon that topic.

Week 2

In the second week, all three core units have their teaching scope aligned on Boolean logic. I learned about how to simplify a Boolean equation using Boolean laws, interpreting data from truth tables, and how to read and plot a Karnaugh map. Having exposed to Boolean logic during my secondary school years, I found this topic not that challenging to comprehend and quite easy to keep up. The concept of K-maps is quite new to me, but after watching the pre-recorded lectures and practicing myself, I think that I have a solid grasp on the topic. I also tried out Quiz 1 to test my knowledge up to the current point. Through my errors in the quiz, it is evident that I am still unsure in data representation in computers. After relearning on the topic and reattempting the quiz again, I think that I have a good understanding of Week 2's learning materials.

Week 3

The third week is a challenging yet fruitful week. I gained knowledge in CPU architectures and the MARIE assembly language by self-studying the pre-lecture materials. Although it is an assembly language, I found out that MARIE is very different from the programming languages we use in the present day, as it has no built-in functions or much of the pre-set operators in the programming languages such as Java or Python. To me, constructing a program in MARIE language is quite challenging as it only uses simple instructions such

as Load, Store, Add, etc. After learning about the MARIE language, the people who invented such a language and those who invented programming language compilers have gained my utmost respect. Upon attempting Quiz 2 provided in Moodle, I have made minor errors in misunderstanding the question, but the problem is quickly resolved after asking Dr. Tan.

Week 4

The fourth week has been very intriguing. I learnt more about MARIE programming in how to program subroutines. This has helped me in completing some of the tasks in Assignment 1. However, it took me some time to pick up the concept of using Skipcond and programming subroutines as they differ from advanced programming languages such as Python, where a simple “for” loop or “while” loop will solve the problem. I also learnt about how memory is stored and assigned inside the RAM chips and they are not as simple as I originally imagined. After taking the first graded quiz in Moodle, I think that I have a clear understanding of the materials taught in weeks 1-3, and my blunders are only from my own carelessness. I will learn from my mistakes and be more attentive during quizzes so that I will not lose unnecessary marks in future examinations.

Week 5

The fifth week posed quite a challenge to me, as the lesson progressed onto the part about computer hardware, which I am unfamiliar with. After re-watching the pre-recorded lectures, I think that I have a decent understanding on the structure of the motherboard in a computer. I completed my assignment after a lot of retracing codes and debugging for the MARIE tasks as well. I think I have gained substantial knowledge on how to code with MARIE assembly language and also sharpened my logical thinking skills after finishing up the assignment. Up until this point, I think that this unit has provided me an insight into how computers work, both physically and digitally. I have gained a lot of knowledge in how information is processed and expressed in a computer as well. It has been an enjoyable experience so far and I hope that I can learn even more in the near future.