**COMP 2210 Assignment 3 Part 1**

Group 40

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September 19, 2015

**Abstract**

The purpose of this experiment is to determine the polynomial big-Oh time complexity of an unknown function. The function was ran with various multiples a problem size N from which a ratio of the times was used to determine the big-Oh time to be a polynomial of the 4th degree.

**1 Problem Overview**

The problem presented was to determine the big-Oh time complexity of an unknown function defined by a class named TimingLab with the unknown method named time. The class presented was constructed with the group number giving a potentially unique function based on said group number. The function was defined to have a polynomial time complexity. Through mathematical analysis, this implies that . Because of this relation, the polynomial time complexity of the function above is proportional to the variable k in .

**2 Experimental Procedure**