My name is Vaibhav Sharma and my student id is 200365101. I am enrolled in bachelor's of computer science in University of Regina. I am currently working as a Software developer at Canada Life under my Co-op work term one. I am interested in Data Structures and Algorithms and how they can be incorporated in bigger Application to optimize efficiency.

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April 11, 2019

Dr. Robert Hildernam

Co-op Coordinator

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Respected Dr. Hilderman,

The work term report is written on Algorithms and data structures for eight months work term. My position at Canada life is software developer which includes design, development and testing. A big portion of my duties are inclined toward system architecture which allowed me to research and learn about data structures and how

to optimize code to be more efficient. I also developed and maintained production application.

This report gives brief description of algorithms efficiency and running time. It discusses breath first and depth first traversal before it goes into searching and sorting algorithms.
Furthermore, my work term required me to manage and respond to ad-hoc request which increased my experience and interest in management.

This work term is written by me derived from my experience of work at Canada life.

Sincerely,

Vaibhav Sharma

Associate Software Developer

Canada Life

Table of Content

3. Bibliography

Executive Summary

This report discusses the importance of algorithms and data structure in Application design and efficiency of the program. They are the patterns for solving problems. Data structures are important because they show the way information is organised in a computer as they have a lot of effect on performance. All computers rely on fundamental data structures and algorithms. This report goes in depth for Searching and Sorting Algorithms including breadth first Traversal and Depth first Traversal. It also discusses shortest path algorithms including dijkstra , A* ans SSP. The report also touches on graphs and time and space complexity, looking into np-Hard problems. Furthermore, These algorithm a key for AI and BIG Data development where users extract the essential information most efficiently.