



# Determining The Shortest Paths from NATO Stations To Different Colleges in CLSU using DIJKSTRA's Algorithm

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## Abstract

In Mathematics and Computer Science, a graph is a structure made up of vertices or nodes and lines that connects them which are called edges. In this simple study, we represent the three (3) New Association of Tricycle Operators (NATO) stations and seven (7) colleges (excluding the College of Agriculture and the College of Fisheries) of the Central Luzon State University (CLSU) as vertices, and the roads that connect them as edges to obtain a graph representation of CLSU. The shortest paths going to the seven colleges in CLSU from the three NATO stations were then determined using the Dijkstra's Algorithm, limited only on the condition that a NATO driver has only one passenger or has more than one passenger but all of them are going to the same destination.

With this study, a NATO driver can save fuel and time by taking the shortest paths determined. The study also serves as a motivation in appreciating the applications of Mathematics in real life. For improvement, it is good to determine the shortest paths from a specific college going to every other college.

**Keywords:** Graph, Dijkstra's Algorithm, Shortest Path



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