

ABSTRACT

APPLICATION MAPPING SYSTEM USING THE SHORTEST PATH SEARCH ALGORITHM FOR ELECTRIC VEHICLE CHARGING STATION LOCATIONS

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Electric Vehicle Charging Station or EVCS is a facility used by electric vehicles to recharge their batteries. Unlike non-electric vehicle users, for electric vehicle drivers, the availability of charging stations is a significant concern. This is due to the limited number of EVCS in various cities and the fact that the locations of these charging stations are not conveniently located, making it difficult for electric vehicle users to find nearby charging stations. Based on this issue, researchers have attempted to provide a solution in the form of an application that can identify the nearest EVCS locations in public places from the user's current location. The developed application utilizes the Johnson algorithm to determine the closest distance between EVCS locations. The Johnson algorithm is one of the algorithms used to find the shortest path by combining two shortest path algorithms, namely Bellman-Ford and Dijkstra. It automatically determines the nearest charging station from the user's current location. After undergoing a series of tests and trials, this web-based application is capable of providing EVCS location information and displaying the nearest route for electric vehicle users.

Keywords: Johnson's algorithm, Bellman-Ford algorithm, Dijkstra's algorithm, website, EVCS.