

CHAPTER 3

SYSTEM DESIGN AND IMPLEMENTATION

This chapter describes the system design, and the flow of the system in details. Finally, the implementation of the system is explained in this chapter.

3.1 System Design and System Flow

The system design is implemented as the finding the shortest route using Travelling Salesman Problem (TSP) path. In the system, there are three or four processes that are finding hotel lists, finding nearest e-bike rental lists, finding the optimal route selected based on the selected pagodas and finding the nearest restaurants from the current location. This system calculates the distance from the current location to the selected pagodas which latitudes and longitudes are used from the database. Moreover, the system finds the distance from the current location to the restaurants from the database.

Firstly, this system will get the current location .And then, the user can choose pagodas or restaurants. The user can view the e-bike rental lists and hotel lists. If the user chooses the pagodas, this system will provide the efficient routes based on the current location. When the user searches the restaurants, this system shows the five nearest restaurants according to current location.

This system calculates the distance using Haversine formula. The haversine formula determines the great circle distance between two points on a sphere given their longitudes and latitudes. Haversine is very popular and frequently used formula when developing a GIS (Geographic Information System) application or analyzing path and fields. Moreover, this system finds the shortest route using the Travelling Salesman Problem base on the distance calculated by haversine formula. The Nearest Neighbor Algorithm is an approximate algorithm for finding a sub-optimal solution to the TSP. The nearest neighbor algorithm was one of the first algorithm used to determine a solution to the travelling salesman problem. This system is the best for visitors who are not familiar with Bagan. The visitors can view the hotel lists which are famous in Bagan. Therefore, they can save time and total cost.