Project creator : Mr. Benjapol Supornpong

Miss Panwasa Pasanae

Mr. Wannawong Boontalok

Mr. Tanakit Krabuansri

Project name : Web Application to Demonstrate Pedestrian Paths in Asiatique

Field of study : Computer Science

Faculty : Science and Technology

Raja Mangala University of Technology Phra Nakhon

Advisor : Ms. Thidawan Klaysri, Ph.D

Academic year : 2023

**Abstract**

Research’s main goal is to develop a web application for suggesting pedestrian paths to visit 7 historical destinations in Asiatique, tailing of King Rama V era. To suit an individual, a traveler can define stops number between 3 and 7, but any terminals cannot be revisited. The sightseer can travel to Asiatique by boat and/or by vehicle, and the options for arrival and departure can be the same.

First, we surveyed walking distances between a pair of destinations using Google map. Then, graph theory was applied to establish Asiatique pedestrian graph, a complete weighted graph using Gephi. After that, Dijkstra’s algorithm was used to find the shortest path, coded by Python. Finally, the web application was implemented, providing functionality to specify the terminals number and to select the transportation options for arriving and departing Asiatique. It also provides a function to download an outcome map, displaying name, location, distances among the destinations and the shortest walking path that can visit all the points. The web application was evaluated by 20 users, shown in very good level on average about 4.57. Its design and functionality were satisfied on average around 4.60 and 4.54 (from 5.00) respectively.

(Total 134 pages)

Keywords: web application, graph theory, shortest path, Dijkstra’s, Asiatique

Advisor