Project creator : Mr. Benjapol Supornpong
Miss Panwasa Pasanae
Mr. Wannawong Boontalok
Mr. Tanakit Krabuansri
Project name : Web Application to Suggest 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 application 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 for downloading an outcome map, displaying name, location 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