KF04 project report

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Indhold

1 Features

This chapter describes the features and functions, we have included in our Map of Denmark project, part 2, Spring 2011.

- Find shortest path
- Display path using blue highlighting
- Multiple pins
- Total distance
- Estimated travel time
- Bike or car route
- Remove a single pin by clicking
- Remove all pins by using GUI button

1.1 Find shortest route

Our map is able to calculate the shortest route between two points. This is done by clicking the map. Clicking the map places a pin at the clicked location. If the user clicks on another part of the map, our map will show the shortest route between those two locations, if possible.

1.2 Display path using blue highlighting

When the user has selected two or more locations, the map will show the shortest route highlighted in blue. The algorithm we use for finding this route is pretty fast, so a user will not feel annoyed by how long it takes.

1.3 Multiple pins

It is possible for a user to place multiple pins on the map. This is done in similarly to finding the shortest route between two points. When any number of pins are placed, the user can add additional ones. This will calculate the route between the latest two pins placed. The route shown will be from pin 1-¿2-¿3-¿4..

1.4 Total distance

Our Map of Denmark program calculates the total distance of the route found, a functionality that assists the end-user in planning their trip. This was relatively simple to implement, but adds a big functionality.

1.5 Estimated travel time

As with the total travel distance, our Map of Denmark calculates the estimated time it will take to travel the route found by our algorithm. This was relatively easy to calculate and is a huge benefit for the end user.

1.6 Bike or car route

It is possible for the user to choose between a car route and a bike route. The different options will make our algorithm consider what is possible to traverse for both cars and bikes. It will make sure not to show small paths for cars and not show highways for bikes.

1.7 Remove a single pin

To make it easier to use our Map of Denmark, we have it possible to remove a pin by clicking on the location it was placed. This makes it possible for the end user to clear up a tiny missclick without having to shut down the entire Map or clearing all the pins the user has placed.

1.8 Remove all pins

In addition to enabling the user to remove a single pin by clicking on it, we have also made it possible to remove all the pins currently placed. This can be done by either pressing the "c" key on the keyboard or by clicking the button on the graphical interface. This avoids the chore of clicking every single point in order to start a new route planning.

2 Implementation

This chapter describes our implementation of interesting methods and functions in our Map of Denmark project, part 2, Spring 2011.

2.1 Model

1. Hvordan model bruger findPath og gemmer det (og clearer) 2. Metoder til at udregne samlet afstand og køretid.

2.2 Dijkstra

1. Skrevet ud fra implementationen fra Algorithms men modificeret meget til vores benyttelse. IndexMinPQ er svagt modificeret fra Algorithms. 2. Beskrivelse generelt af Dijkstra. 2. Ændringer: KrakNode istedet for integers (dog bliver index stadig brugt i PQ), Statisk metode istedet for Objekt, Evaluator så man kan benytte forskellige prioriteringer.

2.3 A*

Måske undladt, kommer an på om vi får det med. Hvis det kommer med skal det være et relativt kort afsnit.

2.4 Control

2.5 Car/Bike routes

2.6 View

1. Tegning af pins og ekstra route. (Den ekstra route foregår på samme måde som selve kortet, men bliver tegnet til sidst).