Finding route between multiple points of interest

G. Drasidis, A. Tsiovoulos
March 16,2010
Greece

Map Representation

- Representation of the museum as a grid

  - Subdivision of museum's plan into small regular squares

  - Every square represented with coordinates in 2-D space, i.e in form of (x,y)

- Issue: tool to input data from database

  - Map showcases to specific squares

  - Showcases that cover more than a single square

Routes Options

- Two options for route construction

  - Static "predefined" routes

  - Dynamic route construction

- Static "predefined" routes based on

  - Thematic entities

  - Top exhibits

- Dynamic routes based on

  - Visitors single choices

 - Filtering information given by visitor(time, thematic/period interested in)

Static Routes

- Choose between 3 different predefined routes

- Pop-up explanation box, with info about the exhibit in current grid square

  - Text description

  - Photo of the exhibit

  - In case of a large showcase, description of main exhibits or grouping according to coordinates chosen
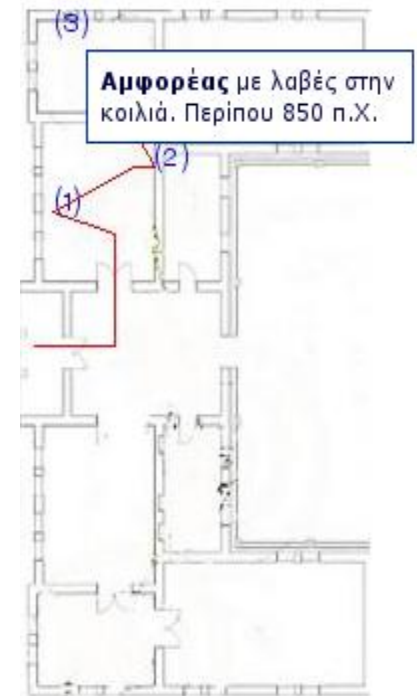
Static Routes

- Choose from 3 predefined routes

- Submit query

- Draw route on the map

Επιλογή Διαδρομής

○ Διαδρομή 1
○ Διαδρομή 2
○ Διαδρομή 3

Submit Query
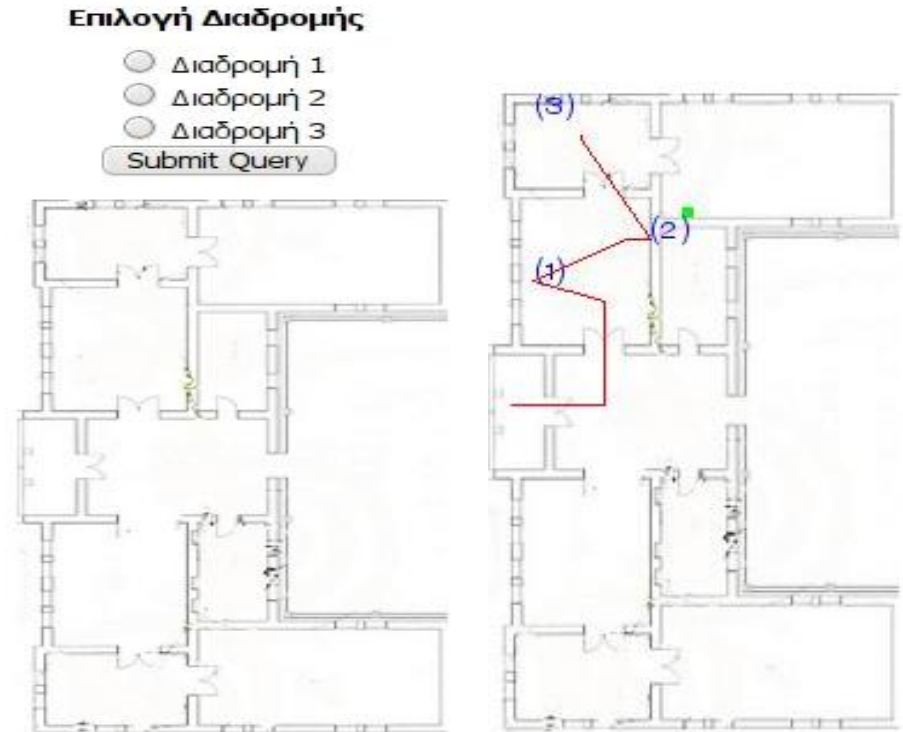
Static Routes

- On *mouse-over* show pop-up box with info about the exhibit

Dynamic Routes

- Given museum's plan encoded in a representation where paths and obstacles are defined, find shortest path between two points

- Use of the efficient shortest path algorithm, A*

☑ Exhibit 1
☑ Exhibit 2
☑ Exhibit 3
☑ Exhibit 4
☐ Exhibit 5
Submit

Dynamic Routes

- Input
  - 2-D array representing museum's plan, including obstacles, showcases according to grid constructed
  - A pair of point of interest chosen/extracted by visitor corresponding to start, end point
  - Alternatively a set of points, processed iteratively

- Output
  - A set of nodes, corresponding to grid nodes, in form of (x,y) coordinates,constructing shortest path connecting all points of interest

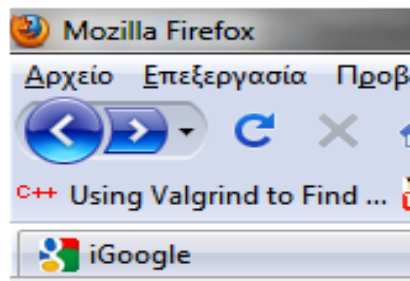- Output used as input to draw the route on the graphical representation of the map

Dynamic Routes