Mountain Bike Championship Information Processing Module

two-person project.

Deadline: 5.5.2014

Project Scope:

The production/storage of time-spatial information related to a bicycle race held in mountainous terrain and the extraction of related statistics

Querying vector and raster datasets in PostGIS and writing some functions on these datasets

Visualizing spatial data and viewing the verification of query results in QGIS

Project Details:

READİNG AND UNDERSTANDİNG THE FOLLOWİNG RESOURCES AND RUNNİNG THEM ON YOUR MACHİNE İS AN İMPORTANT MOTİVATİON FOR THE PROJECT:

- https://medium.com/symphonyis/postgis-a-real-world-example-f99eaedf1462

- https://www.crunchydata.com/blog/postgres-raster-query-basics

In addition to these preliminary works, we need to make the following changes and additions:

- Determination of the competition area and downloading the related DEM map and uploading it to PostGIS at an appropriate resolution

- Determination of the different starting and finishing points of the competition in the application.

- For at least 10 cyclists, similar to the second source, random location and route information should be generated. The random locations of the bicycles each minute should approach the target a bit more but with different routes.

- Determination of the competition result - who won or what place they came in.

- Determining how many ascents/descents each cyclist made along their route.

- Determining how many kilometers each contestant traveled and how many calories they burned.

- Determining the contestants located in a random polygon region at a random time t during the competition.

- The above spatial analyses / queries can be multiplied. And spatial query outputs can be shown with QGIS.

Project Output:

You can share your project work with us in a video not exceeding 8-10 minutes. In the video, you should share how you performed the above steps.

While the main outline of the project is as above, there may be minor additions with feedback and ideas from you.

(Implementation of REST as mentioned in the first source and mobile implementation is optional. Being outside the main purpose of the course/project, it can provide an extra point as an Extra contribution.)