

IE 400 - PRINCIPALS OF ENGINEERING MANAGEMENT

2017-2018 Fall

COURSE PROJECT

1. Description

In this project you will be asked to develop a linear programming model for a shortest path problem. As the data source, you will use the map of Turkey. The network you'll construct will consist of the city centers (as nodes) and the distances between them. In our case, you will need only the distances of neighboring cities. Your goal is to find the shortest path between a pair of cities.

You must do it in two ways: One is solving a linear programming model, the other one is using Bellman-Ford algorithm. You can work individually or as a group of two or three. Each group will have a different starting node (city).

You can use Xpress or Excel solver to solve the LP problem. For Bellman-Ford algorithm, MATLAB is recommended but you can use anything to program it.

2. Schedule

- You must form your groups until the 12th of December 23:59.
You can use the link below to send group members. In Section A, you write your final members of your group. If you decide to work individually, then writing only your name is sufficient. In section B, if you are two people and searching for the third member, then write your names and your e-mail addresses. In section C, those who search for a group as an individual but cannot find anyone can write his/her name with his/her e-mail address.

<https://goo.gl/HpFoFK>

- The assignment of starting nodes(cities) : 13th of December
- The groups or individuals must send linear programming models as hard copy until 20th of December 17:30.
- The deadline for sending your codes is the 9th of January at 23:59.
- There will be a project demo. All groups must show their work during the demo and all members are subject to some questions and they are to be assessed individually. Project demo will take place after the finals in 10-11th of January. Groups that will use a different platform than MATLAB/Excel/Xpress is responsible of bringing a computer which can run their code.

3. Rules

- Since you are working as a team, each of the team members **must** participate in the demo. For the demonstration, all of the members must be present and be ready to answer questions in a reasonable manner. The grades of those who fail to do so, or do not come at all will be severely reduced. Not showing up on time will also cause deduction of the grades.
- All the work should be done by the group members. Copying someone else's material is considered as plagiarism and violation of the honor code. In this case, any disciplinary action will be guaranteed.