Decision Support Methods - Assignment 2

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Introduction

We were given a problem to locate a facility given a set of candidates towns. The available dataset contains the population of each city and its coordinates allowing us to find the distances between them. The goal is to decide how many distribution centres to allocate constrained by a certain budget.

Question 1

Question data:

Name	Description
$City$	set of cities
$latitude_c, c \in City$	cities' latitudes
$longitude_c, c \in City$	cities' longitudes
$population_c, c \in City$	cities' population
R	earth radius (km)
$yearly_cost$	yearly cost of opening a Distribution Centre

Optimization and Model

Data

Variables

Formulation

Solution

Question 2

Optimization and Model

Data

Variables

Formulation

Solution

References

[1] https://www.dcc.fc.up.pt/~jpp/mad1920/PopulationContPT-2020.csv