Week 7 – Mail Centres

A postal company has provided the following brief:

1. The company needs to decide which of its post offices to upgrade to mail centres.

2. Post offices collect local mail and then distribute it to mail centres where it is sorted by sorting machines. Each post office will distribute mail to exactly one mail centre.

3. The cost of upgrading a post office to a mail centre varies from post office to post office due to real estate costs.

4. Each post office collects a known quantity of mail (in m^3) and will need to send the mail to a mail centre.

5. The distance between all post offices is known, as is the cost rate ($\$$/m^{3}km) for moving mail.

6. Any mail centre can only cope with a specific quantity of mail.

Develop a model to help the company decide which post offices to convert to mail centres.

A Python file is available on Blackboard with the relevant data. Implement your model to work with this data and find the optimal solution.