

# Introduction to the KRAK roadmap data and associated code

## ***Access to the Krak data***

Please note that we have been given access to the Krak roadmap data strictly for teaching and research. The data must not be redistributed to anyone not participating in this course, and should be deleted after the course ends.

## ***Structure of the Krak roadmap data***

The most interesting part of the roadmap data are found in the Txt subfolder in the files 'kdv\_node\_unload.txt' (Node file from here on) and 'kdv\_unload.txt' (edge file from here on) which contains the roadmap data exported to a simple text format.

The node file contains a list of nodes representing intersections in the road network. Each node is associated the following data:

Its geographic position is listed as X-COORD and Y-COORD. It is also associated to identifiers KDV# and KDV-ID. We will use KDV-ID as a global identifier, that is it will remain the same if we use a subset of the nodes, while we will keep KDV# continuous from 1 to the number of nodes in the file. The entry 'ARC#' will not be used.

The Edge file contains a set of edges corresponding to road segments between pairs of intersections.

The FNODE# and TNODE# gives the KDV# of the endpoints of the segment. DAV\_DK# is used as a continuous identifier similar to KDV# while DAV\_DK-ID is used as a global edge identifier remaining the same even if we only use a subset of the edges. Another field that is very important is LENGTH which gives the length of the road segment.

The table below gives interpretations of the remaining fields.

Field name	Description
TYP	Road type indicator ( details only available in Danish)
VEJNAVN	Road name
FROMLEFT/RIGHT	The beginning of the house numbers on the left/right
TOLEFT/RIGHT	The end of the house numbers on the left/right
FROMLEFT/RIGHT_BOGSTAV	Same for letters associated to houses
TOLEFT/RIGHT_BOGSTAV	Same for letters associated to numbers
V_SOGNENR	Parish number on the left side of the road segment
H_SOGNENR	Parish number on the right side of the road segment
V_POSTNR	Left zip code
H_POSTNR	Right zip code
KOMMUNENR	Not relevant

VEJKODE	Road ID specific for commune (Not relevant)
SUBNET	Not relevant for this project
RUTENR	Not relevant for this project
FRAKOERSEL	Highway turn-off
ZONE	Type of area: 10 – City  20 – Holiday housing  30 – Industrial
SPEED	‘Ideal speed’ (treat as speed limit)
DRIVETIME	Estimated driving time
ONE_WAY	tf = one way in the direction To-From  ft = one way in the direction From-To  n = No driving allowed  <blank> = No restrictions
F_TURN	Related to turn restrictions, if you wish to use such information, talk to a supervisor or examine the Danish Krak documentation and /Txt/turn.txt
T_TURN	See above
VEJNR	KRAK internal road ID (Not relevant for this project)
AENDR_DATO	Change date (Not relevant for this project)
TJEK_ID	Road segment ID (Not relevant for this project)

## ***The code framework***

The code framework contains detailed comments, which you should read. The following is just a bird-eye view of the code explaining the overall layout.

### **Basic Graph Library**

The basic graph library is contained in the Java package graphlib, and consists of Edge.java, Node.java and Graph.java. It is a simple implementation of an adjacency list representation of a graph.

### **KrakLoader**

The KrakLoader can read and parse the text files supplied by krak and recreate the corresponding graph using the basic graph library.

### **InstanceCreator**

The instance creator can be used to systematically create a small test road network. It loads the krak text files and allows custom filters to include or exclude nodes and edges. The result can be written to new text files. Please read the comments for the instance creator in detail to be able to trace road segments between the original and the new road network.