

2.3bash-sed-make-lab

CST 334 (Operating Systems)
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Lab: Make and SED

Make.

1. Look at your most recent msh homework, and look at the Makefile that I supplied to help with testing. Make sure you understand it.
2. Now, or later, change your Makefile as needed for your work, such as to delete temporary files.

SED and regular expressions.

OpenStreetMap is a project for open source geodata. Copy [/home/CLASSES/brunsglenn/cst334/labs/sed-lab/all-roads-near-bl-small.osm](#) to a directory of your own. It is OSM data about roads near Bell Labs headquarters in Murray Hill, New Jersey.

Look at the file. It is an XML file, and consists of 'ways', which are road sections. Each way consists of nodes, which are points along a road. You will see that each way is tagged with information about the name of the road, the type of the road, etc.

Use sed, grep, pipes, etc, to answer the following questions about the data in the OSM file:

1. How many residential highways in the file?
2. How many ways?
3. What are the IDs of the ways?
4. How many distinct way IDs are in the file?
5. What are the reference numbers of the nodes?
6. Do any two nodes in the file appear more than once? (I.e. do any two nodes with the same reference number appear more than once?)
7. What different road types appear in the file?
8. How many ways for each different road type that appears in the file?
9. What counties appear in the file?
10. What percentage of the ways contain associated zip code information?

If you still have time, go to [overpass-turbo.eu](#) and figure out how to get road data for the vicinity around CSUMB.

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