Homework 1

This homework uses the SNAP.py software, a graph analysis tool in Python. Download the software here: https://snap.stanford.edu/ Go through the tutorial to get familiar with the graph construction and analysis functions that are available in this software.

The SNAP website has a collection of data sets (under SNAP datasets link in the navigation panel). Download the Amazon dataset of June 1, 2003 (amazon0601)

Use the Snap.py tool to compute the following:

- Number of nodes in the graph
- Number of directed edges in the graph. This is the number of edges $(a,b) \in E$, where $a \neq b$.
- Number of undirected edges in the graph. Same as above, except that if both (a,b) and (b,a) are in E, they count once.
- Number of nodes with zero out-degree
- Number of nodes with zero in-degree
- Number of nodes with more in-coming edges than out-going edges