Assignment Option (C) – Social Network Analysis. Requirement This assignment surrounds Social Network Analysis and requires you to evaluate a network of company directors. Using data from BoardEx (available via WRDS), you are tasked with compiling a network of company directors using your knowledge of Social Network Theory. The network should consist of nodes (the directors) and edges. The edges between each node should be connected only if the directors sit on the same company board in the same year. Your network should span at least 5 years prior to the latest information on BoardEx (currently 2019). BoardEx has three databases of companies and their directors, US, UK, and Europe; you may use any one of these for your analysis.7 Your analysis should include a statistical investigation into the network you create. Who are the key, central and influential players in the network? Why are they so influential? Do they often represent a particular type of company or companies, or have particular characteristics? To answer these questions, you should provide information regarding the network in terms of the centrality measures provided to you in class: Degree, Betweenness, Closeness and Eigenvector centrality. Using your python skills acquired within this module (and elsewhere), your report should seek to provide (but not limited to): An introduction – A general discussion of Social Network Analysis, the potential application to corporate director networks, what your research goals are, and what you hope to achieve through your analysis. A literature review – You have one main strand of literature to assess, Social Network Theory and in particular, its utilisation in the area of business power and influence. Remember that a literature review should be a cohesive discussion of extant literature, how it relates to your research, and is the main indicator of whether you understand the subject area or not. Utilise the skills that you have learned within BEAM068 to paint a rounded picture of the subject area. Methodology - What statistical tests/models are you going to perform and why? Data – A description of the data and its origin, including summary statistics of the key variables where appropriate, including the size of the network and other pertaining information. Analysis – You may wish to analyse the network as a whole and discuss the most influential directors across the network. Other options would be to look at individual business sectors independently, and/or use the size (e.g. market value) of each company as edge weights - in order that directors of larger companies are (appropriately?) given more influence than those at the helm of smaller companies. For an additional analysis (time permitting) you may also wish to perform a regression that utilises individual director characteristics (also available on BoardEx) in order to explain those with high centrality scores. For example, are these directors of a certain age compared to their peers? Did they go to a particular School or University? Have they been on the board a long time? Inside or Outside directors? Visualisation – Visualise your network. This can be done in any way you feel fit. Make sure to explain your visualisation and how it was created. You may wish to colour code the network by community, or by industry for extra visual appeal. The examples and links given to you in class will assist you on this. Conclusion – What are your key findings and what are the implications? Python code – A code (\*.py) file which documents each stage of your analysis (uploaded as a separate file). You may expand or explore this topic in any way you feel appropriate - provided that the key areas highlighted above are covered.