3   Hands On: Web Structure Mining

Load the package igraph

3.1   Link Analysis

1. Using the function make_graph(), with directed=F, build the undirected version of the networkin Figure 1 and answer the following questions.

   (a) Plot the obtained graph.

   (b) Obtain the set of vertices and edges.

   (c) Obtain the adjacency matrix.

   (d) Obtain the centrality degree, closeness and betweenness of each node.

2. Using the function make_graph(), build the network in Figure 1 and answer the following questions.

   (a) Plot the obtained graph.

   (b) Obtain the set of vertices and edges.

   (c) Obtain the adjacency matrix.

   (d) Obtain the centrality degree, closeness and betweenness of each node.

   (e) Plot the same graph, but with different layouts.

   (f) Obtain the list of nodes by decreasing order of their hub scores.

   (g) Obtain the list of nodes by decreasing order of their authorities scores.

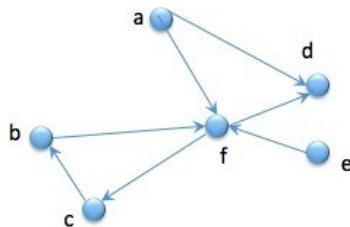   (h) Obtain the list of nodes by decreasing order of their page rank scores with a damping factor of0.9.

Figure 1: Example of a network.