Shiv Nadar University

Department of Electrical Engineering-(SoE)

EED364: Graph Signal Processing

Lab-1 (Eigen spectrum with respect to Adjacency matrix of a Graph)

Instructor: Prof. Vijay Kumar Chakka

Plotting the graph from a given Adjacency matrix:

1. Create a MATLAB function to plot (2D) the graph for the given adjacency matrix A. Plot the graph for few of the class examples. Verify your result by using the built-in function $gplot(A, Coordinates)$.
   (Useful MATLAB keywords: $plot, text, num2str, cellstr, line$)

2. Create another MATLAB function, for plotting the 3D graph for the given adjacency matrix A .

3. **Bucky ball example**: In this example the adjacency matrix and coordinates of the graph are obtained by using the built-in function $[B, XY] = bucky$, where B is the adjacency matrix is and XY represents the coordinates. So, use the functions created in question 1 and 2 to plot the graph for this example.

4. Generate Random adjacency matrix of size N nodes. And plot the graph using above procedures?

5. Calculate the Eigen spectrum of all plotted graphs?