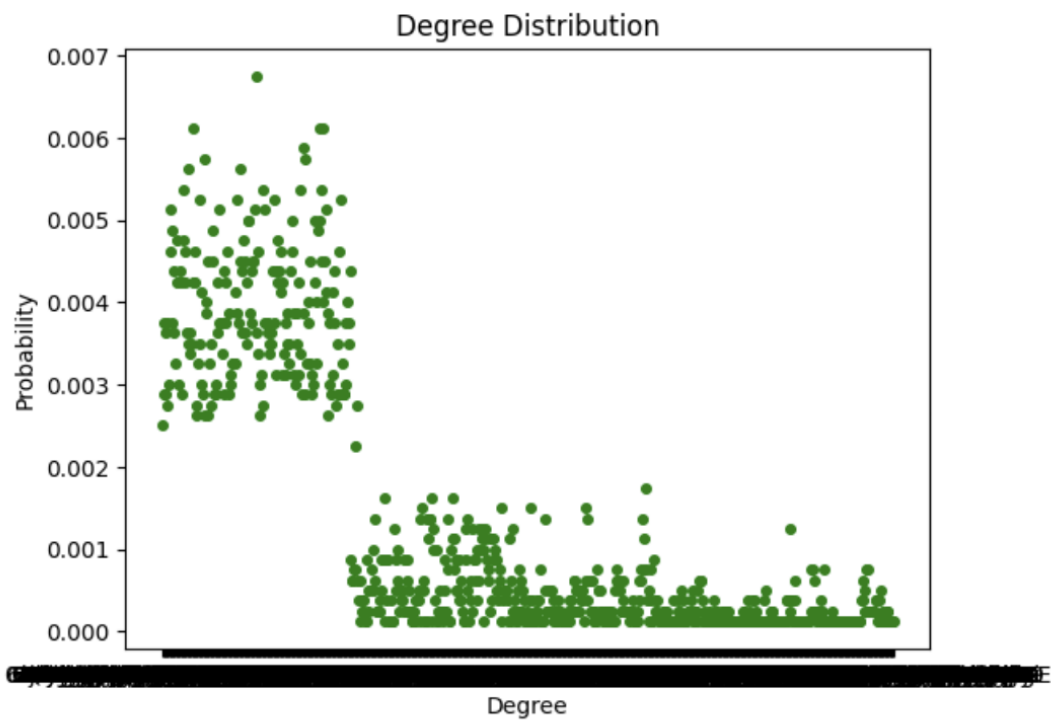


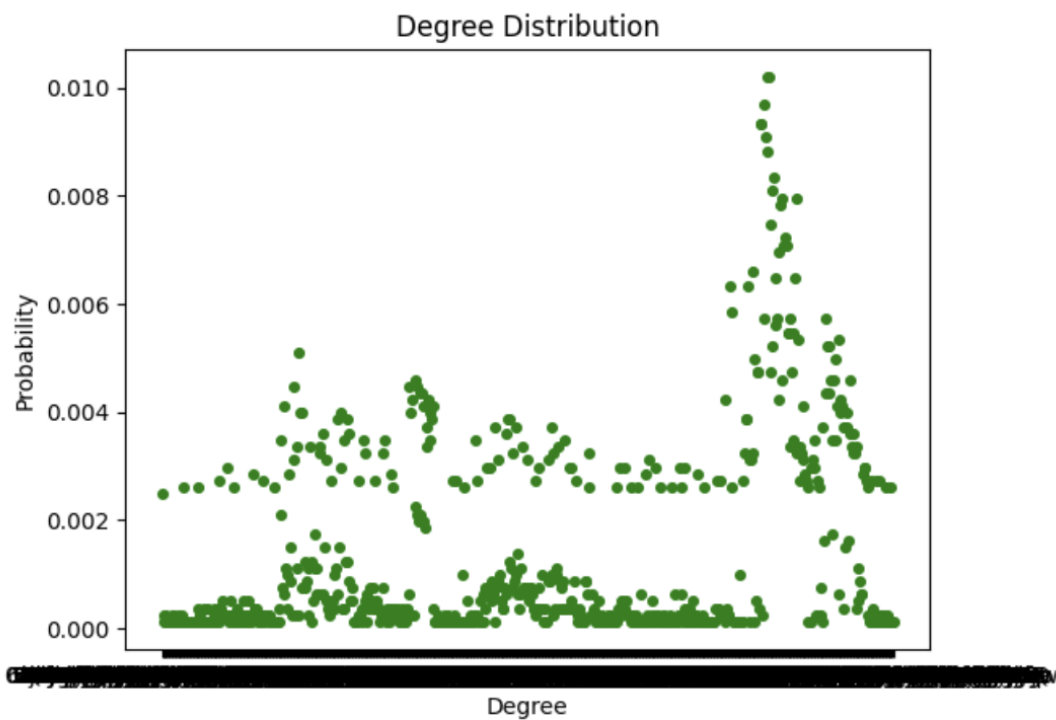
1. (1.5 points) Comment on the results obtained in Exercise 4 (include the results obtained in Exercise 4 in the report):

(a) What are the degree distributions of the three obtained undirected graphs like?

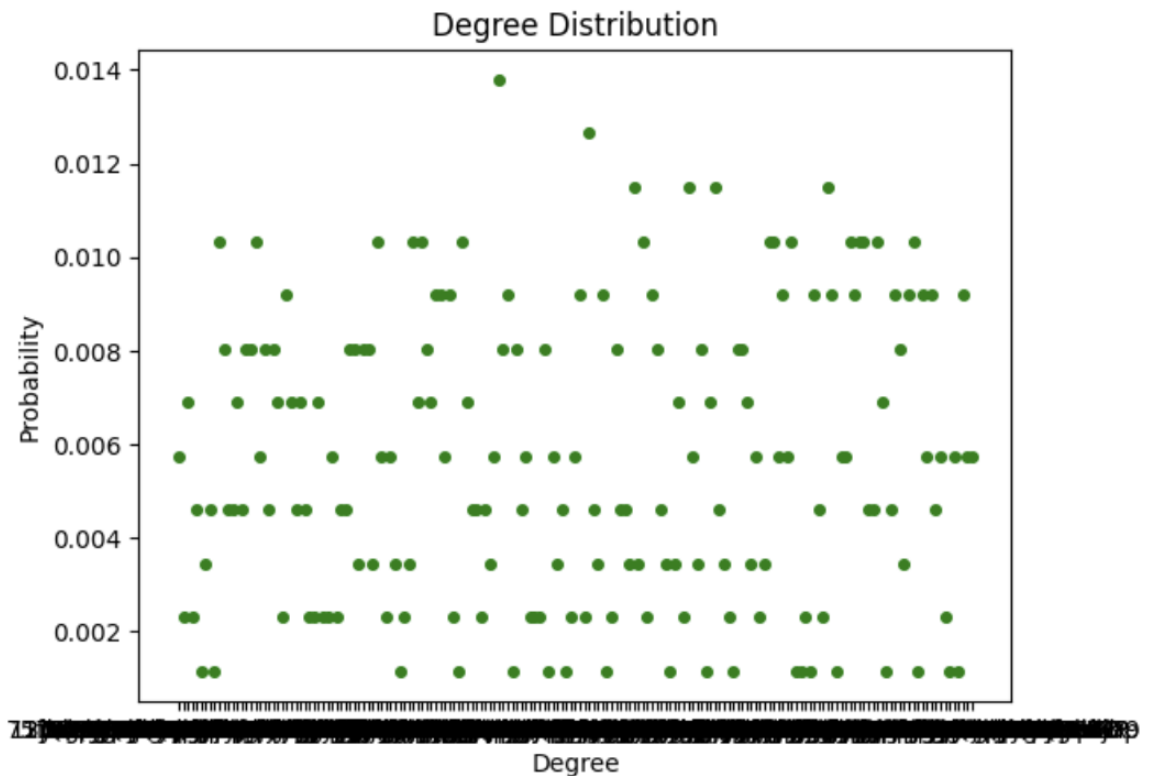
Degree distribution of  $g_B$ :



Degree distribution of  $g_D$ :



Degree distribution of gwB:

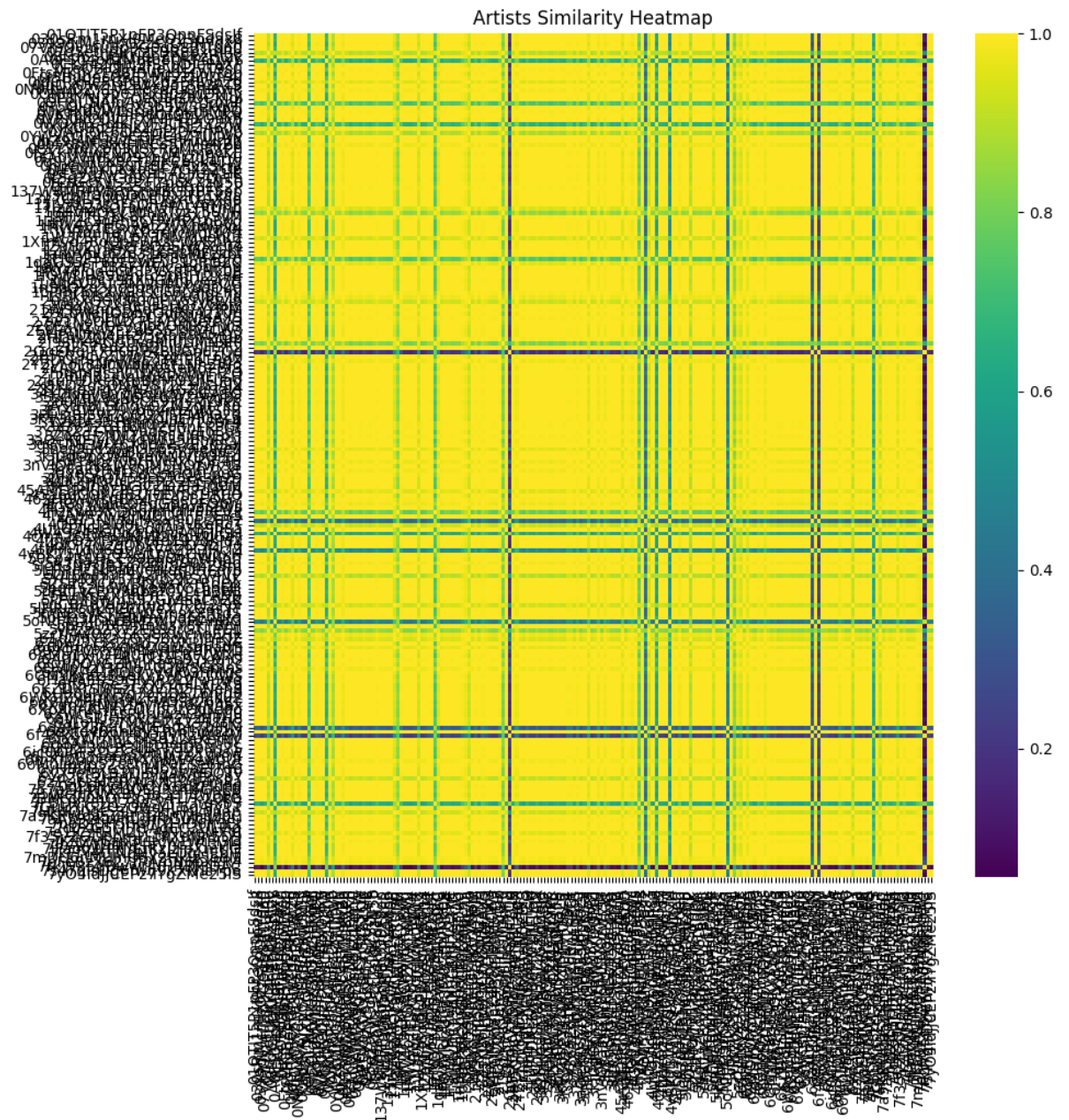


We can see big differences between the distributions. It's worth to note that none of those used loglog scale and all are normalized. The gB seems to follow a kind of powerlaw distribution and gD has a surprising jump in probabilities instead as can be seen in the plot. Finally the gwB seems quite uniform, probably thanks to the fact that we pruned the edges that did not surpass the threshold.

(b) Are the two selected artists similar based on their audio features? Comment on the comparison regarding the relationships between artists provided by Spotify (graphs gB and gD).

We were not able to retrieve data for this artists in the time we did this due to sleep for retry error and despite of trying with different accounts it did not work. Still we tried to make the code that performs this plots, which you'll find in the skeleton. It's a pity to have that many errors with the API and this small amount of time.

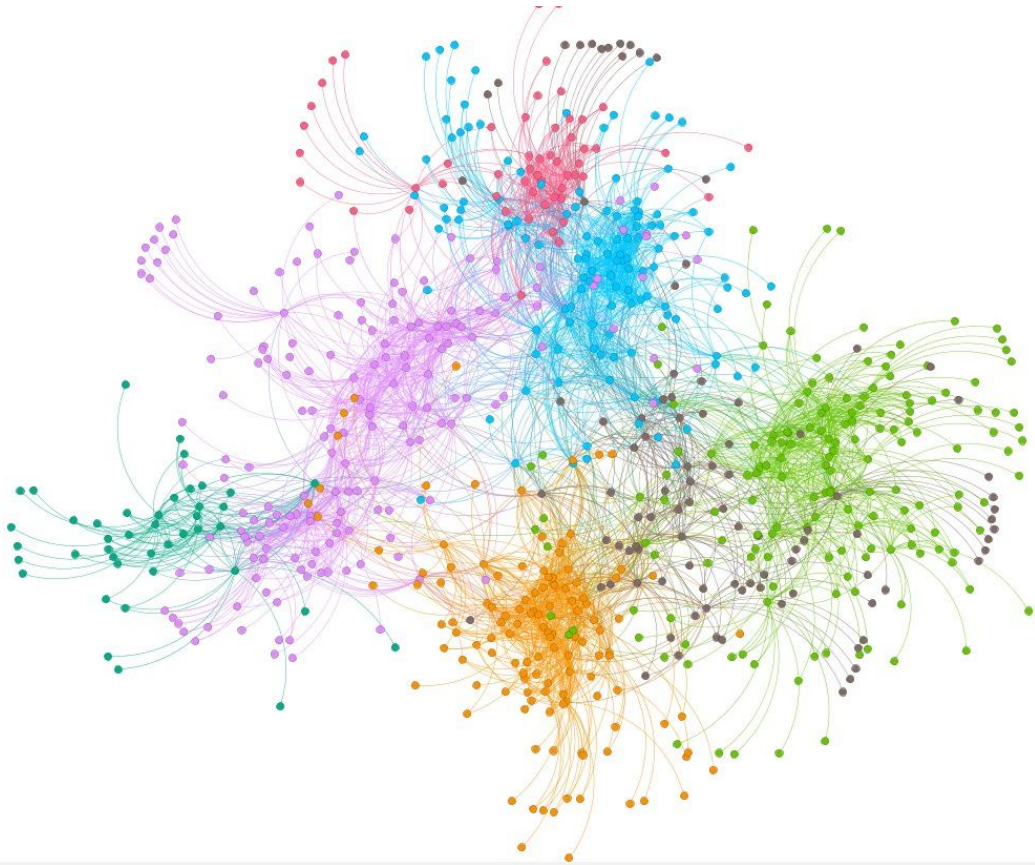
(c) What can you infer from the similarity heatmap regarding the algorithm that selects related artists on Spotify?



Is difficult to make conclusions from this plot but we could state that as expected many artists are so similar as they were crawled by finding the most similar node to the previous, nonetheless there are exceptions, which affirm our theory. Artists are very related!

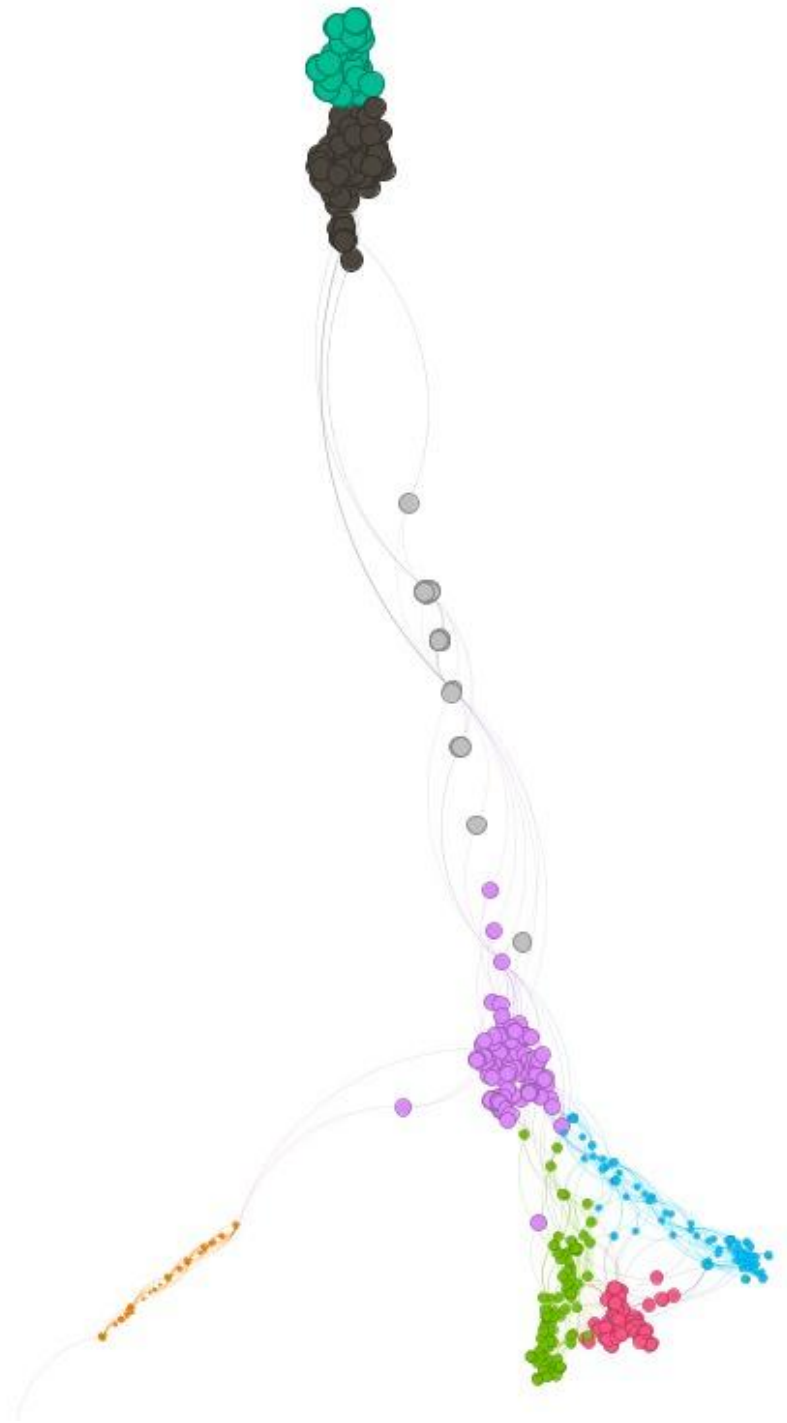
2. (1.5 points) Comment on the visualizations generated with Gephi.

gB:









When we tried to print the names but there were so much that we could not see nothing at all, as you can see in gB.

- Compare graphs gB and gD. What can you say about their properties? ^

We can see a big difference in the layout of both DFS and BFS, this seems to be due to the way the nodes expand, being quite more differentiated communities in gD. Communities in gB are so close. Then the densities of the graphs differ quite a lot.

- Can you identify common characteristics among artists belonging to the same community? Could you label the different communities?

We could say that artist in the same community tend to relate more between each others, via featurings for example. Also we can see that different communities behind differently when paying attention to the display of the nodes in the community. This is so interesting to note by this kind of graphs. We did not have time enough to label the communities.