Abstract—**The recommendation system is an important aspect of music streaming services. Various studies indicate that an effective recommendation system can enhance user satisfaction, raise revenue, and attract more users. Current music recommendation systems rely heavily on traditional collaborative filtering techniques, focusing only on the user interaction and items, resulting in less relevant recommendations. In addition, the Graph Neural Network (GNN) method can capture deeper relationships between users and items by considering the graph structure involving inter-node connections in greater detail. This recommendation system uses GNN-generated node embeddings to calculate node similarity through dot product. Recommendations are then given based on the highest dot product value, which indicates the highest similarity among every node in the graph. This research aims to evaluate how GNNs are employed in a music recommendation system with an emphasis on improving recommendation relevancy. This research utilized two GNN architectures, GraphSAGE and GCN. The performances were evaluated using multiple metrics, including Area Under the Curve (AUC), precision, recall, F1-score, and training time. This research used three experiments with various parameters to evaluate the performance of both models. The results show that the GraphSAGE model performed better, with an AUC of 0.91, a precision of 0.89, and an F1-score of 0.79. In contrast, GCN outperformed GraphSAGE in recall with a score of 0.82 and slightly faster training time. These results were consistent across all three experiments.**

Keywords—*Graph neural network, Music, Recommender system*