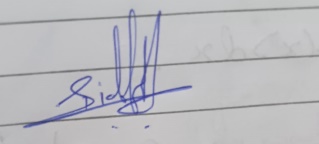
| **STUDENT PORTFOLIO** | |
| --- | --- |
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| **Subject Title: 21CSC201J Data Structures and Algorithm**  **Handled By: Dr. Rajkumar K.** | |
| **ELAB Completion Status Completed 4-5 questions from all the topics** | |
| **Lab Experiment Completion Status  All the 15 experiments were executed properly, shown the output and signed by the faculty.** | |
| **REAL WORLD APPLICATION IN DSA**  **Music Player**  **This real-world application was done in-order to get more information on how a Social Media Feed Ranking works in terms of DSA. Here we are going to be using a priority queue by which we will order these posts or feed in order of their relevance score.**  **The goal of this project is to build a system that ranks and presents social media posts in a feed based on relevance, user engagement, and other contextual factors.**  **The project focuses on using core data structures to optimize storage, retrieval, and ranking of posts in a way that mirrors the recommendation algorithms commonly used by social media platforms**  **The feed ranking model will score each post based on various factors like recency, engagement levels, user interaction history, and personal preferences.**  **A priority queue plays a central role by managing the ordering of posts based on their relevance scores. This allows the system to efficiently retrieve and display the most engaging or relevant content at the top of a user’s feed.**  **We also look into the aspect of time complexity of the used data structure that is the priority queue.**   1. **Insertion: O (log n) Adding a new post requires reordering the heap to maintain the max-heap property.** 2. **Deletion: O (log n)** 3. **Updating relevance scores: O (log n)** 4. **For sorted arrays or sorted links, the time complexity is O(n) which is worse than O (log n).** 5. **For accessing top elements, priority queue has a time complexity of O (1) while array/linked list has a time complexity of O(n).** 6. **For updating the list for real time ranking, priority queue has a time complexity of O (log n). While BST and other sorted structures have a time complexity of O(n)**   **The Report and presentation of the same have been attached below:**  **https://drive.google.com/drive/folders/1gUMcuY9U9pNAtTWTEoF3cW\_nZ4fFYNfL?usp=drive\_link** | |
| **GATE Questions Solution.** | |
| **This link is the link to the drive where I have put all the certifications and any other document related to this course**  **https://drive.google.com/drive/folders/1Kk\_34490Mp98LgcUCcfvlij8JY3fnZoc?usp=drive\_link** | |

Sidharth Nair

(Signature)

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