**Data Structures Project**

**Group Member Names:**

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* Usman Zafar i210608 AVL Tree
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**Project Description:**

A database is an organized collection of data or information that can be easily accessed and updated. The data is typically stored in the file system and indexed (using different methods such as index trees) making it easier to find or update the relevant information. In this project, students will develop a simple database system (named DSDB) that can store data in

multiple files residing on the computer file system. DSDB will use (1) B tree, (2) AVL tree, and (3) Red-Black tree, to index the data (stored in files), so that different search and update operations can be performed in an efficient manner.

**Solution:**

For Red Black Tree we built the Red Black Tree structure and then made functions for indexing, and searching as per our need and implemented them correctly in the form of each Tree with the help of the group members. With the help of filing, we performed deletion, updating, etc.

We implemented a Node structure with a template and used that Node to create Trees. This process is followed for all Trees structures. With the help of all group members, we were able to solve all the tasks given in the project successfully.

**Problems Faced:**

The main problem we faced was implementing the structure of the tress but after the successful implementation of trees with the help of the internet and our personal concepts the remaining project wasn’t much of a problem.