



PROBLEM DEFINITION DOCUMENT

For

Duty Normalizer

Prepared by

Team Number: 02

Rithika Kathirvel
Aswin Sreekumar
Navaneeth Shanavasani
Anand C L
Aditya Premjit

B200055CS
B200737CS
B200053CS
B200763CS
B200703CS

Project Managers: Sreekala S, Athira A B

Project Client: Sreekala S

Project lead: Aswin Sreekumar

Serial No.	Revision Date	Description
1	26-02-2023	First Draft
2	28-02-2023	Final Document

CONTENTS

1. Problem Statement	3
2. Objectives	3
3. Motivation	3
4. Preliminary Ideas	3
4.1. Retrieving the required number of people from a sorted database	3
4.2. Using Self-Organizing Data structures	3

1. Problem Statement

The client seeks a mobile application that automates the task of allocating duties to Students and Faculties. This application upon request assigns duty in such a way that the workload is evenly distributed. Additionally, we can add details of new people and generate task reports. The system also allows the admin to reallocate the duty in a normalized manner.

2. Objective

Upon completion of this project, the following objectives will be achieved:

1. Being able to assign duties to a specified number of people from each group based on the currently taken duty hours.
2. Generation of reports on a particular task in order to view the history of task allocation.
3. To re-evaluate an allocation and work hours in case of unavailability of a person and reassign the duty in a normalized sense and update work hours accordingly.
4. To enable the admin to add people to a particular group individually or as a batch through spreadsheets.
5. Being able to delete people from each group individually or through a common feature
6. To enable admin to reset workload to zero with every new academic year.

3. Motivation

The ongoing process of allocating Students and Faculties to duties is done manually, which includes a lot of physical records to be written and kept for future reference. Using this application, most paperwork will be reduced, and everything can be done with a click. Keeping track of work hours manually and ensuring even distribution of tasks can be a tedious one. With a duty normalizer, one click is all that takes to assign duty fairly based on work hours. The reports on a particular task can be generated which allows us to keep them for future reference.

4. Preliminary Ideas

4.1. Retrieving the required number of people from a sorted database

Every time a retrieval operation needs to take place, the database is first sorted on the basis of the number of work hours and then the required number of people is elected from the top of the database.

4.2. Using Self-organizing data structures

Use Data structures that reorganize themselves automatically every time an operation that changes work hours takes place. The retrieval for the next allocation operation is done by selecting the required number of people from the top/head of the data structure.