

# DATABASE MANAGEMENT SYSTEM PROJECT

Work In Progress Document



## C0deBook

Brought to you by

Team *DataBaes* | GROUP 2

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# What is C0debook ?

One-stop for all your CP statistics! Gather CP stats from Codeforces and Leetcode. Learn & observe how people code, maintain your own cp code-base with your own custom repositories!

Form groups, follow people, have live contests and thrive in a community! Go premium to get a detailed analysis of how influential you have become!

Check out and compare your stats all in one place, making it your ideal 'C0debook'!

Happy Coding!



# WEEK 1

- A 'Hi' to all the group members
- Ideated on the application & rejected a lot of them :/
- Thought along the lines of developing a CP platform
- Decided stakeholders for a general CP platform.

## Work Contribution

Everyone contributed equally to the ideation process.

## STAKEHOLDERS

- User
- Group Admin
- Recruiter
- Programming Organization
- Admin



# WEEK 2

- Refined the initial idea
- Decided roles for stakeholders
- Started learning & working on Flask for front-end and MySQL for the backend

## Work Contribution

- Anoushka, Ritik & Divyansh :- Flask, Create utilities to call a python function and print its contents
- Ritik, Divyansh :- How to utilize API of leetcode and codeforces from code, retrieve a JSON
- Ramit, Divyansh :- MySQL
- Gurjot :- Learning fundamentals of UI



## ROLES

- USER

- See how people code
- Maintain a list of solved, unsolved problems
- Get stats from leetcode, codeforces
- Get programming stats
- Form groups
- Follow people
- Get repos of certain tags, languages
- Get blogs of certain tags, users and likes
- Check profile visits (available for premium users only)
- Join a group
- Write a blog
- Report people

- GROUP ADMIN

- Check member ratings
- Add members
- Remove members
- Check highest rated member of the group



- See member's activity
- RECRUITER
  - Compare users
  - Prefer users on basis of
    - a. Location
    - b. Language
    - c. Ratings
    - d. Strengths
  - Recruit users
- PROGRAMMING ORGANIZATION
  - Organize contests
  - Check user activity
  - Post Ads
  - Compare users
  - Provide problem set



- ADMIN

- Check revenue generated
- Show ads
- Block users
- Check change in number of users using the platform
- Knows about no of users(premium/non-premium), organizations and recruiters joined/left



# WEEK 3

- Finalized the idea to develop a platform for CP
  - Stats based comparison with the initial idea of different stakeholders and their attributes
- Gave a catchy name to the project xP
- Discussed various attributes of different stakeholders.
- Identified different actions that will be performed by different stakeholders to decide more attributes for them
- Divided task for front-end and back-end
- Check on for the progress and tasks given in previous week

## Work Contribution

Everyone of the below members contributed equally to define the attributes and entities. Divided topics and fields to learn that can be useful in our project.





# WEEK 4

- Decided attributes for all entities
- Better design procedures considering resulting relational model
- Decided queries for all stakeholders

## Work Contribution

- Anoushka :- Group Admin and Recruiter as an entity
- Divyansh :- Users and premium users as an entity
- Ramit :- Programming Organization as an entity and weak entity like problem set
- Ritik :- Admin as an entity and remaining weak entities like blogs and contest
- Gurjot :- Attribute decisions for Programming Organisation & Recruiter.



## QUERIES

*Note: We are providing fundamental / primary queries for each stakeholder.*

*When designing the application, we plan to come up with even more complex queries in order to supplement our database.*

- User

1. Get problems of certain tags & difficulties
2. How many Followers do I have & how many do I follow?
3. What are the numbers of my Blogs and how many likes on it?
4. What are my Strengths?
5. What are my Weaknesses?
6. Which groups am I part of?
7. What problems have I solved?
8. What are the numbers of my Repos?
9. Who all are my recruiters?
10. What is the subscription period of the plan?
11. Get repos of certain tag, certain language
12. Get blogs of certain tag, certain user & likes of blog
13. List technical admin, premium admin
14. Who is the admin of the group?



- Group Admin (Specializes User)
  1. What is the user rating of a particular user?
  2. What is the current no of Members?
  3. What are the different types of blogs posted on my grps?
  4. What is the date of formation of grps?
  5. Who is the admin of the group?
  6. Check user blogs of the group
  
- Recruiter
  1. Most preferred users?
  2. Who all have been recruited before?
  3. Who all are at a particular location?
  4. Who all code in a particular language?
  5. Who all have a particular rating?
  6. Who all have a particular strength?
  7. Who is better, user A or user B on a comparative basis such as number of hard problems solved, etc, ?
  
- Programming Organization
  1. What are the number of users from my organization registered on the platform?
  2. Where are my Contests posted?
    - a. Give me contests after a certain date



- b. Likes on contests
  - c. Maximum liked contest
- 3. How much Revenue have I Spent?
- 4. How many ads have I posted?
- 5. What is the Percentage Increase in Users Vs Revenue Spent?

- Admin

- 1. Who is the Admin for a particular role?
- 2. What is the total number of Users?
- 3. What are the total numbers of recruiters?
- 4. What are the total programming organizations registered on the platform?
- 5. What is the total revenue generated from different sources?
- 6. What's the status of reported accounts?
- 7. Querying new users joined, new recruiters joined, new groups & new programming organizations (% of change)
- 8. Who all are Premium users & new premiums (% of change) ?
- 9. What is the current premium charge ?



# WEEK 5

- ER Diagram and Relational Schema
- A very hectic week comprising a lot of fundamental DBMS decisions for C0deBook. (Visible in ERD & Relational Model)

## Work Contribution

Everyone picked different entities and then created an entity-attribute chart for the same.

- Anoushka :- Users and premium users as an entity
- Divyansh :- Group Admin and Recruiter as an entity
- Ramit :- Programming Organization as an entity and weak entity like problem set
- Ritik :- Admin as an entity and remaining weak entities like blogs and contest

Then finding different relationships between different entities were equally contributed.

- Ramit, Divyansh :- Conversion of ER to Relational Schema
- Ritik, Anoushka :- Data transfer and table creation techniques in mySQL along with contribution to attributes in Relational Schema.

*ER diagram & Relational Schema are attached herewith.*



# WEEK 6

- Final Structuring
- Code for getting data from codeforces, leetcode APIs
- Populated the tables ( Involving “a lot” of Python coding >.< )

## Work Contribution

- Anoushka :- *Primary* doc management, *secondary* population scripts
- Divyansh :- *Primary* population scripts, *secondary* doc management
- Gurjot :- *Primary* logo design, *secondary* population scripts
- Ramit :- *Primary* population scripts
- Ritik :- *Primary* data transfer to MySQL

*Note: This document contains all the final & fundamental DBMS decisions, changes & implementation details that were applicable to 'Codebook'. In order to further deep down into the ideation processes, flaws, technical & decisive flow of the project, kindly refer to the raw yet ordered collection of ideas & decisions formed over various team meetings attached herewith. Thank you!*

