



SOFTABLITZ

Brought to you by Avishkar

PROBLEM STATEMENT

**YOU
START
THE
GAME**

BASIC INSTRUCTIONS

- ❖ A team can consist of at most 3 members.
- ❖ All branches are allowed, but each team must have at least 1 member from either CSE or IT. Cross-year teams are not allowed.
- ❖ Plagiarism in any form will result in elimination.
- ❖ Teams are allowed to attempt a maximum of two problem statements. If your first problem statement is complete then only we will consider your second problem statement for scoring. In short we will not be considering 2 incomplete projects for scoring. In any case we will be evaluating all your work and giving feedback.
- ❖ Bonus points will also be awarded if the team implements features other than the one specified.
- ❖ Use of Git and GitHub is compulsory and holds good weightage of score.

SUGGESTIONS

- ❖ Firstly read each and every problem statement and then decide which one suits best with your current skill set.
- ❖ Try to build a complete solution for the problem that you are attempting. In this way you will have a project worth mentioning on your resume.
- ❖ The 4th point on the left-side clearly states that even for winning you need to have at least one complete project with all the features mentioned.
- ❖ First try to implement as many features as you can. In case you get time after this, then only spend time polishing UI. Remember an application with very good UI but minimal functionality is useless. It is just like, "Naam bade par darshan chote". You won't be getting any marks for UI although we may use it as tie breaker.
- ❖ Remember to keep the spirit of Softablitz ablaze by not using libraries to implement features unless specified to do so, any libraries/packages/JARs used which are not mentioned by us will lead to negative points.
- ❖ Last but not the least for any doubt regarding problem statements contact coordinators as we are always here to help.

CALCULATOR



Kylian Mbappe is a French football player. He plays for Real Madrid Paris Saint Germain. He loves (and earns) a lot of money. There has been a sudden increase in his income which has resulted in his finances being in disorder.

He has asked you to create a calculator app for him so he can manage his finances better and also keep count of the number of Balon d'ors his teammate Messi has, since he won't win one anytime soon.

BASIC FEATURES

1. Perform basic operations like addition, subtraction, multiplication and division.
2. Store calculation history.
3. Scientific mode with operations like gcd, lcm, trigonometric functions (with radians and degrees).

ADVANCED FEATURES

1. Calculate solutions to arithmetic expressions with parentheses $((1+2)*(4-3))$.
2. Unit conversion (length, weight, currency, etc).
3. Base conversion (binary, octal, decimal, hexadecimal or custom base).
4. Extra marks for a good UI and extra features.

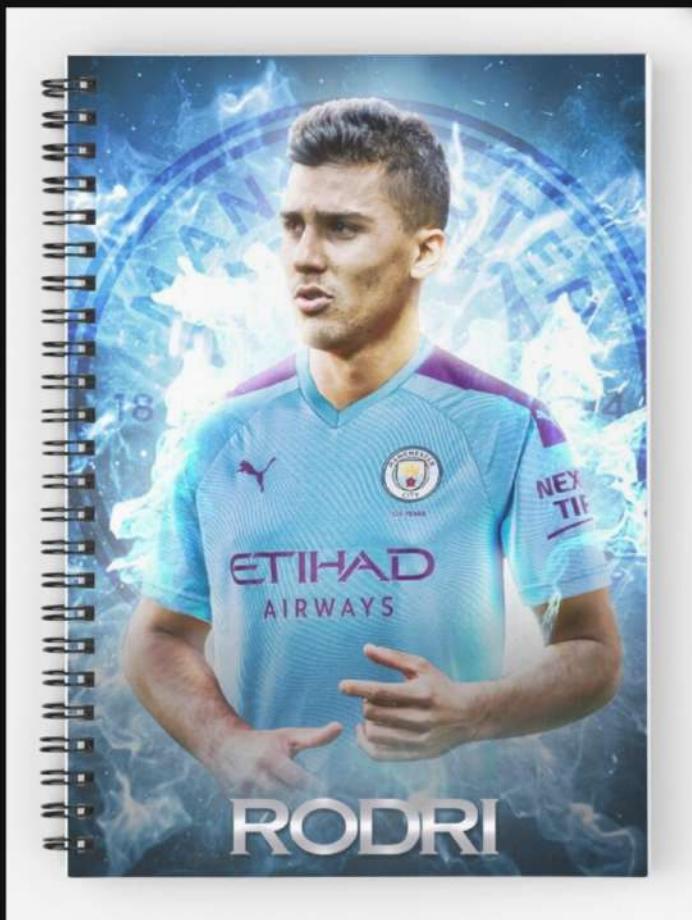
NOTES APP



DIFFICULTY: EASY

Rodri is a Spanish midfielder who currently plays for Manchester City football club. Being a professional footballer is good and all but it's no MBA. Hence in an effort to impress his parents rodri took up a course in Business and Management. With the world cup coming up, he is having a difficulty managing his schedule, balancing his coursework and football.

Help rodri manage his daily tasks by making a notes app.



BASIC FEATURES

1. Users can create a to-do list with due dates and reminders.
2. Every time the user opens the app, the reminders are shown as a popup.
3. Option to sort the lists based on due date, last modified, alphabetically etc.
4. Create a calendar in which the user can add events.

ADVANCED FEATURES

1. User can add checklists.
2. Option to share a particular list in multiple formats (doc,pdf etc).

SUDOKU



DIFFICULTY: EASY

Erling Haaland is a Manchester City player and hails from Norway. Considering his recent form, you might feel that he will wreak havoc in the World Cup. The only problem is that Norway could not qualify for the tournament. Now Haaland needs a way to pass time for an entire month.

Now you have to assist him (he always needs one) by creating a sudoku game for him to keep him busy. He's likely to find it easy and repetitive, but that's what he likely feels about his entire job.



BASIC FEATURES

1. Automatic sudoku boards.
2. A timer for scoring purposes.
3. Create your own sudoku grid. Check for its validity (a solution should exist).
4. Change the size of the grid (2x2, 3x3, 4x4, etc.)
5. Games with different difficulty levels.
6. A mode which warns the user on an incorrect input.

ADVANCED FEATURES

1. Store high scores on the basis of game difficulty and mode.
2. Save progress for unfinished games.
3. Save the grids that are created in the third point in basic features.
4. Add an option for hints and give a time penalty for using them.
5. Add an undo redo function.
6. Add achievements and medals for the local user.
7. The puzzles generated in the first point must have a unique solution. Make this optional for users

DRIVE



DIFFICULTY: MEDIUM

Karim Benzema is Real Madrid's and France's number 9. As some of you might be aware, he loves shooting videos. Benzema has some videos and other important files on his desktop. They are taking up a lot of space on his machine.

He is in dire need of a solution to help him manage all his files and free up some local storage. Create an online file management system where he can create, store, backup and share all his files on the internet.



BASIC FEATURES

1. User login/signup.
2. Users can upload various types of files and folders.
3. Users can set the visibility of files to public or private.
4. Users can mark files as favorite.
5. Users can download files locally.
6. Different ways of sorting the files based on type of files, name, time of upload, size of file, etc.
7. Searching and filtering files based on type of file, name, time of upload, etc.

ADVANCED FEATURES

1. Users can rename their file in the app itself. The change should be visible to all other users who can access the file too.
2. Users can view a file in the application without downloading it locally.
3. Users can create and edit files directly inside the app. (More points for more types of files that can be edited)
4. Users can add other users to a folder.
5. Users that own the folder have to give different types of access (view, comment, edit) to other users.
6. Users can add each other to a file.
7. Users can give other users different permissions in their files (view, comment, edit).
8. **Collaborative editing of files.

FANTASY FOOTBALL



DIFFICULTY: MEDIUM

Zinedine Zidane, the former french World Cup winner, has his eyes on the French National team coach position for a while now (some say this is why he left Real Madrid, but legend has it that this real bald genius got bored of winning trophies). Due to the recent tension in this star studded squad, Zidane feels that his chance might be closer and wants to brush up his managerial skills.

Help Zizou by making a fantasy football application.



BASIC FEATURES

1. User login/signup.
2. Admin will create a set of players for every position (Goalkeeper, Defenders, Midfielders and Attackers with a price tag for each player (in Pounds)
3. User will have 100 Million Pounds in their account initially to create their team of 15 players
4. Teams should have a 2 goalkeepers, 5 defenders, 5 Midfielders and 3 forwards
5. Once the team is selected players have to finalise their starting XI before the deadline for every gameweek
6. After every game week the user can transfer up to 1 player free of cost. Transferring more than one player will result in deduction of 4 points
7. User can join an existing or create new leagues with other users
8. Each league will have a leaderboard which will be updated automatically after every gameweek

ADVANCED FEATURES

1. A feed sections where users can write reviews of players, share their strategies for upcoming matchdays
2. Admin will come up with a scoring system for each type of player depending on the number of goals scored, tackles made, fouls committed etc.
3. Wildcard, Freehit, Triple captain
(Refer to FPL website for explanation)

QUESTION ANSWER FORUM



DIFFICULTY: MEDIUM-HARD

This time the World Cup is being hosted in Qatar. As they say 'when in Rome, do as the Romans do', the fans and players visiting Qatar have to follow the rules of the host. There are some rules with strict punishments so the visitors have to be as cautious as possible.

To provide public information and clear confusion as much as possible, FIFA has asked you to create a QnA forum so that visitors can ask and answer questions. The questions can be about anything including rules, places to stay, places to visit, knowing new people etc and not just limited to asking questions about the rules.



BASIC FEATURES

1. User login/signup.
2. Users have a profile page with their questions and answers.
3. Users can ask questions.
4. Multiple users can answer any question.
5. Users can comment on answers.
6. Users can accept an answer to their question as the correct answer.
7. Users can upvote/downvote on questions, answers and comments.

ADVANCED FEATURES

1. Users can follow each other.
2. Users can supply their questions with tags.
3. Tags can be used for searching and filtering questions.
4. Users can search for questions containing particular words, phrases or written by a certain user.
5. Users can edit their posts. Others can see all the versions of the question.

SKRIBBL



DIFFICULTY: HARD

The English football team has to leave for the Qatar World Cup soon (they will also be returning home soon after losing again). The players are planning on what games they can play in the airplane and finally they decide that Skribbl sounds good. Now, as the English Players are busy, help them design the game!

**Keep the engine running
we won't be long**



BASIC FEATURES

1. Users can log in/log out and have their app profiles.
2. Users should be able to start a game and have a shareable unique code to the game.
3. Users should be able to join a game using a code if it hasn't started.
4. Users should be able to send friend requests to others.
5. Users should be able to search for other users using their username and/or real name.
6. Friends can see each other and invite each other for a game.
7. Check detailed rules of the game at skribbl.io.
 - i. User who has to draw gets 3 randomly generated words and he chooses the one he wants to draw.
 - ii. Users can draw on the canvas and it should be visible to all other users in the game in real time.
 - iii. Users who are currently guessing the word should be able to type it in the chat and if they have guessed it right, they get points based on ranking of the guess.
e.g: Person who guesses first gets more points, etc.

- iv. Correct guesses should be hidden from other users but "User XYZ has guessed the word correctly" should be added to the chat.
- v. At the end of each round points get added to the users.
- vi. Game ends when the number of rounds predecided ends. (a multiple of the number of users, because all users should be able to draw equal number of times)

ADVANCED FEATURES

- 1. Keep track of the history of the games played by a user.
- 2. Make a global leaderboard for the players (or atleast for the friends)
- 3. Improve the drawing capabilities by adding different colours, different paint brush sizes, etc.
- 4. Improve the scoring algorithm and make it more logical, for example, the person drawing should be getting points on the basis of how fast others guess.

SNAPCHAT



DIFFICULTY: HARD

You might be aware of the amazing dance skills of Vinicius Jr. a Real Madrid player and a Brazilian international. Inspired by his skills and the Brazilian tradition of amazing goal celebrations, his compatriots have asked him to teach some celebrations. Vinicius is pretty excited and does not want the celebrations to leak anywhere.

He has asked you to create a Snapchat like application so that he can craft amazing celebrations with his teammates.



BASIC FEATURES

1. User login/signup
2. Add friends using username
3. User can send View once images and videos to other users and have an option to chat
4. Video and audio calling option
5. Timer in snapsUser can create a group with other users

ADVANCED FEATURES

1. Group video/audio calls
2. Give options to apply filters on images and videos
3. Filter option in Video call
4. Users can play games with each other when online.
5. Notify the user if someone takes a screenshot of their snap

TWITCH



Sergio Aguero is a retired Argentine footballer. Post retirement he spends most of his time playing games and has become quite skilled at them. Times are tough so he decides to stream these games to earn some extra cash.

Streaming sites like Twitch and YouTube have been overtaken by TikTokers so you've to design a streaming app for Aguero. Help Sergio by creating a desktop application using which he can show off his gaming skills while also staying away from Tiktokers.

BASIC FEATURES

USER

1. Can sign up and Login / Logout.
2. Has a profile page (Profile image, name, bio..).
3. Set status (Online/Offline).
4. Can search channels.
5. Can watch a channel.
6. Can chat with the community
(like conversation side to live stream).

STREAMER

1. User can create/modify their channel (one per user)
2. Can start/stop stream
3. Can stream from desktop/camera with audio(microphone).
4. Is able to see separate chats
(All users/ Subscribers only)
5. Platform Home Page

ADVANCED FEATURES

USER

1. Can see last seen of other users.
2. Can browse channels based on categories
3. Can follow/subscribe a channel
4. Can mute/pause the stream (client side)
5. Get notified when followed channel starts streaming
6. Can do direct messaging other users

STREAMER

1. Can schedule their live streams (Visible to everyone)
2. Can mute/unmute himself
3. Can streams either for All users or for subscribers only.
4. Is able to choose a streaming source (desktop/camera/both).
5. Sync audio (from mic) with stream
6. When the stream ends can redirect viewers to other live channels.
7. Get recommendations of channels based on the followed channels

Note: Subscribing a channel costs money so you can create a dummy payment system. For this problem statement you can use following libraries

1. OpenCV
2. Webcam Capture API (<https://github.com/sarxos/webcam-capture>)
3. Xuggler

OPEN THEME



DIFFICULTY: VARIABLE

In case you don't find any of the above problem statements interesting and have any other idea in your mind, then go ahead with that.

But please make sure to describe your idea in detail in abstract submission and carry on with the same idea throughout.

