

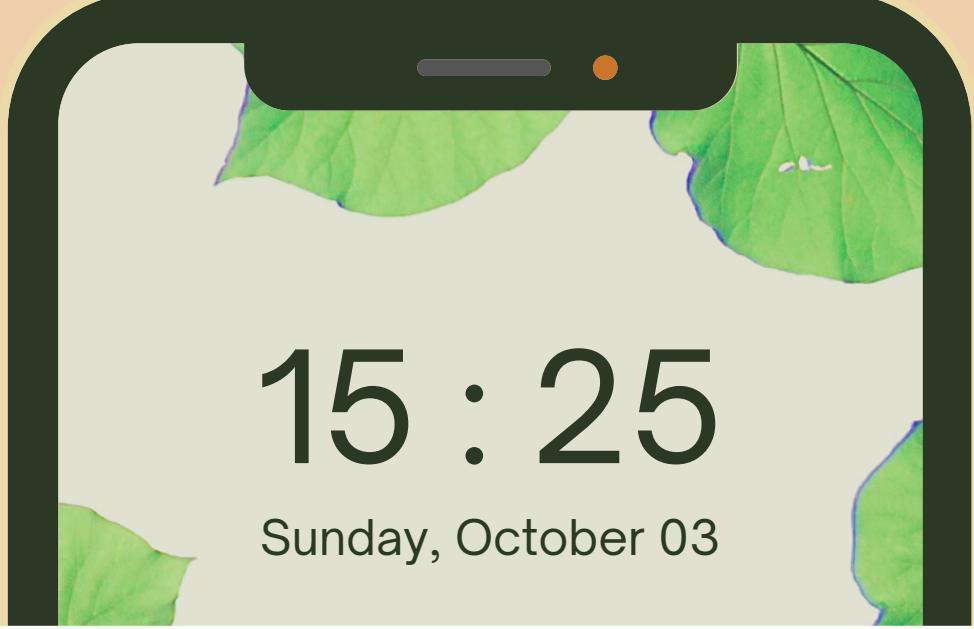
DROIDRUSH PROBLEM STATEMENTS

Stop dreaming and start doing.



Android MNNIT





15 : 25

Sunday, October 03



SUNDAR PICHAI

2m ago

Android was intended to be very customizable. And we welcome innovations.

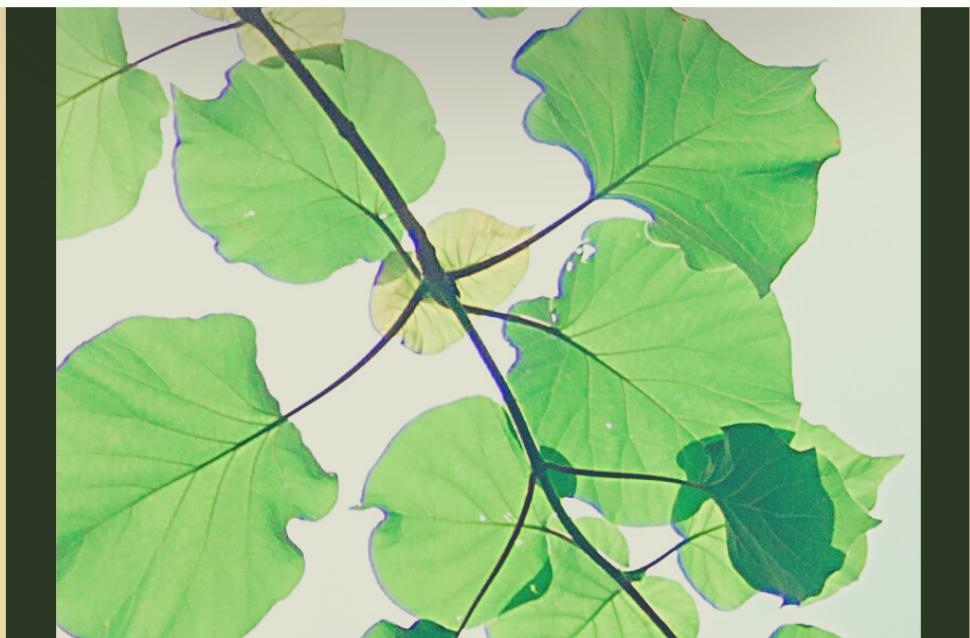


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RULES AND REGULATIONS

Before you start developing awesome apps, have a look at the rules and regulations so that you don't end up with disqualification.

1. This is a team event of maximum 3 members. You can still work individually if you want. Team members can be from any branch. The only constraint is that at least one member of the team should be from the CS/IT branch.
2. You have to build a working Android/iOS app for anyone problem before the deadline. You can contact seniors for any discrepancies/doubts in the problem statement.
3. You'll be required to submit an abstract before submitting a solution, in which you will describe the approach to the problem and any external libraries used.
4. The decision of the judges will be final and binding.

...CONTINUED

5. This is a cumulative scores event. So you need to perform well in all rounds to win.
6. You are encouraged to use any platform to build your application. Native as well as Hybrid platforms can be used (PWAs are not allowed).
- 7. ANY FORM OF CODE PLAGIARISM WILL NOT BE TOLERATED. If any part of the project is found copied the team will be disqualified immediately.**
8. For any problems, queries, questions, or help at any stage, contact seniors or reach out to peers.



SOME FRIENDLY TIPS

1. Focus on making the application user friendly.
Backend is important, but so is the User Interface.
2. The main motive of Droidrush 2k20 is to help you to develop an interest in android development and make you equipped with a skill that you can use lifelong to solve real-life problems.
3. The **Basic/Advanced features are to guide you on your theme. You are free to add more features from your side which would enhance the quality of the app.** You would be judged on your creativity, functionality of your app, User Interface, user-friendliness etc.
4. **Note for first-time developers/beginners:** Your focus should be to complete the project in the given time.

All.
The
Best!



Caution!!!



Beginner level statements
ahead.

OK

Got It



Seth Ji doesn't trust WhatsApp/ Slack/ Signal and similar apps because he thinks that his firm's data might get compromised. He wants you to create a chat app for the organisation which is rich with features and also secure. The requirements are:

Baatcheeet

BASIC

1. User profile (using mobile number)
2. 1-1 chatting
3. Group chatting
4. File sharing
5. Previews for images
6. Contacts sharing
7. Location sharing
8. Text status for 24 hours
9. Starring messages
10. Searching messages
11. Message archiving

Baatchet

ADVANCED

1. Notifications
2. 1-1 calling
3. Group calling
4. Video previews (thumbnail)
5. In-app photo viewer
6. In-app audio player
7. Read receipts
8. Online presence status
9. In-app camera
10. Single chat/group notification muting
11. Group invites
12. QR-Code based chat to me links
13. Broadcast



Okneplaacement



You, Chitra's boyfriend's friend (Chitra being the daughter of Seth Ji), is frustrated with TPO (Training and Placement Office) MNNIT not having an app for notifications and registration of companies and having to log in to the TPO portal every time for simple stuff. Out of frustration, you decided to make an app for the same and donate to TPO.

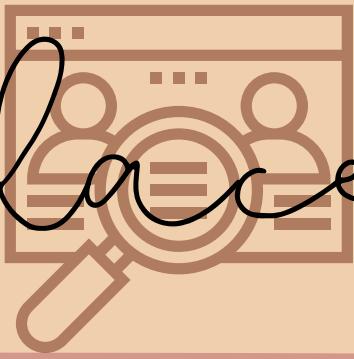
You asked the TPRs (Training and Placement Representatives) for the requirements and listed some of your own. The requirements document finally looks like this:

OkPlacement

BASIC

1. Display the basic information for each student like name, registration number, photo, TPO credits, etc.
2. Students can register/update their profiles through the app.
3. Information about the upcoming companies (job openings) like their CTC, Job Location, Job Profile, etc.
4. Option to apply for an opening and view applied openings.
5. Statistics of the current and past placement session like the number of students placed, average CTC, etc.
6. TPRs can be provided with admin privilege and will have the following powers:
7. TPRs can verify user data and lock editing of content any further (resume can still be updated).
8. TPRs can mark a student as placed, in such case the student can't apply to newer job openings.
9. TPRs can reduce the TPO credits of students, students with TPO credits less than 4 cannot apply to job openings.
10. Grievances/Feedbacks section
11. Notice board

Okneplacement



ADVANCED

1. Represent placement statistics through interactive graphs and charts.
2. Add notification feature for upcoming companies.
3. An option for adding interview experiences filled by placed students.
4. If point 3 is made, an option to read interview experience (sorted/searched by Year and Company).
5. Rich Text Editor for writing Interview Experiences.
6. Search other student's placed/unplaced status and company names.



Oneplacement

WHAT DOES PROFILE CONTAIN?

- **Personal**

Registration number, name, course, branch, DOB, e-mail, Skype ID, LinkedIn URL, gender, category, physically challenged or not, residence status (hosteller or not), guardian, present address, permanent address, marital status, state, country.

- **Academic**

10th and 12th: school, board, year and percentage

BTech: semester wise SPI, CPI

- **Project/Intern**

Has 2 sections, project and internship.

Each project has a title and description.

Each internship entry has an organisation and description.

- **Photo and Resume**

This section is always editable, even when the profile is locked.

This app has a huge bonus for a self-made backend.

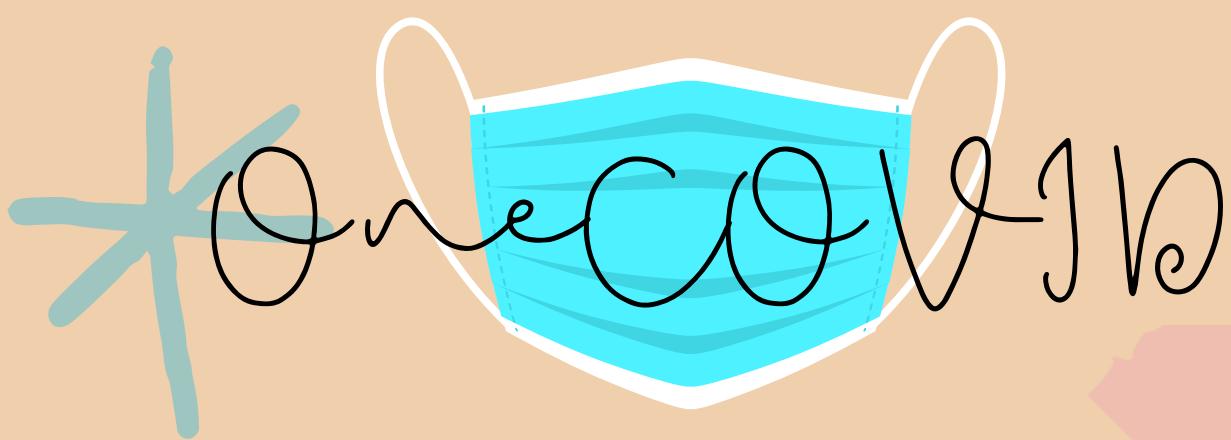
Caution!!!



Beginner-Intermediate
level statements ahead.

OK

Got It



Chitra, being the manager of Seth Ji's work, has decided to make a COVID-19 vaccination app for their Gold firm. But she doesn't know the A-B-C of App development. She asks you, the friend of her boyfriend to make the app and you'll be rewarded with cold-hard-cash. The requirements are:

BASIC

1. Table showing COVID-19 cases, vaccination, testing details
2. Vaccination Certificate download
3. Vaccination Certificate verification
4. Vaccine slot availability checking by Pincode and State + District names
5. For vaccine registration:
6. beneficiary registration
7. vaccination slot booking (appointment)
8. beneficiary data correction via grievances
9. For vaccinators, marking beneficiary as vaccinated on CoWIN after vaccination



ADVANCED

1. Interactive graphs/charts of:
2. case details
3. testing details
4. vaccination details
5. Show your creativity here!
6. The table made in 'Basic' above should be sortable by all columns
7. Show bubbles of different sizes corresponding to cases of every state in India, similar to the one shown here:
[covid19india.org: Coronavirus Outbreak in India](https://covid19india.org/)
8. Time series chart of cases/vaccination/testing with appropriate scales.



OneCOV19

BONUS

Contact tracing via low power Bluetooth

SUGGESTED APIs

- API Setu: public, protected, vaccinator APIs
(more details: Guidelines for Integration of
Co-WIN with Third-Party Applications
Developed by Ecosystem Partners)
- data: COVID19-India API



Seth Ji's son is tired of using MS Paint to make memes. He is on the lookout for an app that can make his life easier as a Memer and the class clown. He reaches you via LinkedIn to make an app and in return, he will use Seth Ji's influence to help re-open college. He has the following requirements:



BASIC

1. Categories of memes and searchable meme templates.
2. Ability to choose from existing templates and/or load custom images.
3. Meme examples (templates have some examples which can be seen and edited).
4. Movable text.
5. Image embedding (stickers).
6. Font family/color/size/border changes.
7. Saving as a draft.





ADVANCED

1. GIF/Video memes.
2. Prank breaking news making with rich text support.
3. Quote image-making (example:
<https://i.pinimg.com/originals/f5/3a/27/f53a270dc7b364972904d07e4874051a.jpg>).
4. Lazy loading of Meme templates list.
5. Initially the list should show only previews and then the complete image is downloaded once the template is selected. Caching of popular and favourite memes of users.

For samples see Meme Generator or Mematic apps.



Book a Court

Seth Ji is a sports enthusiast and playing is one of his favourite leisure activities.

He frequently visits a nearby sports academy but often returns disappointed after finding out that all the courts are occupied. He wants you, his daughter's friend, to build an application through which he can book a court in a sports academy based on its availability and enjoy a hassle-free experience of playing.

Book a court



BASIC

1. A sports complex can register itself with its location, name, types of sports, number of courts, hourly court price as information.
2. Add pictures/videos of the courts.
3. Search a sports complex by its name.
4. Search for a specific sport.
5. Rate and review.
6. Sort the list based on rating.
7. Book a court in advance (A sample design is attached below).
8. User's booking history.





ADVANCED

1. Sort the list based on distance/rating
2. Customers should be able to view nearby sports complexes.
3. Notification prior to the time of booking (reminder).
4. Route navigation from the user's location to the sports complex.
5. Payment integration for advanced booking.
6. Chat facility where users and sports complex authority can communicate.
7. QR-Code based booking verification.





Book a Conert

SAMPLE DESIGN

PVR: Mega Mall, Gurgaon
Sun, 21 May

09:40 PM 2 Tickets

GOLD ₹350.00

J	1	2	3	4	5	6	7	8	9
H	1	2	3	4	5	6	7	8	9

PREMIUM ₹350.00

G	1	2	3	4	5	6	7	8	9
F	1	2	3	4	5	6	7	8	9
E	1	2	3	4	5	6	7	8	9
D	1	2	3	4	5	6	7	8	9

EXECUTIVE ₹350.00

C	1	2	3	4	5	6	7	8	9
B	1	2	3	4	5	6	7	8	9
A	1	2	3	4	5	6	7	8	9

All eyes th

Sold Available Selected

Add Free Coupons



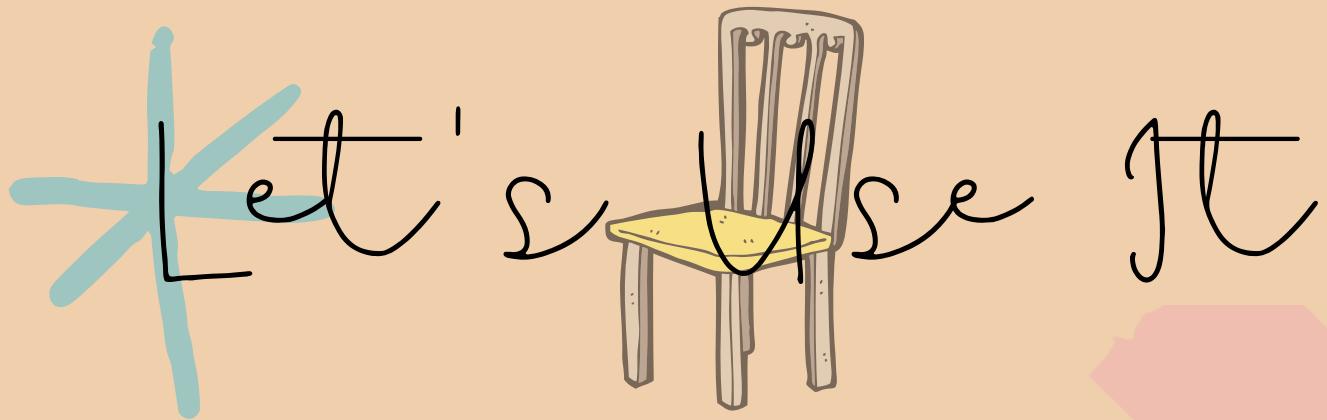
Caution!!!



Intermediate level
statements ahead.

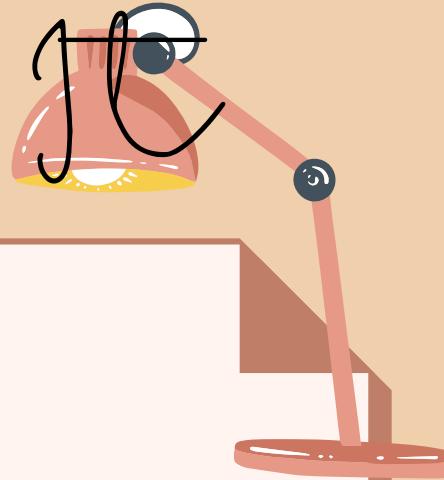
OK

Got It



Instead of selling things, what if Seth Ji wants to exchange it with some other stuff or donate it, just take the goods he is bored with and create an app that can exchange them with goods other people have or instead of exchanging them put them up for donation to the NGOs based upon his requirement.

Let's Use



BASIC

1. Add items for exchange or donation with image, description, and item type, location at which item is available and also eligible exchangeable item/items with respect to the current item.
2. Maintain a user profile with contact detail, location etc.
3. Provide separate registration for NGOs, and show donation items to NGOs only.
4. Provide ratings and reviews to particular users based upon the ratings given to previous items exchanged.
5. Provide a feature to search for any item.
6. Sort searched items based upon the ratings (Pt 4) of the users.
7. Maintain the item status once exchanged or donated, delete it from the available items.
8. Add a chat feature where users can communicate regarding the exchange.



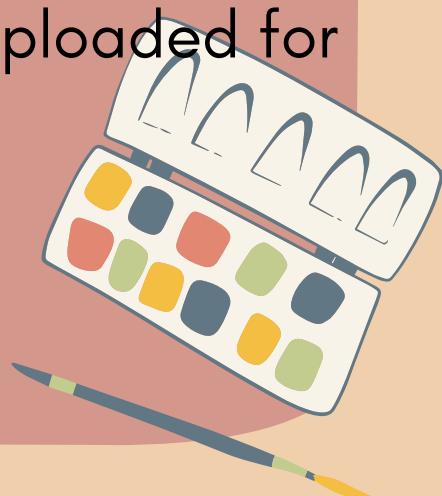


ADVANCED

1. Add a video demonstration of the item.
2. Sort searched items based upon distance.
3. Show items in the home page based upon users search and exchange history.
4. Navigate to the item location using maps.
5. When two items put on for exchange matches notify both the users.
6. Allow lazy loading (loading on demand) of items.

BONUS

Automatic validation of products uploaded for exchange using ML.



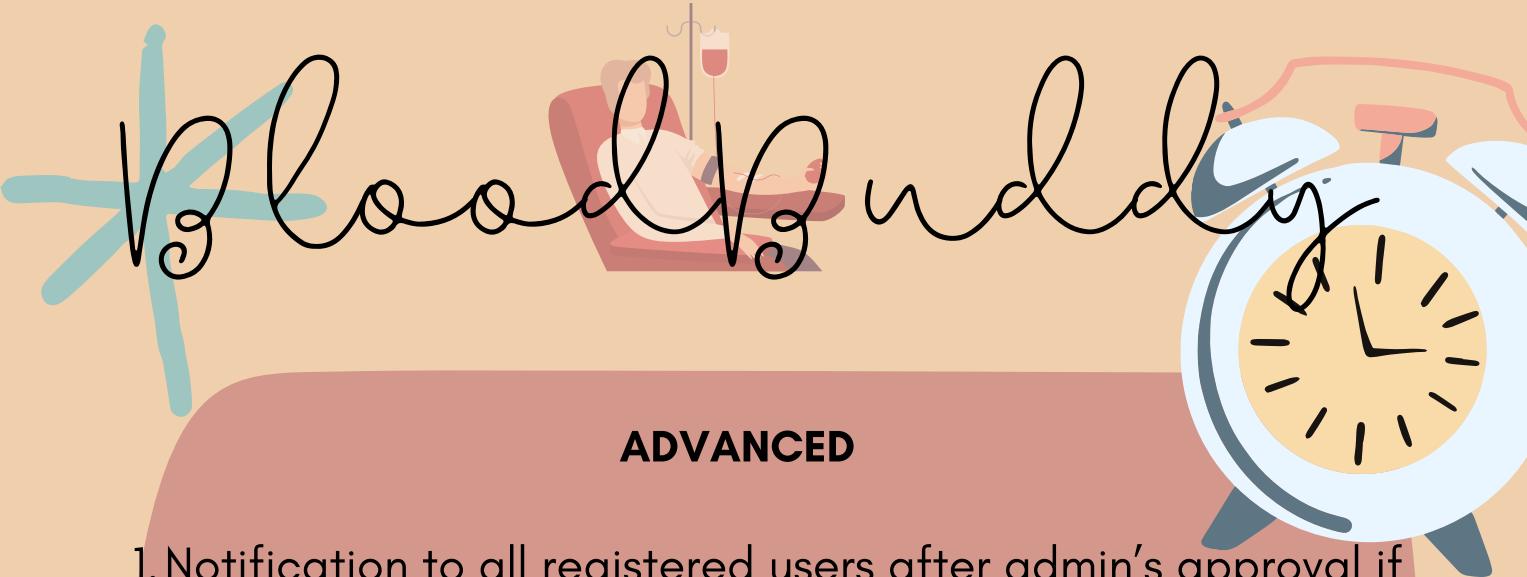
BloodWuddy



Seth Ji being a gregarious person has a lot of connections and receives a request for blood very frequently. He has lost many acquaintances due to shortage of blood, unavailability in time and insufficient reach. He, therefore, asks you, his daughter's engineer friend, to tackle this problem by providing a platform for efficient blood donation.

BASIC

1. Option to raise a blood request:
2. Blood group
3. Amount of blood required
4. Hospital location
5. Patient condition
6. Display list of blood requests
7. Admin login for handling emergency cases and verification of documents.
8. Message/Email notification to admin after a request has been registered.
9. The request will be displayed in the blood request list only after the admin's approval.
10. Valid documents to be submitted before requesting blood donation (so that there isn't an illegal purchase of blood).
11. Blood donors and blood seekers should be connected independently via a chat-based system.
12. Emergency button feature for priority treatment.
13. Cooldown feature after a successful donation.
14. The seeker should be able to cancel the request once no longer required.
15. Notification to registered users (if enabled) of Blood donation camps.



ADVANCED

1. Notification to all registered users after admin's approval if the request raised is within the area limit.
2. Notification to request raiser via Email, messaging if the request has been accepted.
3. Sorting the blood requests on the basis of distance/time/patient's condition.
4. Map feature to get hospital locations(provided by seeker) & directions and to see nearby blood banks/hospitals/camps.
5. Option to share any particular blood request with others on different apps.
6. Multiple language support.
7. Search feature for particular address requests / particular person's requests.
8. History of user's donated/raised requests.

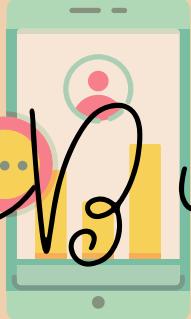
BONUS

Include a chat bot

Sample app: <https://play.google.com/store/apps/details?id=com.simplyblood>



Track Monday



Seth Ji's daughter has been doing a part-time internship while being in college. But she finds it difficult to be organized with all her priorities. Many times she misses her college assignment and sometimes even important work-related meetings or tasks. Help her out with a mobile application that could always keep her on track.

TrackBuddy

BASIC

1. Add Reminders, Notes, Tasks, Events etc.
2. Generate a Calendar showing all these.
3. Implement notifications.
4. Delegate Tasks, Events.
5. Delegation invitation.
6. Share Notes
7. Integrate online meetings with Google Meet / Zoom etc.
8. Attaching Notes to Tasks, Reminders, Events.
9. Attaching documents/images with notes.



TrackBuddies



ADVANCED

1. Geo-Reminders
2. Different authentication methods like googleAuth, mobileAuth, emailAuth etc.
3. Syncing google calendar.
4. Send on-boarding emails to users.
5. Inviting people in events via email.
6. Send notification emails.
7. Chat discussion with delegated users.
8. Rich text addition in notes.
9. Automatically create a reminder if a note contains a time reference.



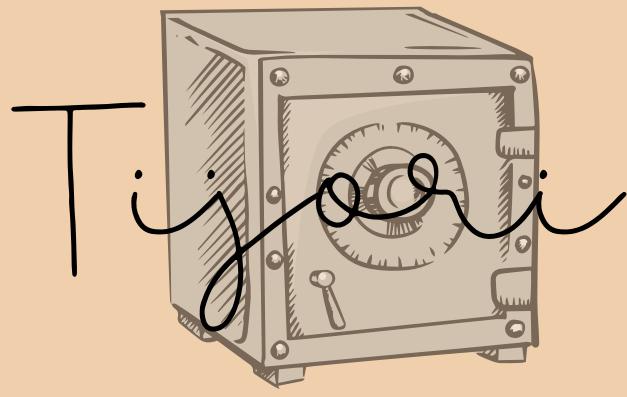
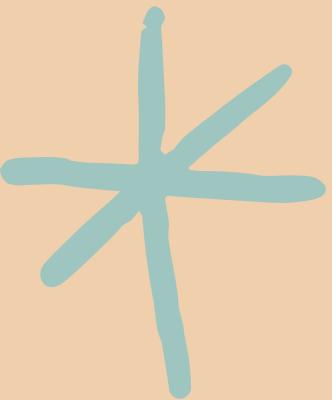
Caution!!!



Intermediate-Advanced
level statements ahead.

OK

Got It



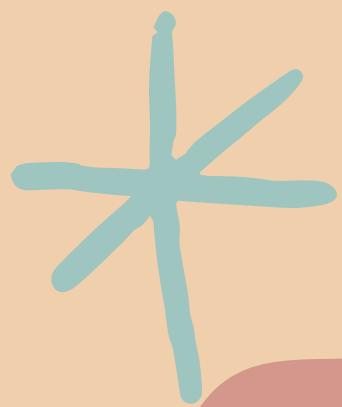
Seth Ji's smartphone has lots of personal data which he doesn't want to compromise. He has 2 workers who are always on the lookout for having his phone in their hand. Seth Ji has hired you to make an App for him to save himself from thievery and promised to reward you with a block of gold. He has the following requirements:



Tijori

BASIC

1. He should be able to lock photos, videos and PDFs.
2. Option to automatically delete files once locked by the app.
3. Fingerprint/Pattern/Number unlock.
4. Picture/PDF viewer and video players inside the app.
5. Set password recovery.
6. Replace the app icon from the app to help disguise the locker app.
7. Intruder selfie, to catch which worker is the thief.
8. Fake password, such that Seth Ji can log in and show that Tijori is empty.
9. Secret Browser, so that the workers don't get to know that Seth Ji uses online banking.
10. Screenshot protection.
11. Phone place down action. For example, close the app and open another app.



Tijori



ADVANCED

1. He should be able to lock apps.
2. Temporary disable applock.
3. App screen should not be visible while sharing the screen using apps like Microsoft teams (he has kids who attend online classes).
4. App delete protection.
5. Gallery slideshow with animation.
6. Data backup (on cloud possibly).
7. Folder formation.
8. Data Encryption.
9. Secret app lock cover, so that app looks like it has crashed (or something similar) but opens on making some secret gesture (like sliding from left to right or pressing an invisible button).



Melohiotes

Seth Ji's son has recently developed the taste of rock music, he formed a college band to quench this musical thirst. But he realised that to perform legendary music by bands like GNR, AC/DC, they have to spend time with their music and should carefully listen to different instruments and their solos, to perfect them out. So they are looking for some music application that they can use to resonate with rock n' roll.



BASIC

1. Upload and save local audio/music files
2. Create Playlists, Albums etc.
3. Trim feature, saving some section which you like from the entire song.
4. Music-stop timers, for those who fall asleep with headphones on.
5. Highly customizable song queue.
6. Online music, use some API for searching music.
7. Search and filters based on Artists, Genre etc.





ADVANCED

1. Share playlists or music.
2. Sync in your music library from Spotify, Amazon Music.
3. Alexa, google assistant integration.
4. Music suggestion.
5. Party-Groups, where several users can listen to music together.
6. Add a section for artists and make a provision for listeners to donate or pay the artist.



Caution!!!



Advanced level
statements ahead.

OK

Got It

Parcheesi

Seth Ji has some small kids too. When on Sundays the firm is closed everyone is free at home. They decided how cool it would be if there was an app that allowed them to play Ludo over the internet/ Wi-Fi while sitting in their respective rooms. You, again, Chitra's boyfriend's friend are asked to build this.

Here you go:



BASIC

1. 2-4 Offline players
2. People can register and make their profile (preferably using Google Play Games)
3. Players can play over the internet.
4. Friending/ room making by searching using usernames.
5. Online play can also work by joining random players across the globe.
6. Players can chat and send reactions while playing the game.
7. Leaderboard formation among friends and globally for online players.





ADVANCED

1. Players can play over Wi-Fi.
2. Animations on winning, losing, game start, special game events, rolling dice, etc.
3. Sound effects.
4. User levels support (in random matches, same level users should be matched up)
5. Daily challenges/ achievements for quickly levelling up.
6. Additional QR-Code based pairing.

BONUS

AI bot for playing against the computer.



Chitraaagan



Seth Ji's daughter is an Instagram influencer. She captures lots of photos in different locations and with different people and then has trouble searching them. She saw iOS 14's Gallery app on Seth Ji's phone and asked him to buy her an iPhone. But Seth Ji being a good Dad doesn't want his daughter getting spoiled and bought her a cheap Mi device. Chitra has a boyfriend in MNNIT who knows you, the faad developer. Help Chitra build an equivalent app with the following features:



BASIC

1. All photos view (Date wise)
2. Folder wise view
3. App wise view (like images of WhatsApp, Telegram, Instagram, FB clubbed separately)
4. Location wise view
5. People wise view (photos clubbed together of one person) [ML powered]
6. Basic image editing
7. Photo hiding
8. Recycle bin
9. In-app image sharing to other users
10. Video auto-play
11. Collage formation
12. Slideshow
13. Set as wallpaper
14. Favourite photos/user





ADVANCED

1. Person and Location tags in single photo view
2. Automatic photos categorisation (moment, animals, food, indoors, garden, etc)
3. Image contextual searching (eg, search 'cake')
4. Display images on Map. Images club together as Map is zoomed out.
5. ML algorithms run only while Phone is being charged.
6. Advanced image editing, like AR stickers.
7. Cloud sync
8. Automatic slideshow generation (yearly/monthly summary)
9. Automatic sharing suggestion (based on previous shares)
10. Automatically suggest stitching multiple similar images into panorama.

For sample see Photos app on iOS 14 (quite similarly capable apps are present in Oppo/Realme too).

15 : 45

Sunday, October 03

Open Theme

This is not a problem statement and has no hardness level associated with it.

If you are not pleased with any of the statements above or have something new in mind, you can make that. The only condition is that it should belong to one of the following themes:

1. Finance

2. Education

A business model for the product you create will be appreciated.

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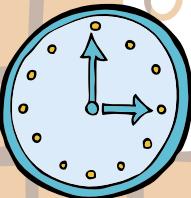
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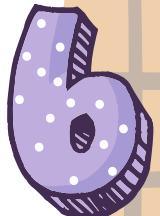
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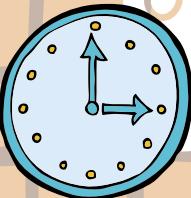
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