
JADY
Pursuing a bettter way of life

JADY TRACK +

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JADYTRACK

PROJECT IDEA

JadyTrack allows you or your loved ones to track and share your current LIVE location in real time as easy as 1,2,3! Simply open the app, set your destination and geofence customization, then tap go! It will then create a new QR code (or link) that you can share with your peers so that they can track you for the current session. Also JadyTrack isn't going to spy on you, compared to our competitors, we believe that privacy is your privilege, so we won't track you 24/7. JadyTrack only works per session, so once the session is done, that's it!

Goal & Vision

“Know whats going on,
don't worry about...”

FEATURES

FAMILY FRIENDLY

Now families, can easily keep track of their children's whereabouts, and see the routes that they took to reach their destination and get automatically notified when the child has reached the vicinity of their destination.

COUPLES FRIENDLY

Couples can also make sure that their loved ones are where they are supposed to be by drawing a customizable virtual fence around their supposed destinations and get automatically notified if their partner has left the virtual fence. No more worrying about those sudden late night extra shifts that your partner is suddenly taking!

BUSINESS FRIENDLY

Managers can even keep track of their employees who are doing outfield work and set virtual fences and get notified whether the employee has left the virtual fence or is following their route.

WORRY LESS

You can now protect your loved ones by setting up safe zones through custom virtual fences that will notify you if your loved ones has left the safe zone.

QUICK CHECK IN

No more of those annoying "where are you?" messages from your loved ones and instead just tap the "check-in" button to quickly let your loved ones know that you have arrived to your location.

START/STOP ANYTIME

Currently broadcasting your location and want to stop broadcasting? Simply select the option on our app and that's it! Your peers will be notified of you turning off your app.

SOS BUTTON

Easy to access "SOS Button" will quickly send an "SOS" alert and notify your connected peers.

MULTIPLATFORM

Access JadyTrack directly on your favorite web browser through our web page to continue tracking right from your PC!

VIEW HISTORY

Every session conveniently saves the location and trip history

"With JadyTrack, there's just one less thing to worry about"


PRODUCT ROADMAP

JADYTRACK

FINAL DEVELOPMENT SCHEDULE

Sprint 1

Early throwaway prototyping, prototype development, and planning the back end structure. **(24/01/2019)–(06/02/2019)**

Sprint 2

Mobile app prototype development and back-end development (through throwaway prototyping).
(07/02/2019)–(20/02/2019)

Sprint 3

Mobile app development and start developing web version. **(21/02/2019)–(06/03/2019)**

Sprint 4

Mobile app development and web development and start documentation.
(07/03/2019)–(20/03/2019)

Sprint 5

Testing, documentation, prototype corrections.
(21/03/2019)–(03/04/2019)
NOTE: This sprint eventually got delayed due to mid term exams and overall lack of time considering the task difficulty. This meant that an additional sprint is needed to finish the previous tasks.

(EXTENDED) Sprint 6

Additional sprint added in order to catch up on carried over tasks including the testing, documentation, and prototype corrections from Sprint 5.
(04/04/2019)–(17/04/2019)

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USERS/STAKEHOLDERS

Target [TRG]

Orang yang membuat janji dengan memberikan lokasi yang akan dikunjungi dan kemudian memberi akses kepada viewer agar posisinya dapat dilacak oleh viewer.

User [USR]

Pengguna siapa saja yang terdiri dari viewer/target atau belum memilih untuk menjadi viewer/target.

Viewer [VWR]

Orang yang akan menerima janji dari target yang dapat melacak lokasi target dan pergerakkannya sesuai dengan janji yang telah dibuat.

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PRODUCT BACKLOG TARGET

Story ID	Story name	Status	Est. Size	Planned Sprint	Priority
TRG1	As a target, I want to be able to be affected by a geofence.	Done	10	1	Critical
TRG2	As a target, I want to be able to get and share my current location	Done	10	1	Critical
TRG3	As a target, I want to be able to set my destination	Done	5	1	Critical
TRG4	As a target, I want to have a “check-in” button to manually toggle that I have arrived at the destination and inform my peers that I have arrived	Done	10	1	Critical
TRG5	As a target, I want to be able to generate a link/tracking ID to be able to share it with my peers	Done	5	2	Critical
TRG6	As a target, i want it to be able to auto notify if I have reached/arrived at my destination	Done	5	2	Critical
TRG7	As a target, I want to have an easy start button & functionality	Done	3	2	High
TRG8	As a target, I want to give notification to my viewers if my internet connection is turned off	Done	5	2	High
TRG9	As a target, I want to have a "Stop broadcasting" button to stop broadcasting my location	Done	3	2	High
TRG10	As a target, I want to have it to enable GPS setting/ask for location permission on the phone automatically	Done	1	2	Low
TRG11	As a target, I want to be able to view my current status (currently broadcasting/not & current session's information)	Done	7	2	Low
TRG12	As a target, I want to be able to send an SOS notification to my peers.	Done	3	3	Medium
TRG13	As a target, I want to be able to generate QR code so I can give it to my viewer to track me.	Done	7	3	Critical
TRG14	As a target, i want this app to be able to expire my QR Code & Link	Done	4	3	Low

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PRODUCT BACKLOG USER

Story ID	Story name	Status	Est. Size	Planned Sprint	Priority
USR1	As a user, I want to be able to create an account or register	Done	5	2	Critical
USR2	As a user, I want to be able to log in to my account	Done	5	2	Critical
USR3	As a user, I can choose whether to be a viewer or a target	Done	5	2	Critical
USR4	As a user, I want to be able to view the target with multiple devices in sync	Done	10	3	High
USR5	As a user, I want the mobile app to be easy to use and easy to understand GUI.	Done	5	4	Medium
USR6	As a user, I want the web version to be easy to use while also having a nice design	Done	10	4	Medium
USR7	As a user, I want to be able to view a help menu	Done	5	5	High
USR8	As a user, I want to be able to view the documentation if needed	Done	10	5	Medium
USR9	As a user, I want to be able to leave feedback/contact the developers	Done	5	5	Low

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PRODUCT BACKLOG VIEWER

Story ID	Story name	Status	Est. Size	Planned Sprint	Priority
VWR1	As a viewer, I want to track the route where the target went.	Done	5	1	Critical
VWR2	As a viewer, I want to be able to set the destination	Done	5	1	Critical
VWR3	As a viewer, I want this app to be able to cancel/close tracking the current target	Done	2	1	Critical
VWR4	As a viewer, I want to be able to start tracking by inserting link/tracking id	Done	7	2	Critical
VWR5	As a viewer, I want to be able to make the geofence DRAWABLE, whatever I want it to be.	Done	10	2	Critical
VWR6	As a viewer, I want to be able to make a set appointments with the person I'm tracking so that I can track them.	Done	5	2	Medium
VWR7	As a viewer, I want this app to be able to give notification when the person I'm tracking is crossing the geofence.	Done	5	2	Critical
VWR8	I want to be able to view the current progress on the web version on my PC	Done	10	3	Critical
VWR9	I want to be able to view location history on the mobile app	Done	10	3	Medium
VWR10	As a viewer, I want to be able to start tracking easily by scanning the target's QR code	Done	7	3	Critical
VWR11	I want to be able to set safe zones by setting it on the geofence	Done	5	3	High
VWR12	I want to be able to view location history on the web version	Done	10	4	Medium
VWR13	As a viewer, I want to be able to view easy tutorials	Done	10	5	Medium
VWR14	As a viewer, realtime chat? (FEATURE NOT CONFIRMED) [CHANGED TO: "Set Quick Routes for Premium Users" for Technopreneurship class]	Done	10	4	Critical

Sprint #1

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SPRINT #1 PRODUCT BACKLOG

Story ID	Story name	Status	Size	Sprint	Priority
TRG1	As a target, I want to be able to be affected by a geofence.	Done	10	1	Critical
TRG2	As a target, I want to be able to get and share my current location	Done	10	1	Critical
TRG3	As a target, I want to be able to set my destination	Done	5	1	Critical
TRG4	As a target, I want to have a “check-in” button to manually toggle that I have arrived at the destination and inform my peers that I have arrived	Ongoing /Carryover	10	1	Critical
VWR1	As a viewer, I want to track the route where the target went.	Ongoing /Carryover	5	1	Critical
VWR2	As a viewer, I want to be able to set the destination	Done	5	1	Critical

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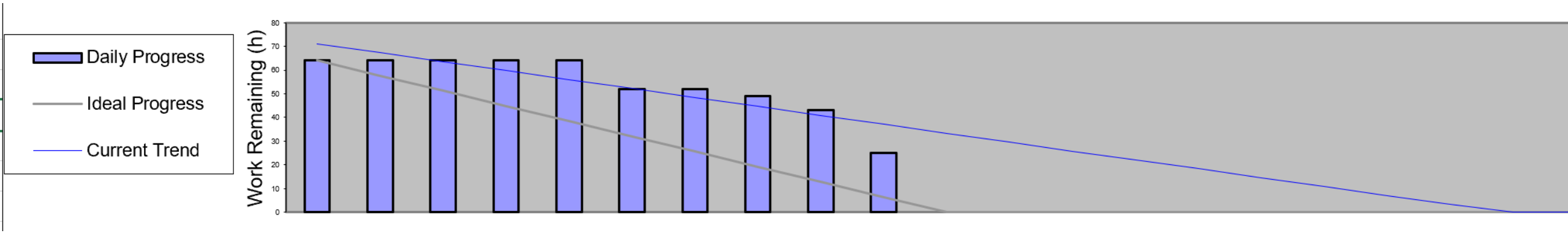
SPRINT #1 BACKLOG TASKS

Task name	Story ID	Responsible	Status	Est. Hours	1	2	3	4	5	6	7	8	9	10
Create a basic geofencing feature for Android that uses a circular shape	TRG1	Deananda	Done	10	10	10	10	10	10	10	10	10	6	0
Remove geofence feature	TRG1	Deananda	Done	2	2	2	2	2	2	2	2	2	2	0
Automatically send a notification (locally on the device) when arrived at the destination.	TRG4	Deananda	Done	5	5	5	5	5	5	5	5	5	5	0
Create "check-in" button's message functionality to message the viewers that they have arrived	TRG4	Deananda	Carryover to sprint 2	5	5	5	5	5	5	5	5	5	5	5
Create a basic server to upload the coordinates	TRG2	Yefta	Done	10	10	10	10	10	10	5	5	2	0	0
Create functionality to set the destination and setup the destination's geofence (to detect if the user has arrived)	TRG3, VWR2	Yefta	Done	5	5	5	5	5	5	5	5	5	5	0
Create functionality to plot multiple dots (from coordinates) on the map	VWR1	Yefta	Carryover to sprint 2	10	10	10	10	10	10	10	10	10	10	10
Create tracking functionality for the route the target took (for every few seconds get the target's current location and save it)	TRG1,VWR1	Andre	Carryover to sprint 2	7	7	7	7	7	7	5	5	5	5	5
Get current location on android	TRG1	Andre	Done	5	5	5	5	5	5	0	0	0	0	0
Broadcast current location on android functionality (every few seconds broadcast's current location)	TRG1	Andre	Carryover to sprint 2	5	5	5	5	5	5	5	5	5	5	5

SPRINT #1 BURNDOWN CHARTS



This graph shows how much work we have missed (this is caused because we spent most of our time for the first week learning the methods and techniques that we have used to create the applications.
We did not meet our ideal progress and as you can see we will be left behind in the next sprint.

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SPRINT #1 RETROSPECTIVE MEETING

Things That Went Well

Business Issues	The product concept and ideas got clearer and more defined as the development went by.
Requirements	The requirements that were not thought of previously started to show up more as the development went by.
Process	Throwaway prototyping is used relatively successfully as the team were not experienced at all in creating an application of this domain and caliber.
Project Management	1. Each person had their jobs divided proportionally. 2. Each person had tasks that were important for the progress of the application
Technology	1. Basic geofencing feature (using circular shape) works well 2. Notification feature working when arriving in a destination (working only locally on the target phone) 3. Destination feature working 4. Uploading coordinates to the database successfully 5. Application can receive location data successfully

SPRINT #1 RETROSPECTIVE MEETING

Things That Could Have Gone Better

Business Issues	1. Some misconceptions about the application rose up across the members as some of the members had different ideas of how they thought the application worked.
Requirements	1. We had some oversight on the requirements and it turns out that we needed to require much more resources to accomplish our goal. For example, it turned out that we needed to use Firebase's real-time database, which we did not really see that we'd use.
Process	1. Our members had too much procrastination and underestimated their tasks resulting in 2. People not finishing the tasks and having to move the current tasks to the next sprint
Project Management	1. Tasks were not that clear for the members/members didn't really understand what they had to do because they did not properly consult the excel sheets for the sprint information. Therefore, we need to implement Trello to help the members understand their tasks more visually on the next sprint. 2. Members also did not properly submit their code either on the correct folder (on Google Drive) and so we need to implement GitHub to manage the code easier.
Technology	1. The geofencing feature were lacking a few Boolean statements that were essential in making sure that the application could determine whether the user was in/out of the geofence. 2. Some of the results of the code were too fundamental and were not modular enough and so it may not be able to be combined with other code from other members 3. The code that were submitted by some members did not contain any comments and so were hard to understand.
Complications	1. A member of our team experienced technical difficulties with his laptop being broken and caused some of the project files to be deleted.

SPRINT #1 RETROSPECTIVE MEETING

Things That Surprised Us

Business Issues	1. The current product backlog had a few minor tweaks that needed to be done since a few features clashed with the business idea and concept.
Requirements	1. The oversight of requirements that we needed.
Process	1. Procrastination and underestimation of tasks from each member caused work to be delayed and pushed back to the next sprint 2. Learning the required knowledge to start to code took longer than expected.
Project Management	1. As it was the first sprint, it was chaotic as each member still had wasn't clear on the project idea 2. It turns out that some of the tasks were overlapping each other and caused some people to inadvertently do some other people's tasks 3. The excel sheet and the product backlog document were not that helpful for the members as they did not want to consult the document before doing their task.
Technology	1. Google Maps API changes in the policy and flexibility caused delays since there were many features that we needed that previously worked and is now locked unless we pay the premium. Since we do not have the budget to do this, it caused us to reconsider and replan some strategies for the application's back-end. 2. Setting up the server and synchronization for the application of our caliber was too hard and so we decided to move to using Firebase's realtime database. 3. Synchronizing notifications between devices was harder to implement than we thought since the target device will need to be notified by the viewer device. Therefore, this will need to be redone in the next sprint. 4. Plotting multiple dots on the Google Maps API was harder to implement than we originally thought for our use case.

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SPRINT #1 RETROSPECTIVE MEETING

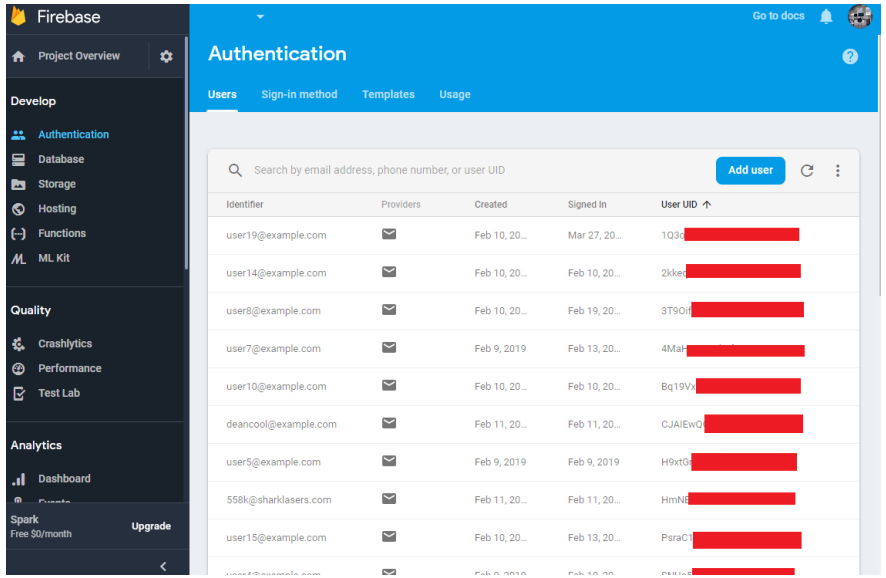
Lessons Learned

Business Issues	1. Modifications to the application's plans will need to be modified since the current development vision of the application differs from the original development vision.
Requirements	1. Extra requirements were needed, not just firebase was needed but later we might need extra services or APIs to help with other tasks from the product backlog on the next couple of sprints.
Process	1. Some people may need to be given a deadline to submit their code for review so that when the code is finally submitted it is actually following the task expected.
Project Management	1. Tasks need to be described to be in more specifically as some people did not do their tasks right. 2. Might need to consider the time for the members to learn (read documentation/watch tutorial videos) before they can do their tasks.
Technology	1. Setting up a NoSQL Realtime database on the cloud through Firebase 2. Integrating the NoSQL Realtime database to an Android application through an API 3. Creating a basic circular shape geofence utilizing Google Maps API. 4. Creating a notification (locally on the phone) when the phone is inside a geofence. 5. Uploading current location real-time to the database on the cloud

SPRINT #1 FINAL THOUGHTS

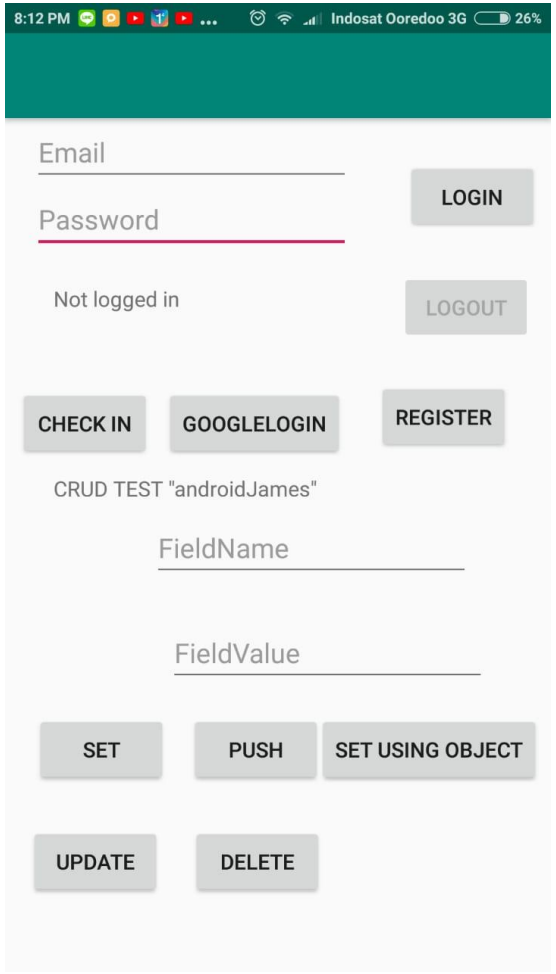
Things to Keep	1. All the throwaway prototypes are working perfectly and will be referred for the next sprint 2. More throwaway prototyping is needed to be done for Sprint 2.
Things to Change	1. The excel sheet was not useful for the members as it was too complicated for the members and so we must start using Trello. 2. The google drive folder didn't really help with unifying the source code location, therefore GitHub will be used for the next sprint. 3. Since the sprint length is two weeks long, too much procrastination happened. Therefore, weekly deadlines will be used in the next sprint. 4. Notification feature need to be tweaked and redone in the next sprint (since we had underestimated the notification functionality) while also maybe adding email notification (if possible) 5. We intended to start with the product/application development in Sprint 2, however it seems like throwaway prototyping is needed again as we are not ready with the important features that are essential for the product. 6. Modify the points estimated for the next sprint in order to suit the developer's skill much more as some developers are not familiar with the APIs and programming language. 7. Change the developers for future tasks to suit the team member's skills. Also change the developers of the tasks that are carried over. 8. Start implementing the more flexible Agile Scrum method where it allows modifications to the scrum board and tasks on the fly (previously, it was pre-determined and was not flexible of plans changing or people's tasks and responsibilities changing).

SPRINT 1 DEMO +



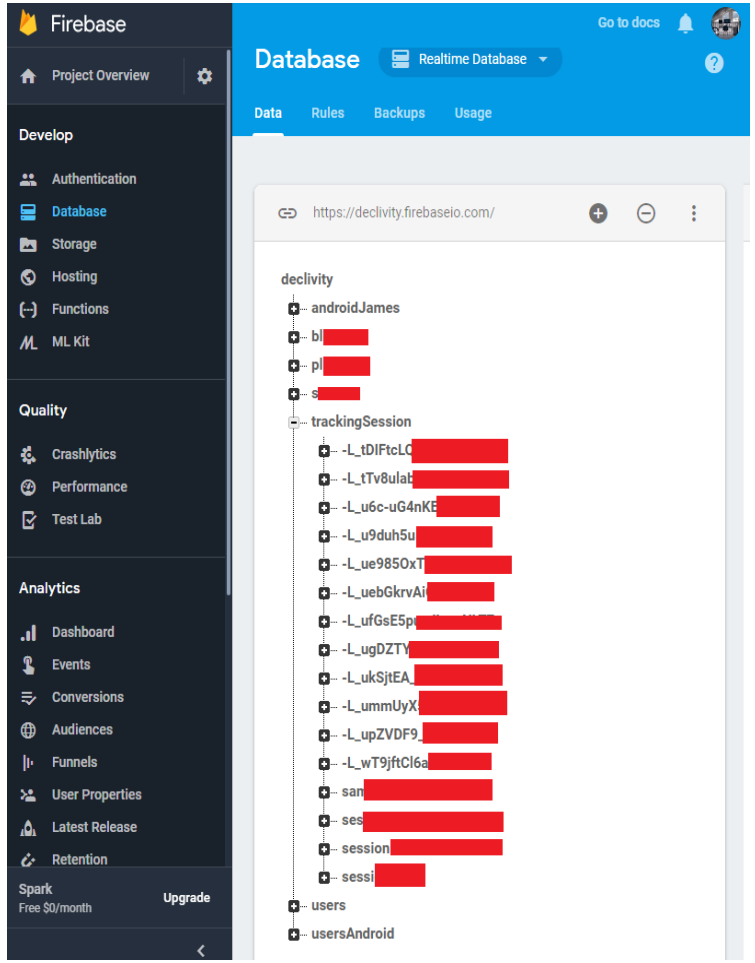
Authentication Server

Working authentication of Android application with the server.



Firebase Throwaway Prototype

Throwaway prototype learning how to use Firebase to communicate with Android.



Database Server

Database server successfully setup to enable communications between client and server.

Sprint #2

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SPRINT #2 PRODUCT BACKLOG

Story ID	Story name	Status	Size	Sprint	Priority
TRG4	As a target, I want to have a “check-in” button to manually toggle that I have arrived at the destination and inform my peers that I have arrived	Done	10	1	Critical
VWR1	As a viewer, I want to track the route where the target went.	Ongoing /Carryover	5	1	Critical
TRG5	As a target, I want to be able to generate a link/tracking ID to be able to share it with my peers	Done	5	2	Critical
TRG6	As a target, i want it to be able to auto notify if I have reached/arrived at my destination	Done	5	2	Critical
TRG7	As a target, I want to have an easy start button & functionality	Done	3	2	High
TRG8	As a target, I want to give notification to my viewers if my internet connection is turned off	Done	5	2	High
TRG9	As a target, I want to have a "Stop broadcasting" button to stop broadcasting my location	Done	3	2	High
TRG10	As a target, I want to have it to enable GPS setting/ask for location permission on the phone automatically	Done	1	2	Low
TRG11	As a target, I want to be able to view my current status (currently broadcasting/not & current session's information)	Done	7	2	Low
USR1	As a user, I want to be able to create an account or register	Done	5	2	Critical
USR2	As a user, I want to be able to log in to my account	Done	5	2	Critical
USR3	As a user, I can choose whether to be a viewer or a target	Done	5	2	Critical
VWR3	As a viewer, I want this app to be able to cancel/close tracking the current target	Done	2	1	Critical
VWR4	As a viewer, I want to be able to start tracking by inserting link/tracking id	Done	7	2	Critical
VWR5	As a viewer, I want to be able to make the geofence DRAWABLE, whatever I want it to be.	Ongoing /Carryover	10	2	Critical
VWR6	As a viewer, I want to be able to make a set appointments with the person I’m tracking so that I can track them.	Ongoing /Carryover	5	2	Medium
VWR7	As a viewer, I want this app to be able to give notification when the person I’m tracking is crossing the geofence.	Done	5	2	Critical

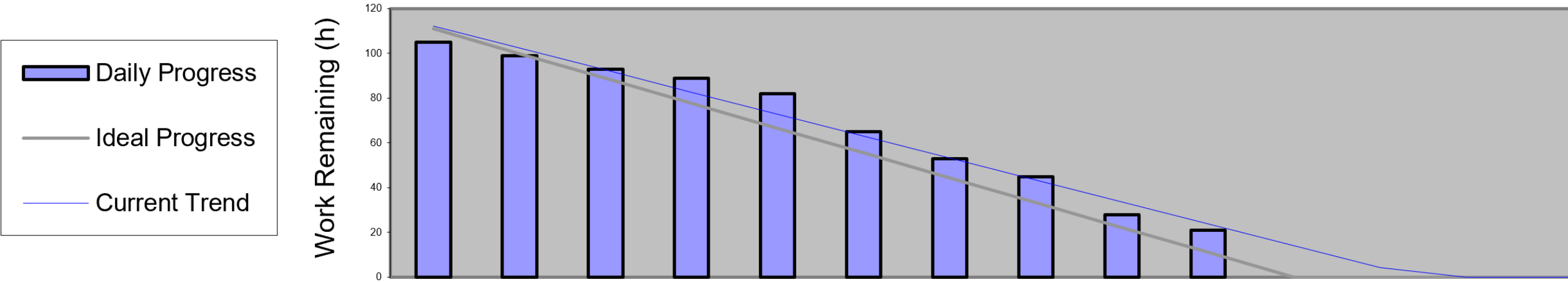
CARRIED OVER FROM LAST SPRINT

JADYTRACK

SPRINT #2 BACKLOG TASKS

Task name	Story ID	Responsible	Status	Est.	1	2	3	4	5	6	7	8	9	10
Make adjustable geofence size	VWR5	Dean	Done	4	4	4	4	4	4	3	2	1	0	0
Notify if geofence is crossed	VWR7	Dean	Done	3	3	3	3	3	3	3	3	2	1	0
Make outer geofence	VWR7	Dean	Done	5	5	5	5	5	5	5	4	3	0	0
Auto notify if reached destination	TRG6	Dean	Done	1	0	0	0	0	0	0	0	0	0	0
Enable GPS if OFF	TRG10	Liem, Dean	Done	2	2	1	0	0	0	0	0	0	0	0
Get current location on android	TRG1	Liem, Dean	Done	5	4	2	0	0	0	0	0	0	0	0
Drawable Geofence	VWR5	Liem, Dean	CARRYOVER to sprint3	15	15	15	15	15	15	15	15	15	14	14
Auto detect internet connection off	TRG8	Yefta	Done	4	4	3	2	1	0	0	0	0	0	0
Start button for broadcast/tracking	TRG7	Yefta	Done	3	3	3	3	3	2	1	0	0	0	0
Auto detect if Target's internet connection is off by looking at the target's timestamp	TRG8	Yefta	Done	6	6	6	6	6	6	5	4	3	0	0
Generate Link/Tracking ID	TRG5	Yefta	Done	10	10	10	10	8	5	3	2	1	0	0
Start tracking from link/tracking ID	VWR4	Yefta	Done	10	10	10	10	9	8	6	5	4	0	0
View current status (currently boradcasting/not, check timestamp??)	TRG11	Yefta	Done	1	1	1	1	1	1	1	0	0	0	0
Stop broadcast button for broadcast/tracking [FOR TARGET]	TRG9	Yefta	Done	2	2	2	2	2	2	2	1	0	0	0
Create tracking functionality for the route the target took (for every few seconds get the target's current location and save it)	TRG1,VWR1	Yefta	Done	5	5	5	5	5	5	4	0	0	0	0
Create account/register/logout (sign in with google)	USR1	James	Done	6	6	6	4	4	4	3	3	2	0	0
Create "check-in" button's message functionality to message the viewers that they have arrived	TRG4	James	Done	3	3	3	3	3	3	0	0	0	0	0
Create account/register/logout (by email)	USR2	James	Done	10	6	4	4	4	3	0	0	0	0	0
Create notification functionality for "Arrived to destination"	TRG6	James	Done	2	2	2	2	2	2	0	0	0	0	0
Broadcast current location on android functionality (every few seconds broadcast's current location)	TRG1	Liem	CARRYOVER to sprint3	5	5	5	5	5	5	5	5	5	5	5
Cancel/close tracking for the current target (basically close the app and end tracking session) [FOR VIEWER]	VWR3	Yefta	Done	2	2	2	2	2	2	2	2	2	1	0
Set appointments	VWR6		CARRYOVER to sprint3	7	7	7	7	7	7	7	7	7	7	7
Create functionality to plot multiple dots (from coordinates) on the map	VWR1	Yefta	CARRYOVER to sprint3	10	10	10	10	10	10	10	10	9	6	6

SPRINT #2 BURNDOWN CHARTS



This graph shows how we spent most of our time working at the last five days of the sprint and how we missed a few tasks and have to carryover to the next sprint.

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SPRINT #2 RETROSPECTIVE MEETING

Things That Went Well

Business Issues	Modifications with the business plan and the streamlining of the product backlog and tasks have helped with making things clearer with the team.
Requirements	Requirements that were needed previously that we didn't think of in the first sprint are now implemented, however it is still in progress.
Process	Better and clearer overall picture that the team have about the final product and how to do it.
Project Management	Trello helped tremendously in making sure that each person knows what their tasks are
Technology	1. User registration and login feature is implemented. 2. Multiple marker functionality successful 3. Successfully able to adjust radius of the geofence 4. Successfully implemented target and viewer modes 5. Successfully able to connect with the online real-time database and do CRUD (Create Read Update Delete) 6. Aplikasi sudah dapat menerima data lokasi target secara realtime 7. Able to see if the target is online/offline functionality 8. Target is able to see their status, start a broadcast, get a tracking ID. 9. Viewer is able to track a target 10. Design concept for the UI is created through Adobe XD

SPRINT #2 RETROSPECTIVE MEETING

Things That Could Have Gone Better

Business Issues	1. We need to create a survey to see the important aspects of the product and to help with UI creation
Requirements	1. Viewer needs to add marker in viewer mode 2. Marker points history needed 3. Make notifications about status information (tracking/broadcasting) 4. Make starting point and destination point 5. Able to add point history to database 6. Make handler to be able draw points in if maps set in home 7. Able to choose picture for every marker
Process	1. Procrastination is still a major issue 2. Communication delays are an issue 3. People did not get their tasks done in time
Project Management	1. Not everybody uses the SCRUM task board, therefore it is hard to see whether a task is completed or not. 2. We should have started to combine all of the code from the developers together into our product, however we did not since we still had to do throwaway prototyping since our developer team are still learning how to code their tasks. 3. Should use GitHub for versioning the app
Technology	1. Geofencing polygon is still in progress 2. Map marker's is already implemented, however when combined with the geofence feature it faced issues. 3. Need to fix and create a handler to see and check if the internet connection is weak (not disconnected). 4. UI and codes must be able to adapt the screen orientation (landscape or portrait)

SPRINT #2 RETROSPECTIVE MEETING

Lessons Learned

Business Issues	1. We need to find out our target market to see our application's needs so that we can adapt the application to the needs. (Design, functionality, ease of use, etc.)
Requirements	1. There are still more requirements that we have not thought of that are important.
Process	1. Deadlines will now be heavily enforced. 2. Combining and adapting code together from multiple different sources
Project Management	1. Creating the sprint documentation takes longer than expected
Technology	1. Firebase authentication to help manage signing in and registering on our application through Android and Web 2. CRUD (Create Read Update Delete) and synchronizing it with Firebase in real-time 3. Listening to data in real time from firebase 4. Creating and modifying markers in Maps API 5. Handling internet connections, enable/disable broadcasting 6. Adobe XD helps a lot in designing UI before we create it in code

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SPRINT #2 FINAL THOUGHTS

Things to Keep	1. The throwaway prototypes that we have created shall be finally used for the final product.
Things to Change	1. The next sprint will focus on the product and not on throwaway prototyping anymore. 2. Update the product backlog and next sprint's tasks with the new additional features that we need to implement

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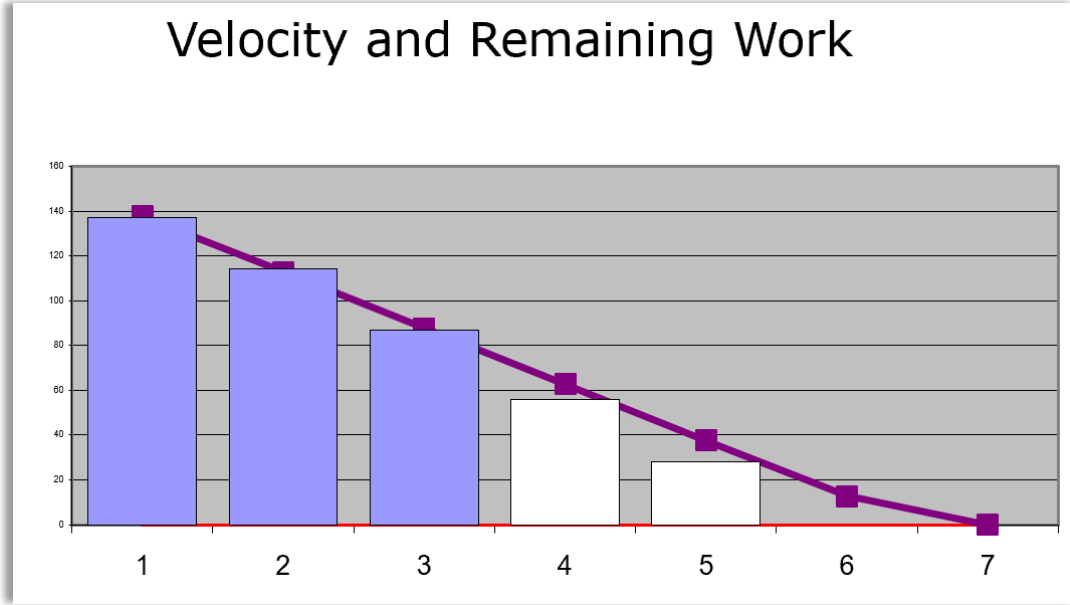
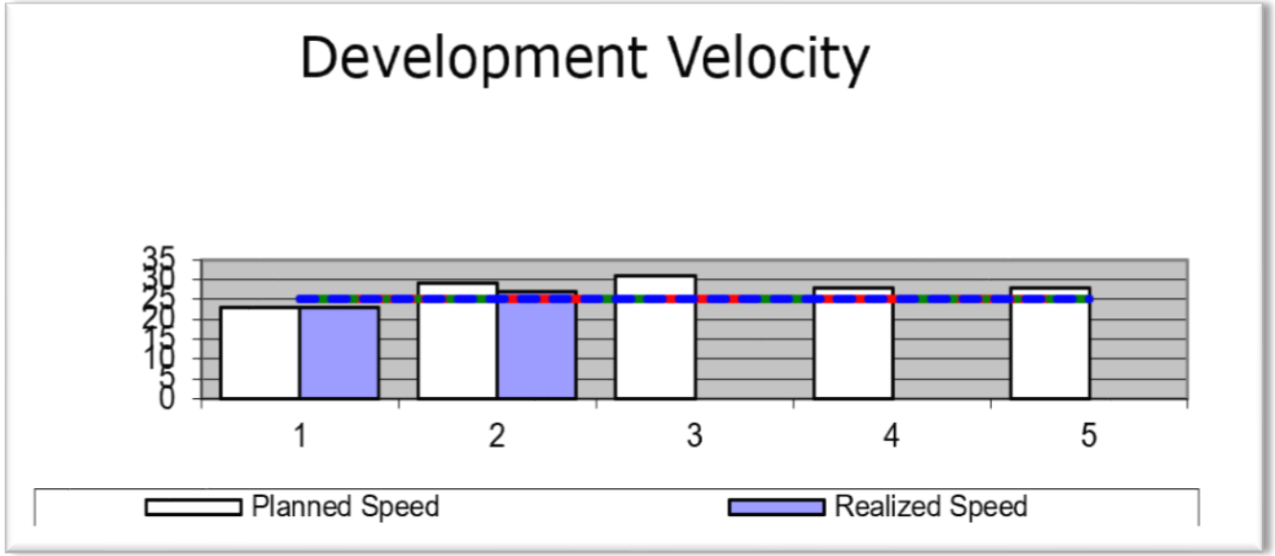
VELOCITY CHARTS FOR SPRINT#1 – SPRINT #2

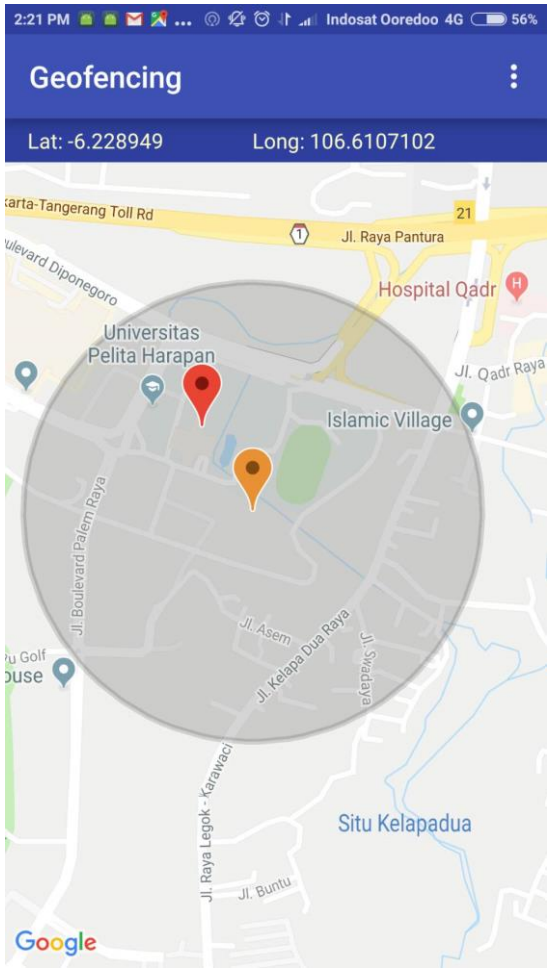


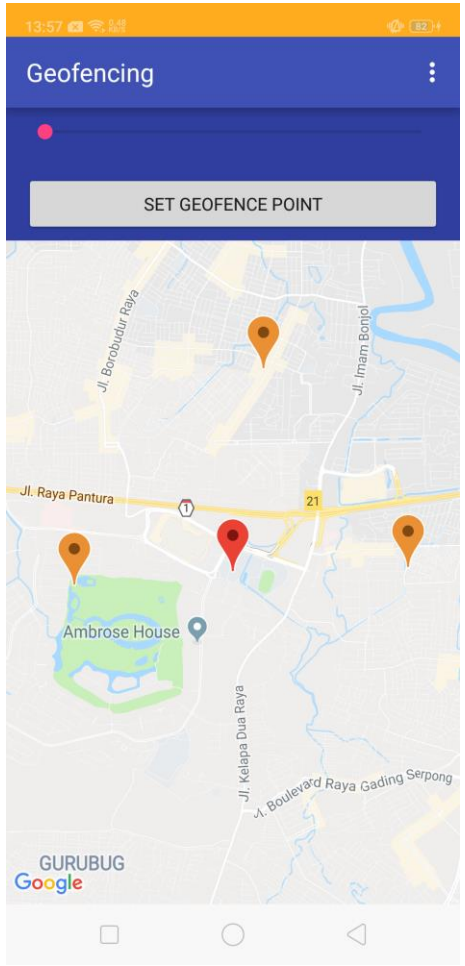


This graph shows the remaining work that should be done (there are 5 sprints for now).

Sprint 1 and sprint 2's development velocity shows that we are just below the planned schedules.

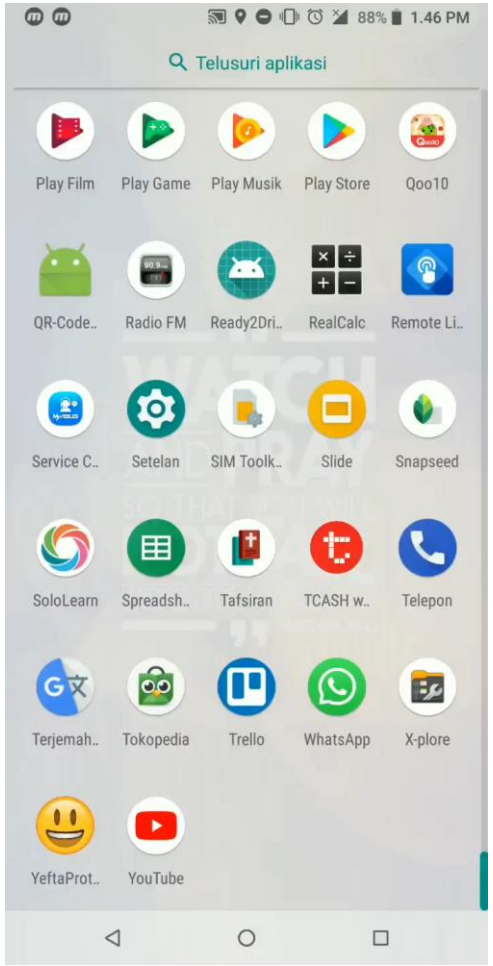
SPRINT 2 DEMO





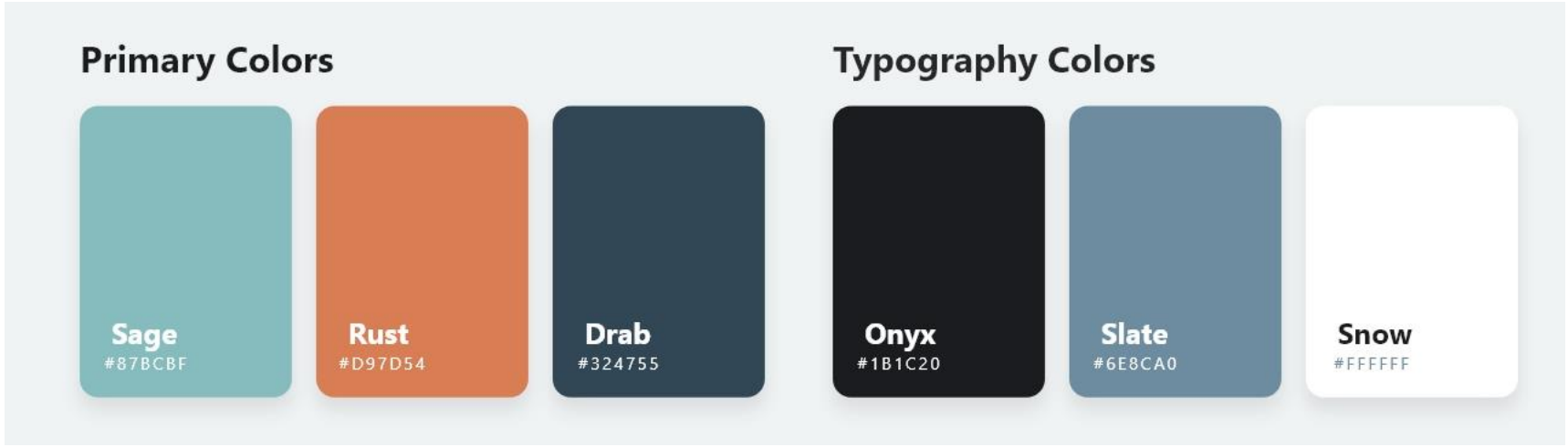
Multiple Marker & Geofence

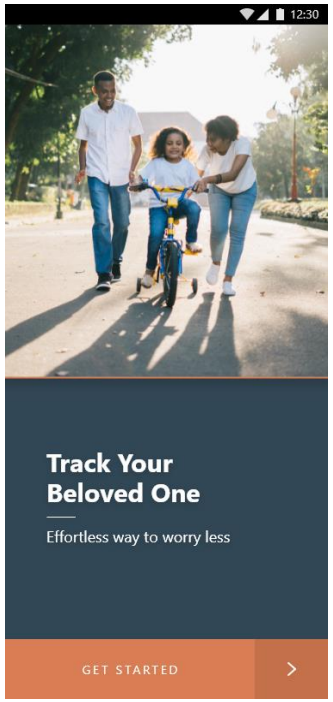
Draw multiple marker in a map and make a geofence in destination marker and geofence marker.

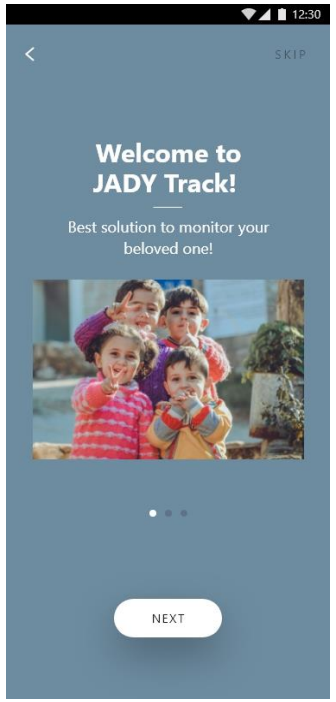


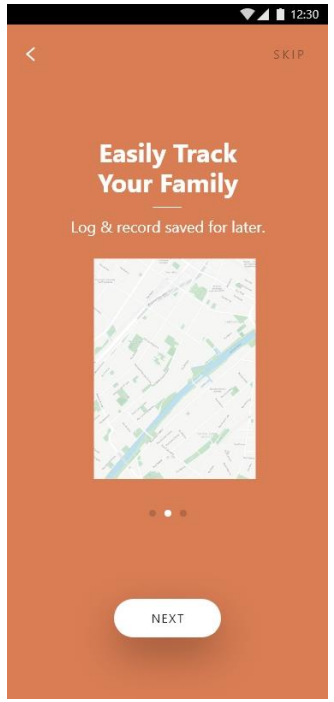
Target & Viewer Demo

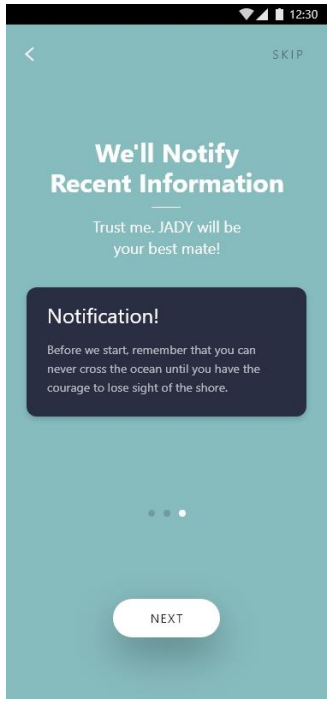
Shows the function of the application for tracking and broadcasting.











Splash screen or get started of the application.

SPRINT#2: UI DESIGN

CONCEPT

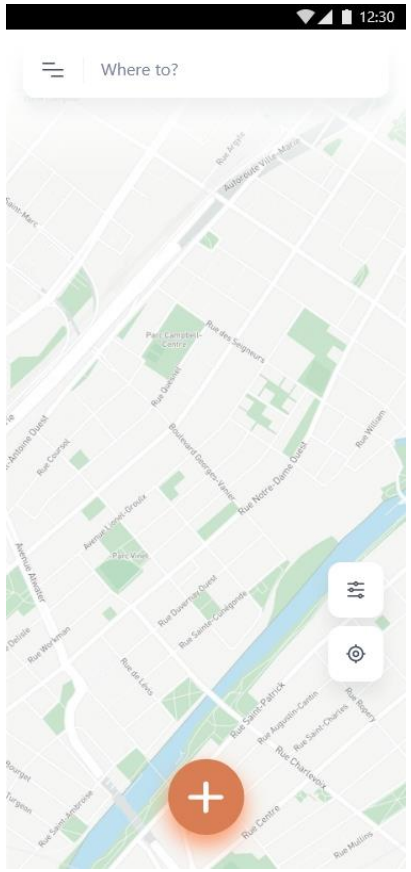
Color Palette

We use light colors to create family-friendly vibes in UI design. Readability in every section in the app become the majority factor for designing the UI.

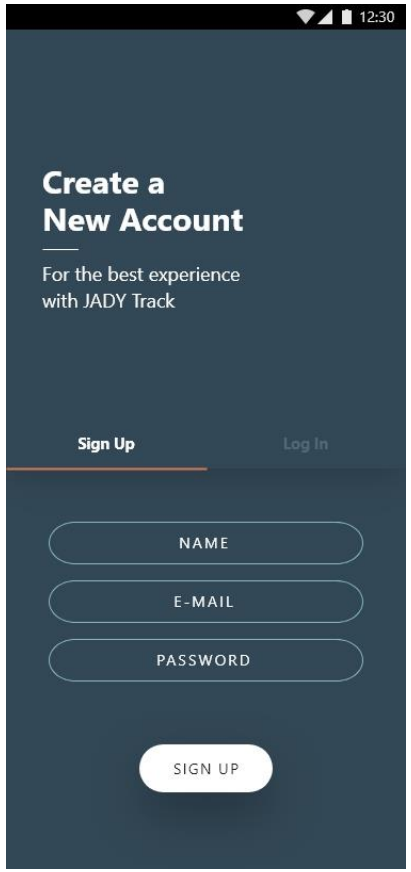
Buttons, and interactive animation will be put in the UI so the user won't see the application too stiff.

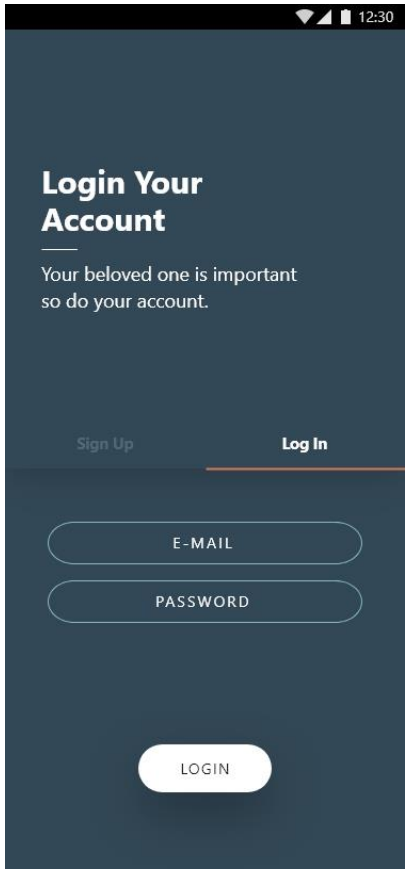
SPRINT#2: UI DESIGN

CONCEPT

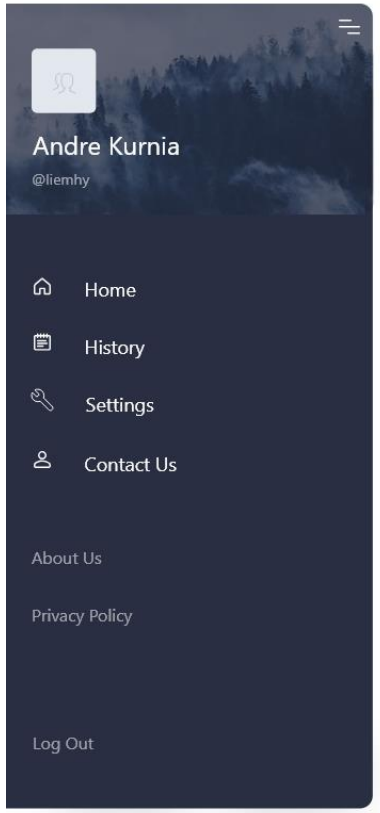


Maps and "My location" will be set as the home of application.





Register and Login section will be create in one page so the user won't get confused.



User can access the menu just by tapping one button.

Sprint #3

JADYTRACK

SPRINT #3 PRODUCT BACKLOG

Story ID	Story name	Status	Size	Sprint	Priority
VWR1	As a viewer, I want to track the route where the target went.	Carryover to Sprint 4	10	1	Critical
VWR5	As a viewer, I want to be able to make the geofence DRAWABLE, whatever I want it to be.	Carryover to Sprint 4	15	2	Critical
VWR6	As a viewer, I want to be able to make a set appointments with the person I'm tracking so that I can track them.	Carryover to Sprint 4	7	2	Medium
TRG12	As a target, I want to be able to send an SOS notification to my peers.	Done	4	3	Medium
TRG13	As a target, I want to be able to generate QR code so I can give it to my viewer to track me.	Done	2	3	Critical
TRG14	As a target, i want this app to be able to expire my QR Code & Link	Done	4	3	Low
USR4	As a user, I want to be able to view the target with multiple devices in sync	Done	7	3	High
VWR10	As a viewer, I want to be able to start tracking easily by scanning the target's QR code	Done	5	3	Critical
VWR11	I want to be able to set safe zones by setting it on the geofence	Done	5	3	High
VWR8	I want to be able to view the current progress on the web version on my PC	Carryover to Sprint 4	10	3	Critical
VWR9	I want to be able to view location history on the mobile app	Carryover to Sprint 4	10	3	Medium

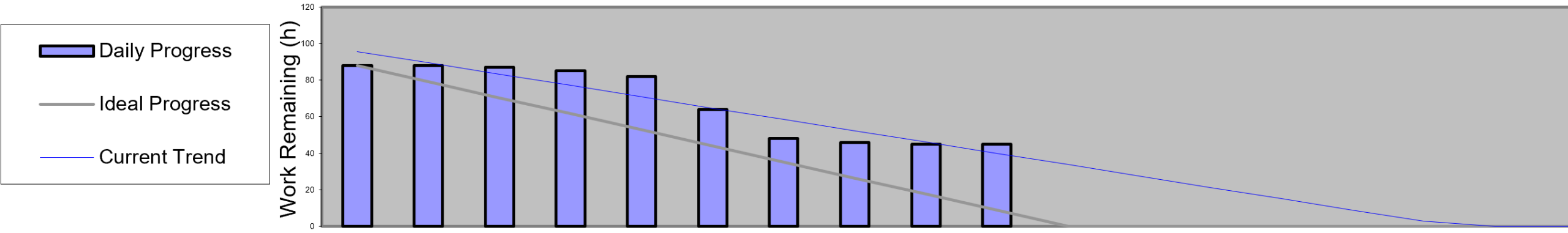
CARRIED OVER FROM LAST SPRINT

JADYTRACK

SPRINT #3 BACKLOG TASKS

Task name	Story ID	Responsible	Status	Est.	1	2	3	4	5	6	7	8	9	10
Drawable Geofence	VWR5	Dean	Carryover to Sprint4	15	15	15	15	15	15	15	14	13	12	12
Broadcast current location on android functionality (every few seconds broadcast's current location)	TRG1	Dean	Done	5	5	5	5	5	5	0	0	0	0	0
Create functionality to set safe zone on the geofence	VWR11	Dean	Done	5	5	5	5	5	5	4	0	0	0	0
Set appointments	VWR6	Yefta	Carryover to Sprint4	7	7	7	7	7	7	7	7	7	7	7
Create functionality to plot multiple dots (from coordinates) on the map	VWR1	Yefta	Carryover to Sprint4	10	10	10	10	10	10	10	10	10	10	10
Create QR Code functionality	TRG13	Yefta	Done	2	2	2	2	2	2	1	0	0	0	0
Create functionality to convert tracking ID to QR Code	TRG13	Yefta	Done	4	4	4	4	4	4	2	0	0	0	0
Create functionality to start tracking by scanning QR Code	VWR10	Yefta	Done	5	5	5	4	2	0	0	0	0	0	0
Make starting point and destination point (icon) and marker for points history	USR4, VWR9	Yefta	Carryover to Sprint4	2	2	2	2	2	2	2	2	2	2	2
Create functionality to live track the target from the user side	USR4	Yefta	Done	5	5	5	5	5	4	3	1	0	0	0
Create website for JadyTrack app	VWR8	Liem	Carryover to Sprint4	10	10	10	10	10	10	4	4	4	4	4
Create SOS notification functionality	TRG12	James	Done	4	4	4	4	4	4	3	0	0	0	0
Create functionality to expire QR code tracking or Link when the session is done	TRG14	James	Done	4	4	4	4	4	4	3	0	0	0	0
Create web-app for JadyTrack (web viewer for web tracking)	VWR8	James	Carryover to Sprint4	10	10	10	10	10	10	10	10	10	10	10

SPRINT #3 BURNDOWN CHARTS



This graph shows how much work we have missed because of the UTS week that caused us to lose time and not have time to do the tasks needed.
We did not meet our ideal progress and as you can see we unfortunately will be left behind in the next sprint.

SPRINT #3 RETROSPECTIVE MEETING

Things That Went Well

Business Issues	Developers now have a more concrete idea about how to code the application (combining the throwaway prototypes)
Requirements	The additional API and library requirements that were not thought of previously started to show up more as the development went by. It turns out that androidX is needed and this is important to know before it is too late.
Process	Throwaway prototyping is used relatively successfully as the team were not experienced at all in creating an application of this domain and caliber.
Project Management	Combining trello, and more frequent face-to-face meetings and reminders have helped allowed us to keep in track (even though this sprint is clouded with UTS)
Technology	1. Online storage setup successfully 2. Successful migration to new JadyTrack centralized firebase account 3. Successful broadcast 4. QR code creation 5. QR code detection and conversion to links 6. SOS functionality successfully notifies 7. Geofence safe zone successful 8. Successfully broadcast current location (coordinates) every few seconds.

SPRINT #3 RETROSPECTIVE MEETING

Things That Could Have Gone Better

Business Issues	1. Different views between developers caused some backlash and code that does not adhere to the pre-planned agreements.
Requirements	1. Incorporating a few additional libraries that we didn't expect 2. Having to migrate the application to androidX
Process	1. Time was an issue since each of us were busy for the two weeks doing UTS and UTS Projects
Project Management	1. Some tasks that we thought were not dependent on another task turns out to be dependent and so some tasks were forced to be stalled.
Technology	1. Issues with Maps API for Javascript caused the web-app development to be delayed 2. Issues with geofence that cannot be set to multiple geofences 3. Some libraries had issues with compatibility.

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SPRINT #3 RETROSPECTIVE MEETING

Lessons Learned

Business Issues	1. The application will need to be designed to be easier to use to cater to our target market 2. Our business focus should be fixed (from Technopreneurship class)
Requirements	1. Additional interfaces (such as APIS/libraries) are needed to allow the firebase and the UI to be properly used. 2. We need to upgrade to android in order to properly use some additional features that normal android does not use.
Process	1. Sometimes it is invetiable that other tasks such as UTS gets in the way, and so the schedule has to be more lenient in terms of events outside of this task (events such as UTS that are mandatory).
Project Management	1. Miscalculations in the project schedule because we did not consider UTS in the schedule which cause all of the tasks to be delayed and tasks being incomplete.
Technology	1. Combining Firebase with additional external libraries. 2. Creating listeners that will “listen” to online database values. 3. Creating callbacks for the various online database values.

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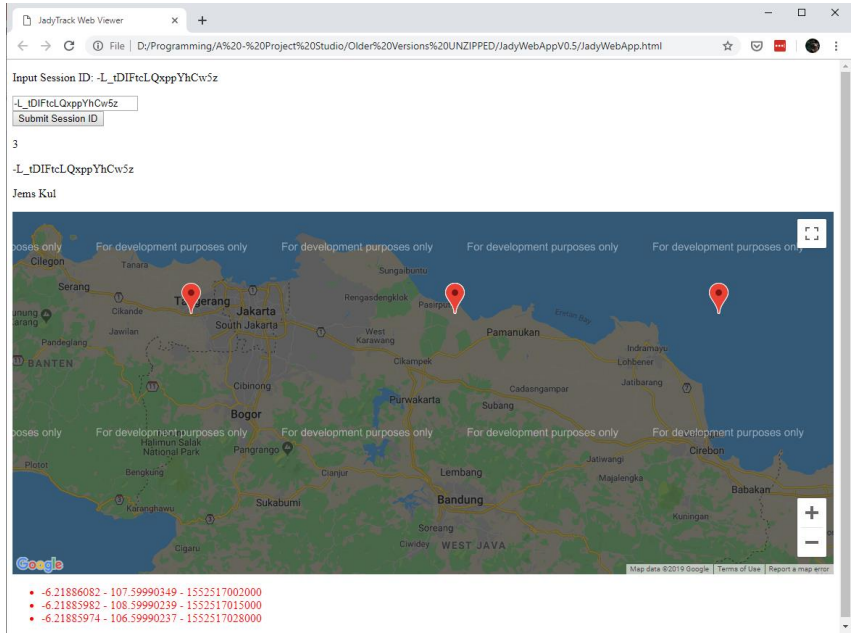
SPRINT #3 FINAL THOUGHTS

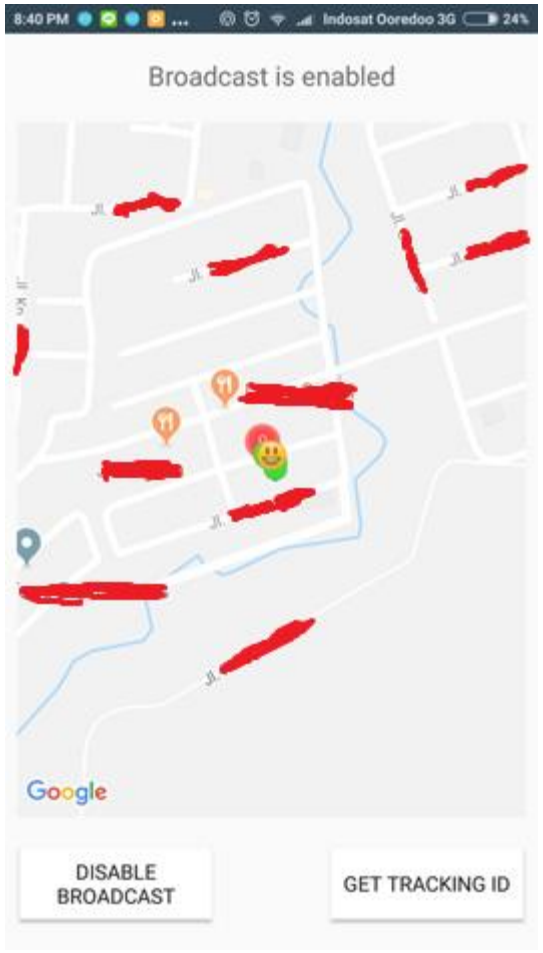
Things to Keep	1. The new prototypes and functionalities (will make into usable classes)
Things to Change	1. Next Sprint will focus on the product itself and combining all the throwaway prototypes 2. Next Sprint will make sure that there are adequate time for and leniency in time (learned from previous UTS scheduling mistakes)

SPRINT 3 DEMO



Web-App Throwaway Prototyping (Viewer)

Working authentication of Android application with the server.

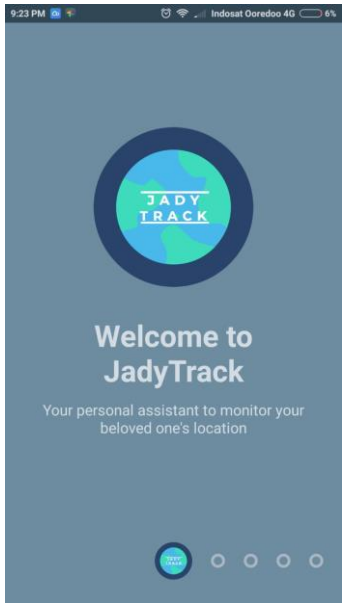


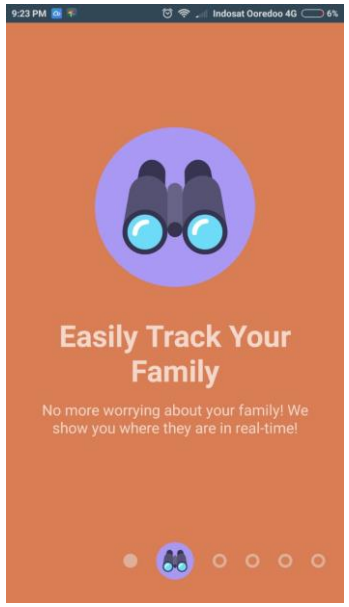
Android Broadcast (Target)

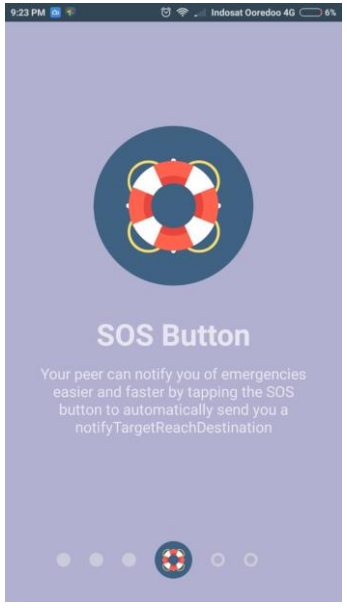
Functional broadcast feature essential to broadcast the target's location is implemented.

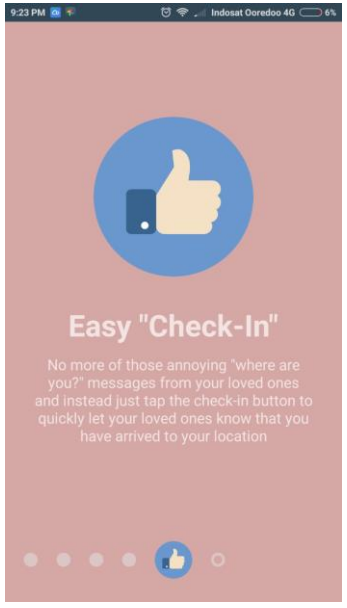
QR Code and UID Generator

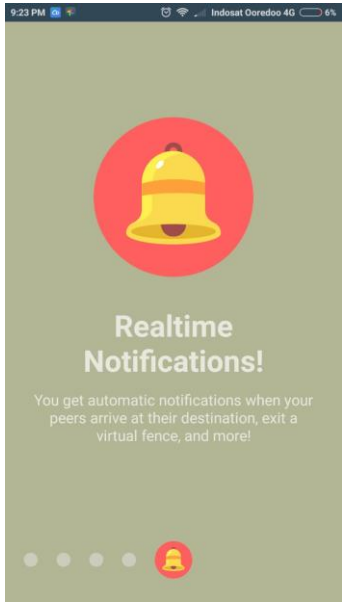
Android successfully setup QR code for the UID (Unique Identifier) for the session IDs. These can be shared to peers to start tracking the target.











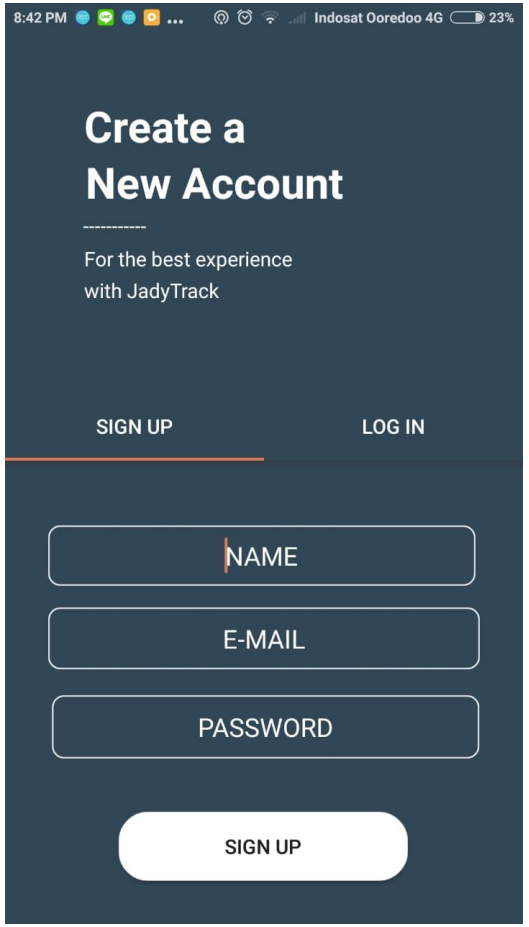
SPRINT#3: ONBOARDING

DEMO

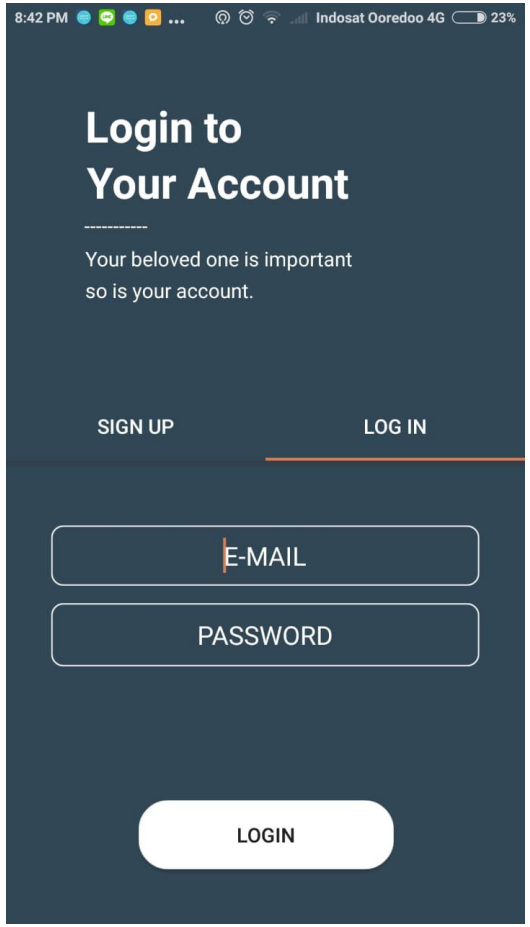
Onboarding

Functional onboarding welcoming the user while quickly familiarizing the user with JadyTrack.

The user can just swipe through each one and quickly learn JadyTrack in a brief way and in a user friendly manner.



Registration screen on Android



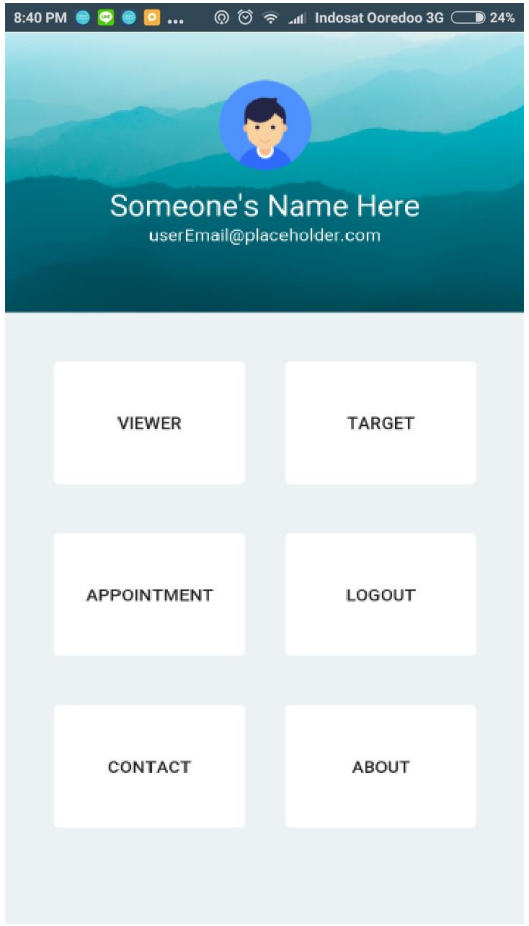
Login screen on Android

SPRINT#3: LOGIN/REGISTER

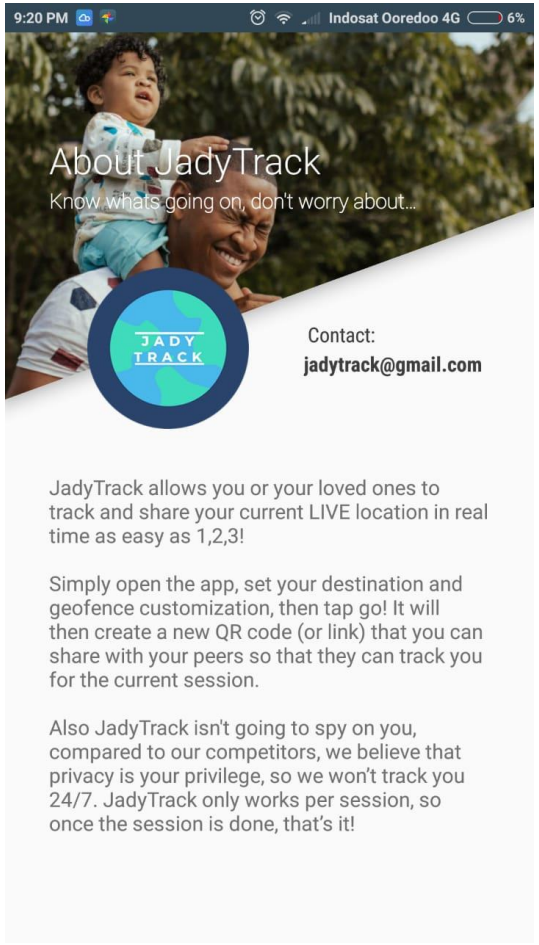
DEMO

Registration functionality
Registration is fully functional with the UI on Android.

Login functionality
Login is functional with the UI on Android.



Current fully functioning home screen menu (main menu) on Android



About screen

SPRINT#3: MENU/ABOUT

DEMO

Home Screen Menu

Functional Android home screen is complete for the moment (currently the design is as shown on the left side, it might change in the future).

About Screen

The about screen is fully functioning with the real contact email.

Sprint #4

JADYTRACK

SPRINT #4 PRODUCT BACKLOG

Story ID	Story name	Status	Size	Sprint	Priority
VWR1	As a viewer, I want to track the route where the target went.	Carryover to Sprint 5	10	1	Critical
VWR5	As a viewer, I want to be able to make the geofence DRAWABLE, whatever I want it to be.	Carryover to Sprint 5	15	2	Critical
VWR6	As a viewer, I want to be able to make a set appointments with the person I'm tracking so that I can track them.	Carryover to Sprint 5	7	2	Medium
VWR8	I want to be able to view the current progress on the web version on my PC	Carryover to Sprint 5	10	3	Critical
VWR9	I want to be able to view location history on the mobile app	Done	10	3	Medium
USR5	As a user, I want the mobile app to be easy to use and easy to understand GUI.	Carryover to Sprint 5	13	4	Medium
USR6	As a user, I want the web version to be easy to use while also having a nice design	Done	10	4	Medium
VWR12	I want to be able to view location history on the web version	Done	6	4	Medium
VWR14	~~As a viewer, realtime chat?~~ [CHANGED TO: Set Quick Routes for Premium Users]	Carryover to Sprint 5	10	4	Critical

CARRIED OVER FROM LAST SPRINT

JADYTRACK

SPRINT #4 BACKLOG TASKS

Task name	Story ID	Responsible	Status	Est.	1	2	3	4	5	6	7	8	9	10
Create and fix mobile app UI	USR5	James	Carryover to Sprint5	15	14	12	12	9	9	9	9	9	9	9
Create and fix web-app UI	USR6	James	Done	10	10	10	10	10	10	5	2	1	0	0
Create view location history functionality on web-app	VWR12,VWR9	James	Done	6	6	6	6	6	6	4	0	0	0	0
Create web-app for JadyTrack (web viewer for web tracking)	VWR8	James	Carryover to Sprint5	10	10	10	10	10	10	3	3	3	3	3
Create website for JadyTrack app	VWR8	Liem	Carryover to Sprint5	4	4	4	4	4	2	2	2	2	2	2
Set appointments	VWR6	Yefta	Carryover to Sprint5	7	7	7	7	7	7	7	7	7	7	7
Create functionality to plot multiple dots (from coordinates) on the map	VWR1	Yefta	Done	10	10	9	7	4	3	0	0	0	0	0
Make starting point and destination point (icon) and marker for points history	USR4, VWR9	Yefta	Done	2	2	2	2	2	0	0	0	0	0	0
Drawable Geofence	VWR5	Dean	Carryover to Sprint5	12	12	11	11	10	7	7	7	7	5	4

CARRIED OVER FROM LAST SPRINT

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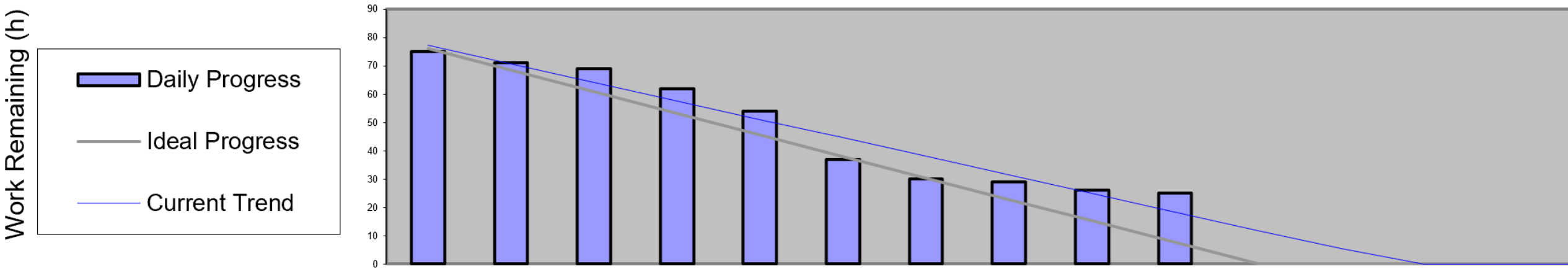
SPRINT #4 BURNDOWN CHARTS



This graph shows how much work we have missed because of the carryover from the last sprint.
We did not meet our ideal progress and as you can see we unfortunately will be left behind in the next sprint

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SPRINT #4 RETROSPECTIVE MEETING

Things That Went Well

Business Issues	Developers are now more motivated to finish their tasks as they can see the progress they are making turning into reality
Requirements	Unlike previously, there are not as many requirements that we have missed in this sprint.
Process	Better and clearer overall picture that the team have about the final product.
Project Management	Better planning for this sprint from the start caused the tasks to be much better and more complete.
Technology	1. Website has been implemented but still in progress 2. The user interface development is going well 3. Icon and design has been decided 4. Application has connected with firebase well 5. Can make multiple geofence

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SPRINT #4 RETROSPECTIVE MEETING

Things That Could Have Gone Better

Business Issues	1. In order to satisfy customers for our premium model, we had to change the realtime chatting user story with quick routes instead.
Requirements	1. Realizing late that we need to add a premium model to the app
Process	1. Some tasks turns out to be dependent (partially) to other tasks 2. Communication delays are an issue 3. People did not get their tasks done in time
Project Management	1. Making sure that tasks in the product backlog task list are more specific and detailed so that there are less tasks that are dependent on each other.
Technology	1. We still haven't made handler for our application 2. The geofence still not drawable 3. The UI design can be improved

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SPRINT #4 RETROSPECTIVE MEETING

Lessons Learned

Business Issues	1. We need to add a premium model into our app 2. The feature from the user story of real-time chatting needed to be changed to quick routes in order to satisfy premium customers.
Requirements	1. Changing the user story means changing the product backlog tasks too and causing the need for more required time and extra resources.
Process	1. Making sure that people have enough time in order to finish their tasks. 2. Adding extra reminders so that people can be reminded to submit their tasks so that people who are dependent on it can continue creating something.
Project Management	1. Giving the appropriate task to the appropriately skilled members 2. Giving more time to tasks that are harder to accomplish
Technology	1. We can save and retrieve location history from firebase real-time database 2. JavaScript Maps API implementation 3. JavaScript database reading synchronizing and writing in real time 4. Firebase hosting through CLI 5. Having an idea how to make drawable geofence 6. Able to make multiple geofence with multiple marker

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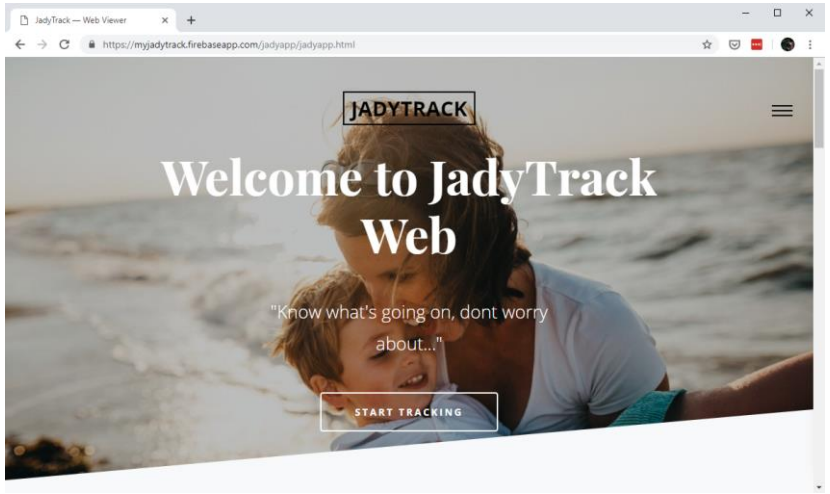
SPRINT #4 FINAL THOUGHTS

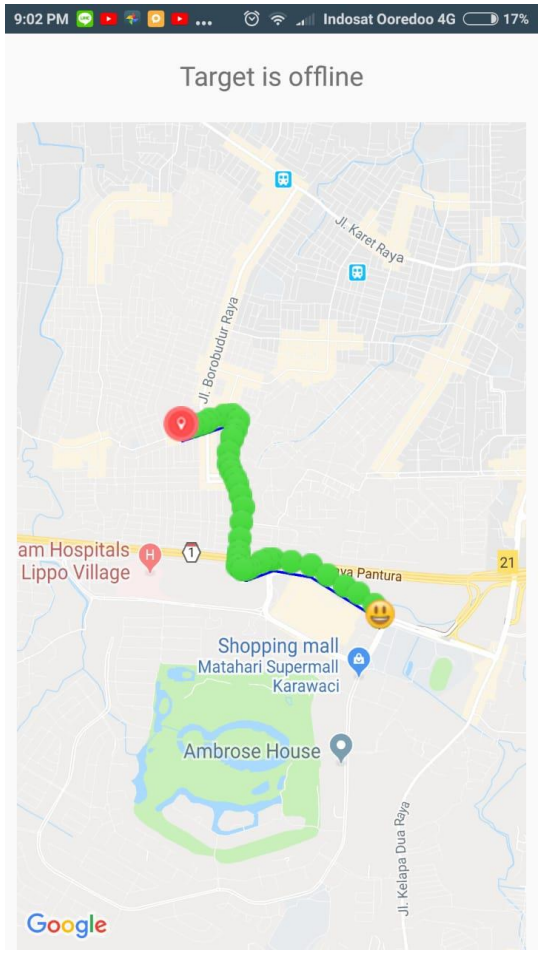
Things to Keep	1. The good momentum that the team is having
Things to Change	1. It seems like we do not have time to finish the project and therefore we estimate that we need to add another sprint 2. User story and tasks related to real time chatting is changed into quick routes in order to satisfy the premium paying customers which we added.

SPRINT 4 DEMO



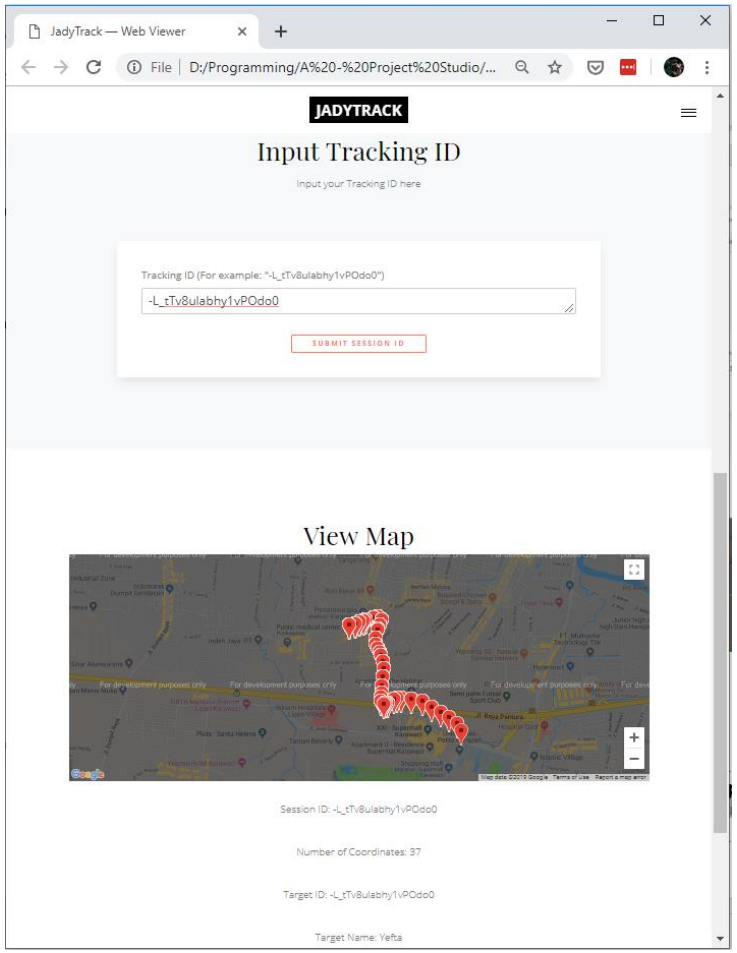
Web-App Version PRE-ALPHA

Shows the Web-App and its landing page. Behind the scenes, the JavaScript code is functional.



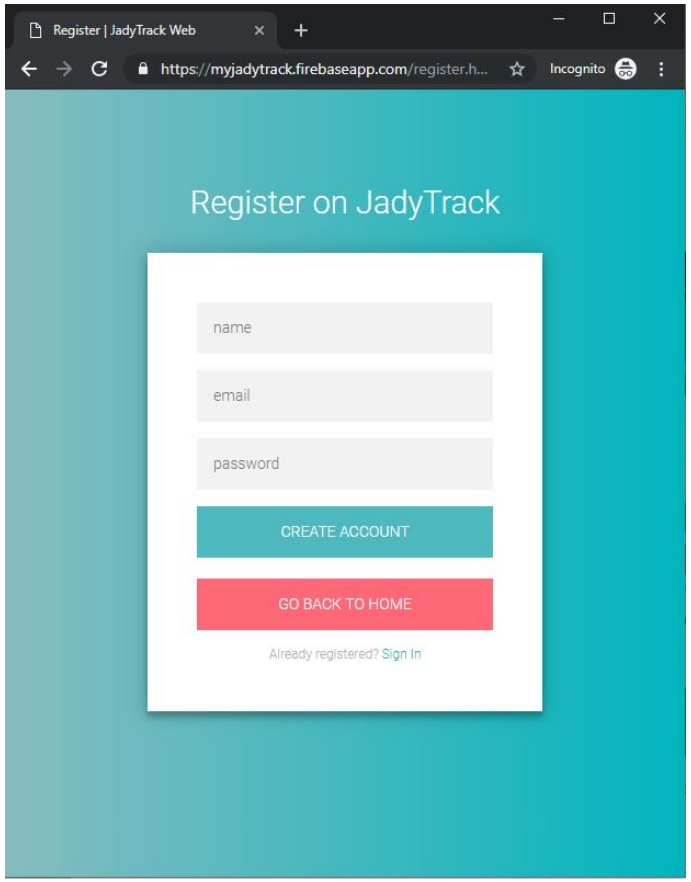
Android (Viewer) Version PRE-ALPHA

Functional viewer for the Android version which can view and plot coordinates for now.

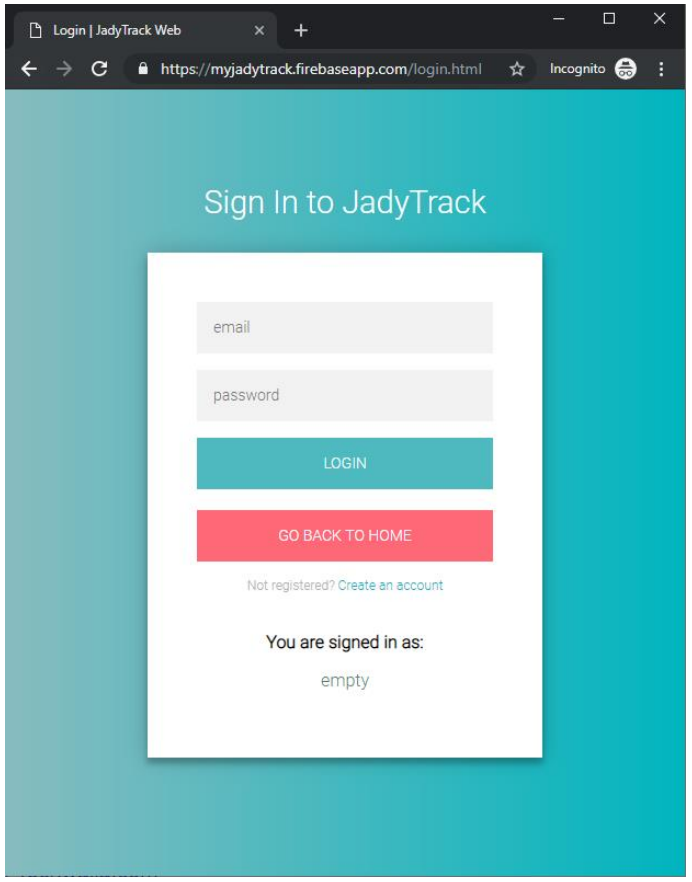


Web-App (Viewer) Version PRE-ALPHA

Working web app essential function of viewing coordinates. However the geofence in the web app is still not functional.



Registration screen on Android



Login screen on Android

SPRINT#4: WEB-APP LOGIN/REGISTER

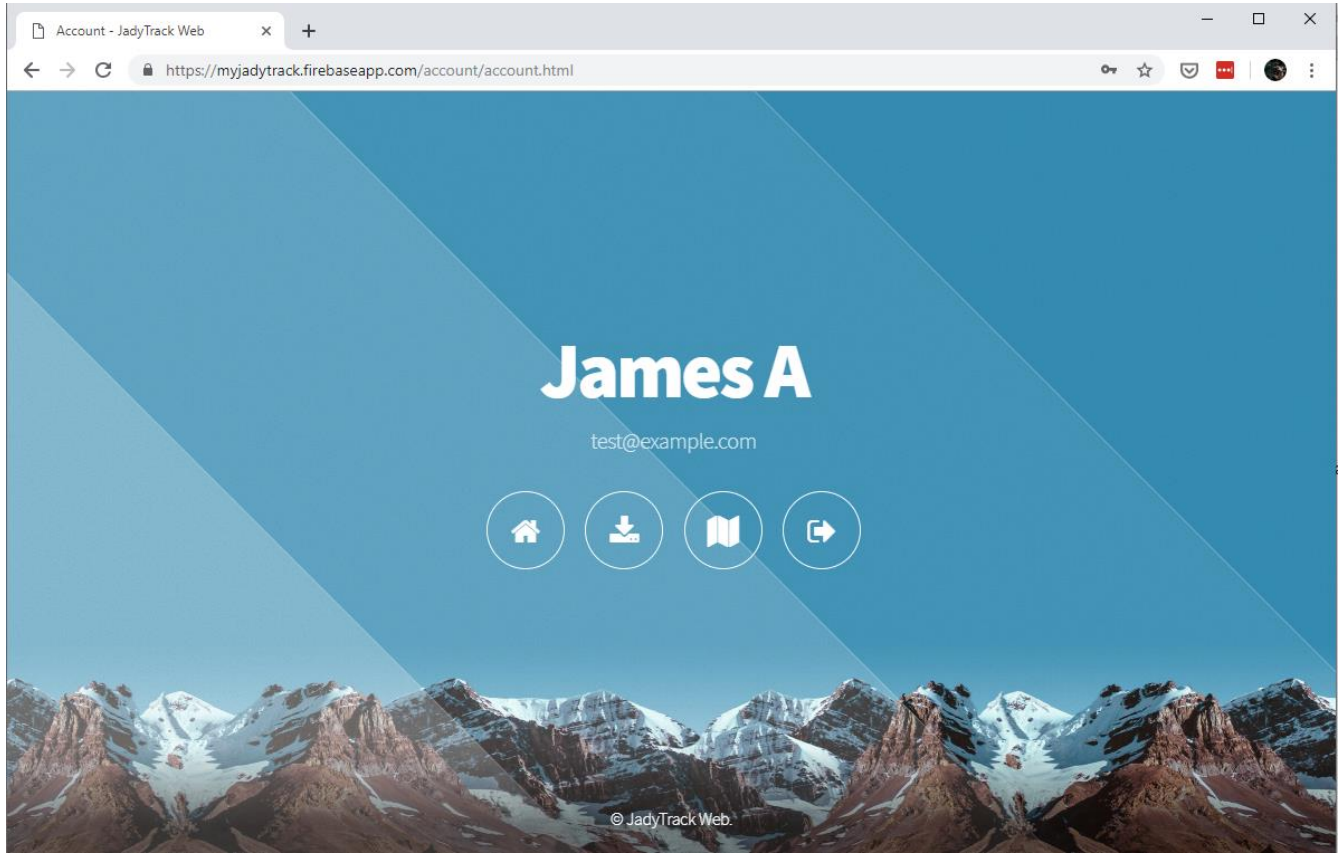
DEMO

Registration functionality

Registration is fully functional with the UI, authentication system, and database on the web application.

Login functionality

Login is fully functional with the UI, and authentication system on the web application.



Account dashboard

SPRINT#4: WEB-APP ACCOUNT DASHBOARD

DEMO

Account Dashboard

The dashboard allows the users to view their current account, go back to home page, download the app, access the web app, and logout of the account.


Sprint #5

JADYTRACK

SPRINT #5 PRODUCT BACKLOG

Story ID	Story name	Status	Size	Sprint	Priority
VWR5	As a viewer, I want to be able to make the geofence DRAWABLE, whatever I want it to be.	Carryover to sprint6	15	2	Critical
VWR6	As a viewer, I want to be able to make a set appointments with the person I'm tracking so that I can track them.	Carryover to sprint6	7	2	Medium
VWR8	I want to be able to view the current progress on the web version on my PC	Carryover to sprint6	10	3	Critical
USR5	As a user, I want the mobile app to be easy to use and easy to understand GUI.	Carryover to sprint6	13	4	Medium
VWR14	~~As a viewer, realtime chat?~~ [CHANGED TO: Set Quick Routes for Premium Users]	Carryover to sprint6	10	4	Critical
USR7	As a user, I want to be able to view a help menu	Carryover to sprint6	5	5	High
USR8	As a user, I want to be able to view the documentation if needed	Carryover to sprint6	10	5	Medium
USR9	As a user, I want to be able to leave feedback/contact the developers	Done	5	5	Low
VWR13	As a viewer, I want to be able to view easy tutorials	Carryover to sprint6	10	5	Medium

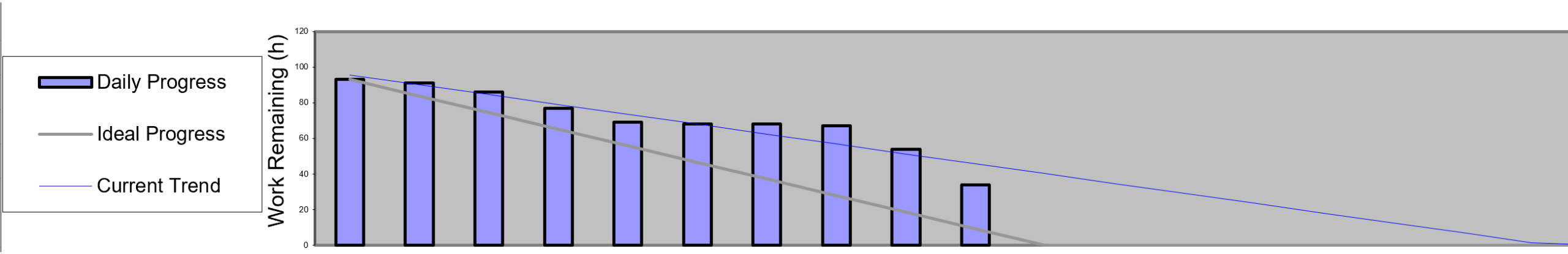
CARRIED OVER FROM LAST SPRINT

JADYTRACK

SPRINT #5 BACKLOG TASKS

Task name	Story ID	Responsible	Status	Est.	1	2	3	4	5	6	7	8	9	10	
Contact Form (Web + Android)	USR9	Liem, James	Done	3	3	3	3	3	3	3	3	3	0	0	
Polyline WEB APP	VWR8	James	Done	10	10	8	4	2	0	0	0	0	0	0	
Geofence WEB APP	VWR8	James	Carryover to Sprint6	10	10	10	10	10	10	10	10	10	10	8	
Polyline ANDROID	USR4, VWR9	Yefta	Done	4	4	4	3	0	0	0	0	0	0	0	
Geofence Notification	VWR5	Dean	Carryover to Sprint6	5	5	5	5	5	5	5	5	5	3	3	
Icon for Android Home Page	USR5	Liem	Done	3	3	3	3	3	1	1	1	1	1	0	
Combine code from James to Yefta		James, Yefta	Done	12	12	12	12	8	6	6	6	6	6	0	
Combine code from Dean to Yefta		Dean, Yefta	Done	7	7	7	7	7	7	7	7	7	7	0	
Combine code from Liem to James		Liem, James	Done	4	4	4	4	4	4	4	4	4	0	0	
Quick Routes Feature	VWR14	Yefta	Carryover to Sprint6	10	10	10	10	10	10	10	10	10	10	10	
Create and fix mobile app UI	USR5	James	Carryover to Sprint6	9	9	9	9	9	9	9	9	8	7	7	CARRIED OVER FROM LAST SPRINT
Create website for JadyTrack app	VWR8	Liem	Done	2	2	2	2	2	1	0	0	0	0	0	
Set appointments	VWR6	Yefta	Carryover to Sprint6	7	7	7	7	7	7	7	7	7	7	6	
Drawable Geofence	VWR5	Dean	Done	4	4	4	4	4	3	3	3	3	0	0	
Create web-app for JadyTrack (web viewer for web tracking)	VWR8	James	Done	3	3	3	3	3	3	3	3	3	3	0	

SPRINT #5 BURNDOWN CHARTS



Even though looking at the backlog we did a lot of tasks, there are still tasks that we missed that are bigger in terms of the amount of hours needed which caused the graph to look not as impressive.
From the previous agreements this was supposed to be our last sprint, however it turns out that we will need another sprint in order to finish the project.

JADYTRACK

SPRINT #5 RETROSPECTIVE MEETING

Things That Went Well

Business Issues	In order to promoting JadyTrack., We had some ideas for marketing and publications about geofence features.
Requirements	Learn from our last sprint, we finished all requirements that we planned in time (mostly)
Process	Able to do most of tasks in time (despite we had many projects & homeworks in different courses)
Project Management	Hardest tasks like making geofence, broadcast and tracking features done in time. It makes us easier to focus on a single task in the next sprint.
Technology	1. Geofence works well as we expected before (Polygon Shape) 2. Location features works well and able to tracked in the app and even browser 3. Web design and tracking page work well. 4. No error in database sections 5. Contact form on web and on the android works flawlessly 6. Notifications on android device are in progress but going well 7. The web app is in progress but working well

JADYTRACK

SPRINT #5 RETROSPECTIVE MEETING

Things That Could Have Gone Better

Business Issues	1. The website lacks the contents that are needed from the business proposal we have previously created. 2. Product owner suddenly asks to add new tasks.
Requirements	1. Code dependencies (libraries, APIs, etc) varies from different team members which caused the process of combining code to take longer than expected causing not enough time to do other tasks on the product backlog. 2. Product owner adds new requirements to the project such as adding extra documentation, designs, posters, etc.
Process	1. We expected that in order to finish the project in Sprint 5 that the geofence functionality is finished earlier, however in reality the geofence functionality is the Achilles heel that caused the whole project to need to be delayed.
Project Management	1. Combining whole codes into same project is harder than we expected. We did not expect that it will take longer than we predicted which caused the developers to not have enough time to touch other tasks in the backlog.
Technology	1. Simple things like making icons delayed for awhile. 2. The web app is missing a feature because it is dependent on the geofence being finished first. 3. Android app is missing a few buttons that are working properly.

SPRINT #5 RETROSPECTIVE MEETING

Lessons Learned

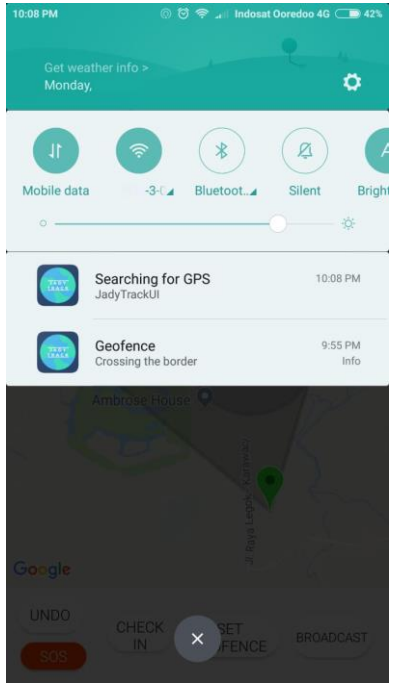
Business Issues	1. The previous proposals that were made before the project was started turns out to be insufficient because of delays and problems faced by developers and therefore another sprint will need to be added.
Requirements	1. Refactoring and combining code from different team members and finding ways in order to match the requirements between different modules.
Process	1. Setting up dependencies across code from different developers 2. Overcome conflicts between different versions and code requirements.
Project Management	1. On the next sprint, we will focus in combining whole codes into same project. 2. Documentations will become our primary task to do
Technology	1. Convex-Hull algorithm (geofence notification algorithm) 2. Algorithm to know if a point is inside a border (for geofence notification) 3. HTML, CSS, JavaScript, and JQuery for web programming.

JADYTRACK

SPRINT #5 FINAL THOUGHTS

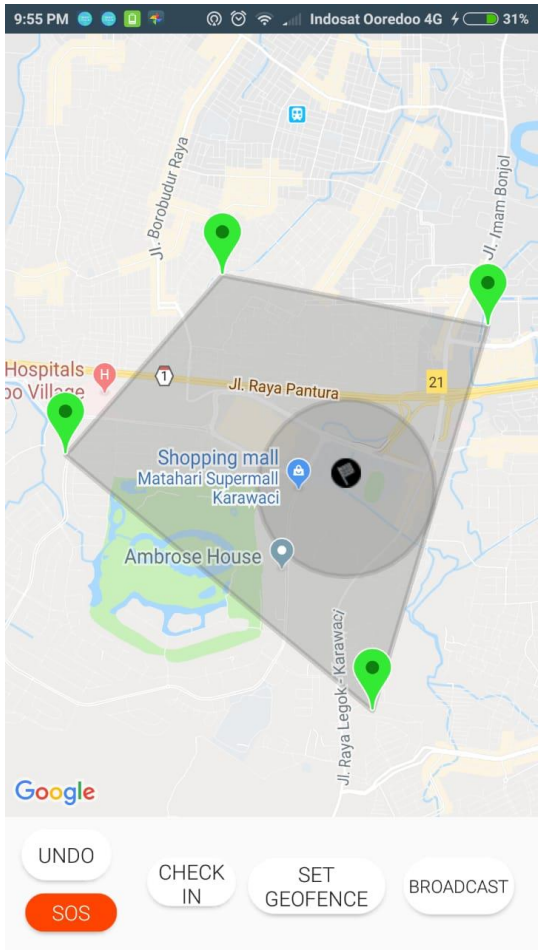
Things to Keep	1. Current code changes and combination 2. Current algorithms and design decisions 3. Some ideas that we will have to implement despite the complexity
Things to Change	1. Unfortunately it is decided that another sprint will need to be added for the last sprint (Sprint 6) 2. Some minor changes and additions to the product backlog 3. Addition of tasks added by the product owner (design posters, documentations, etc.) 4. Minor changes in web will be finalize as soon as possible. 5. Need to create additional time to polish the app

SPRINT 5 DEMO



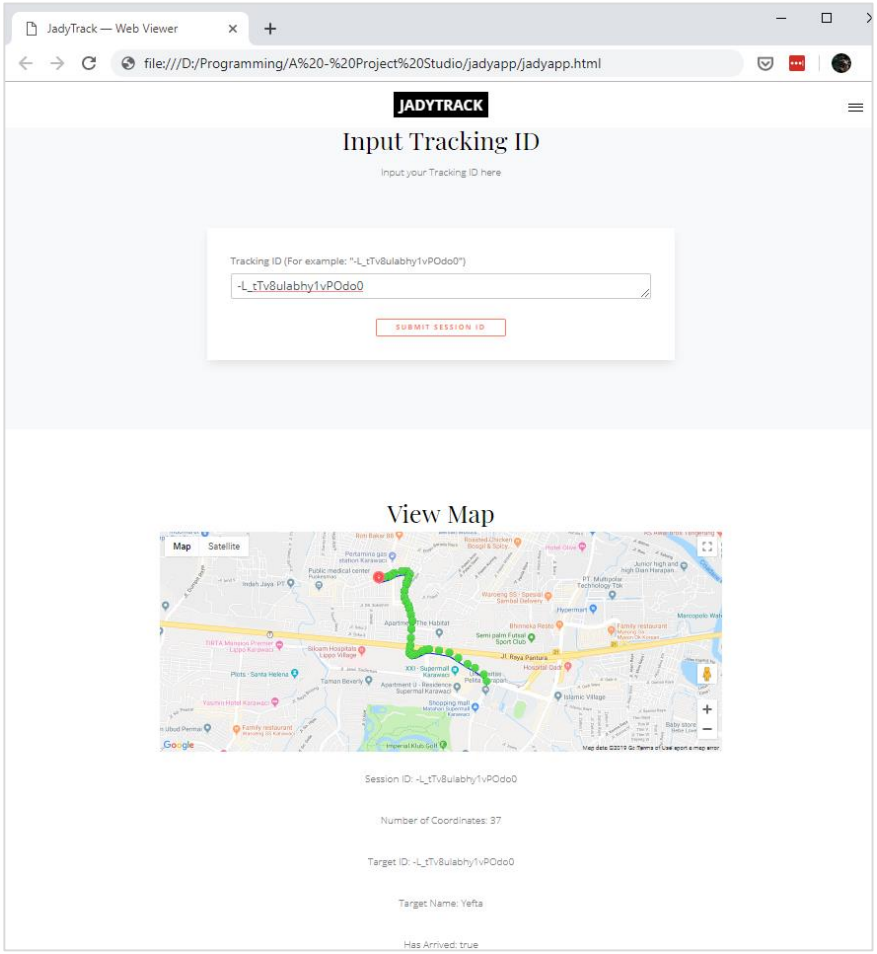
Android Notifications

Notifications when the target crosses the border or when the target reaches the destination point etc.



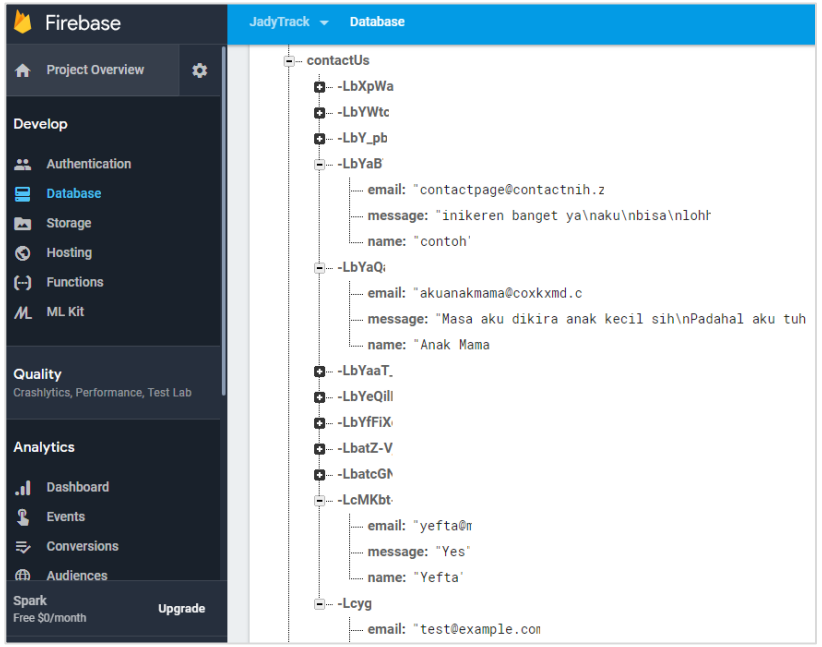
Android Appointment (Target & Viewer)

Now we are able to create appointments between targets and viewers in order to set the destination and draw the geofence.

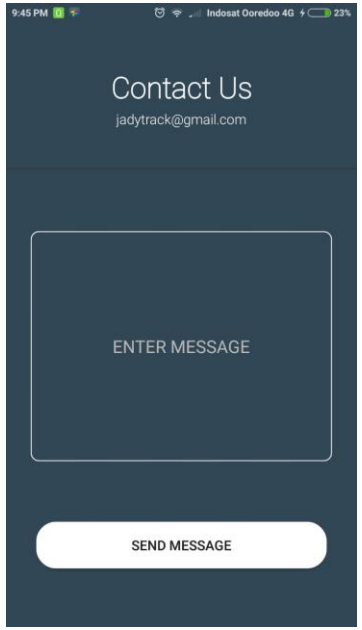


Web-App (Viewer) Updated Markers, Polyline, Coordinates, and Optimization

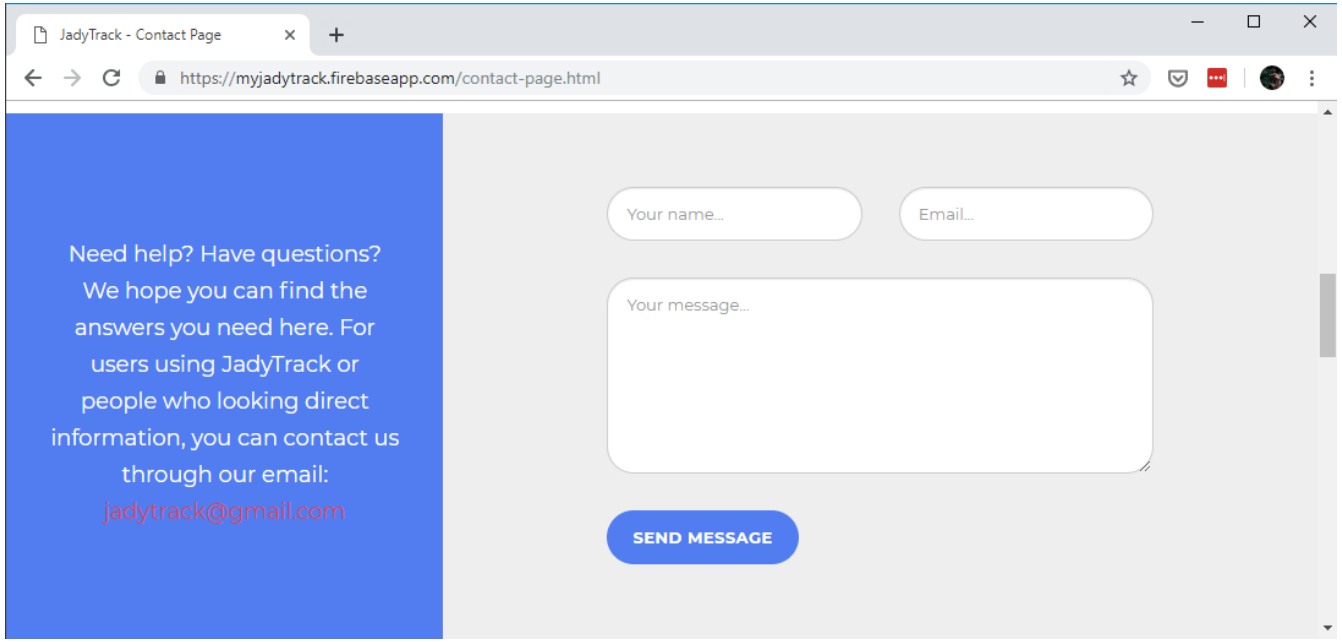
Essential bug fixes and optimization while also adding many new features such as new markers, and polyline. Also implemented new APIs.



Firebase database with the contact form information



Android Contact Form



Web Contact Form

SPRINT#5: CONTACT FORMS

DEMO

Website Contact Form

Through the website, now the user can contact us directly without sending an email.

Android App Contact Form

The dashboard allows the users to view their current account, go back to home page, download the app, access the web app, and logout of the account.


Sprint #6

JADYTRACK

SPRINT #6 PRODUCT BACKLOG

Story ID	Story name	Status	Size	Sprint	Priority
VWR5	As a viewer, I want to be able to make the geofence DRAWABLE, whatever I want it to be.	Done	15	2	Critical
VWR6	As a viewer, I want to be able to make a set appointments with the person I'm tracking so that I can track them.	Done	7	2	Medium
VWR8	I want to be able to view the current progress on the web version on my PC	Done	10	3	Critical
USR5	As a user, I want the mobile app to be easy to use and easy to understand GUI.	Done	13	4	Medium
VWR14	~~As a viewer, realtime chat?~~ [CHANGED TO: Set Quick Routes for Premium Users]	Done	10	4	Critical
USR7	As a user, I want to be able to view a help menu	Done	5	5	High
USR8	As a user, I want to be able to view the documentation if needed	Done	10	5	Medium
VWR13	As a viewer, I want to be able to view easy tutorials	Done	10	5	Medium

CARRIED OVER FROM LAST SPRINT

This extra sprint is added in order to catch up on carried over tasks including the testing, documentation, and prototype corrections from Sprint 5 and so there are no new user stories in this sprint since all of them are carried over from previous tasks.

JADYTRACK

SPRINT #6 BACKLOG TASKS

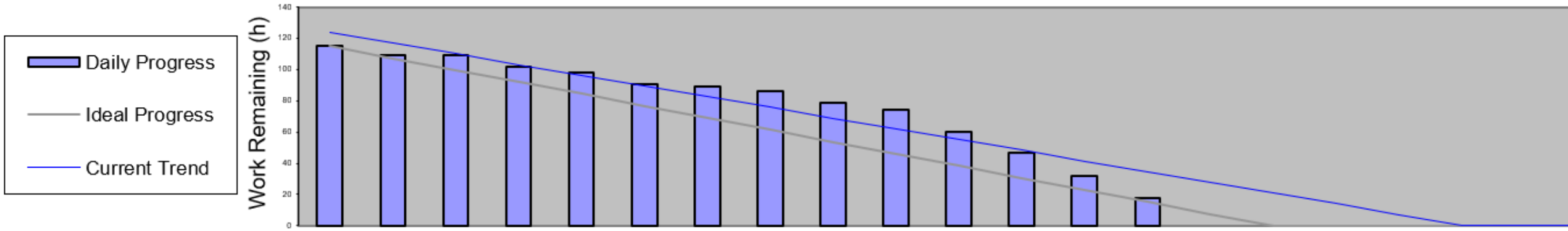
Task name	Story ID	Responsible	Status	Est.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15*
Combine Code		Liem, James, Yefta, Dean	Done	30	30	28	28	24	20	16	16	16	12	10	6	4	3	1	0
Documentation (for UAS)	USR8	James	Done	10	10	10	10	10	10	10	10	7	7	7	6	4	2	1	0
Help Menu	USR7	Liem, James	Done	8	8	8	8	8	8	8	8	8	8	8	8	5	5	5	0
Tutorials/How to (make it like an infographic)	VWR13	Liem	Done	10	10	10	10	10	10	10	10	10	10	10	10	8	8	5	0
Update Website with New Contents	VWR8	Liem	Done	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0
Design Poster	VWR13	Liem	Done	4	4	4	4	1	1	0	0	0	0	0	0	0	0	0	0
Geofence WEB APP	VWR8	James	Done	8	8	6	6	6	6	4	2	2	0	0	0	0	0	0	0
Geofence Notification	VWR5	Dean	Done	3	3	3	3	3	3	3	3	3	2	1	0	0	0	0	0
Quick Routes Feature**	VWR14	Yefta	Done	10	10	10	10	10	10	10	10	10	10	10	10	10	4	0	0
Create and fix mobile app UI	USR5	James	Done	7	7	5	5	5	5	5	5	5	5	4	3	3	1	0	0
Set appointments	VWR6	Yefta, Dean, James	Done	6	6	6	6	6	6	6	6	6	6	5	3	3	1	0	0
Android App Polishing (fix bugs, optimize, error handling, etc.)		Yefta, Dean, James	Done	15	15	15	15	15	15	15	15	15	15	15	10	6	4	2	0
Web App Polishing (fix bugs, optimize, error handling, etc.)		James	Done	15	15	14	14	13	13	13	10	10	8	7	4	3	1	1	0

CARRIED OVER FROM LAST SPRINT

*This sprint counts the extra 5 days after the 17th of April since submission date is the 25th of April.

** The quick routes feature was added late for the Technopreneurship class and was dependent on other features working first, therefore this feature was late to be developed

SPRINT #6 BURNDOWN CHARTS



This graph shows the final sprint and how we finished our tasks perfectly on the Ideal progress line (can be seen by the empty daily progress bar on the 15th spot).

This meant that all of our tasks and user stories have been successfully accomplished and finished throughout all 6 sprints and that the application is ready.

*This sprint counts the extra 5 days after the 17th of April since submission date is the 25th of April hence the extra bars on the burndown chart.

SPRINT #6 RETROSPECTIVE MEETING

Things That Went Well

Business Issues	Improvements to business plans and marketing strategy are well planned in order to get many users.
Requirements	In this last sprint, we achieved whole requirements we made before and all requirements successfully made as developers expectations before.
Process	Because this is our last sprint, our target is to complete every tasks we made and carried over done in this sprint.
Project Management	Hardest task such as combining codes among team members completely done in time. Documentations such as manual, help page, FAQ page and things for marketing purpose were made in time.
Technology	1. COMPLETION of Web-App with all important features 2. COMPLETION of Android app core functionalities 3. Successful integration of geofence in android app and web browser 4. Notification when entering and crossing the geofence have been successfully integrated as well. 5. Notification has been implemented in android and web app

JADYTRACK

SPRINT #6 RETROSPECTIVE MEETING

Things That Could Have Gone Better

Business Issues	Planning financial expenses for business plan is hard
Requirements	Minor flaws in requirements and scenarios that we decided before caused some issues that we didn't expect and took a long time to overcome.
Process	1. Too many tasks that we carried over from last sprint. So it makes us work harder than we thought to make all tasks complete in time. 2. Many bugs revealed in this sprint because lack of testing in the last sprint.
Project Management	1. Combining code between each member is hard because each member write code differently so we have trouble understanding each other's code
Technology	1. Geofence notification and detection feature that we thought was easy is not easy at all and required the most time overall to do.

JADYTRACK

SPRINT #6 RETROSPECTIVE MEETING

Lessons Learned

Business Issues	1. We managed to create cash flow and cash projection for our business plan. We also manage to decide our worker's pay based on our business plan.
Requirements	1. We are able to combine code successfully despite the problem of understanding each other's code 2. Making sure that all the stories, tasks, backlog match with the requirements for the final product
Process	1. We learned how to properly make the sprint documentation and report including the burndown charts, velocity, and more
Project Management	1. SCRUM Master successfully unite our code and integrate each member's different tasks into the project 2. Making sure that all the stories, tasks, backlog line up well in the end
Technology	1. Raycasting algorithm implementation 2. Convex Hull algorithm implemntation 3. Learn codes to create notification in android and pop-up notification in web browser 4. Synchronization and communication between Client and Server in multiple viewers (multiple devices at one time)

SPRINT #6 FINAL THOUGHTS

Even though this is the final sprint, there are still some additional things we can add to improve the application that is outside the original user story and backlog.

Possible Future Additional Features After Release (outside of the original planned user story)	1. Add additional quality of life changes for convenience to the app, (for feedback and UX) 2. Add Google Pay functionality (currently we cant because we don't have a credit card/paypal) 3. Add account features: Profile picture change, background picture change 4. Use custom picture for map pathway dots 5. Improve the UI and UX

SPRINT 6 DEMO

Since Sprint6 showcases the final product, it is moved to the Product Overview section

FINAL: Project Summary

JADYTRACK

FINAL: PRODUCT BACKLOG SUMMARY

Story ID	Story name	Status
TRG1	As a target, I want to be able to be affected by a geofence.	Done
TRG2	As a target, I want to be able to get and share my current location	Done
TRG3	As a target, I want to be able to set my destination	Done
TRG4	As a target, I want to have a “check-in” button to manually toggle that I have arrived at the destination and inform my peers that I have arrived	Done
TRG5	As a target, I want to be able to generate a link/tracking ID to be able to share it with my peers	Done
TRG6	As a target, i want it to be able to auto notify if I have reached/arrived at my destination	Done
TRG7	As a target, I want to have an easy start button & functionality	Done
TRG8	As a target, I want to give notification to my viewers if my internet connection is turned off	Done
TRG9	As a target, I want to have a "Stop broadcasting" button to stop broadcasting my location	Done
TRG10	As a target, I want to have it to enable GPS setting/ask for location permission on the phone automatically	Done
TRG11	As a target, I want to be able to view my current status (currently broadcasting/not & current session's information)	Done
TRG12	As a target, I want to be able to send an SOS notification to my peers.	Done
TRG13	As a target, I want to be able to generate QR code so I can give it to my viewer to track me.	Done
TRG14	As a target, i want this app to be able to expire my QR Code & Link	Done

Story ID	Story name	Status
USR1	As a user, I want to be able to create an account or register	Done
USR2	As a user, I want to be able to log in to my account	Done
USR3	As a user, I can choose whether to be a viewer or a target	Done
USR4	As a user, I want to be able to view the target with multiple devices in sync	Done
USR5	As a user, I want the mobile app to be easy to use and easy to understand GUI.	Done
USR6	As a user, I want the web version to be easy to use while also having a nice design	Done
USR7	As a user, I want to be able to view a help menu	Done
USR8	As a user, I want to be able to view the documentation if needed	Done
USR9	As a user, I want to be able to leave feedback/contact the developers	Done

Story ID	Story name	Status
VWR1	As a viewer, I want to track the route where the target went.	Done
VWR2	As a viewer, I want to be able to set the destination	Done
VWR3	As a viewer, I want this app to be able to cancel/close tracking the current target	Done
VWR4	As a viewer, I want to be able to start tracking by inserting link/tracking id	Done
VWR5	As a viewer, I want to be able to make the geofence DRAWABLE, whatever I want it to be.	Done
VWR6	As a viewer, I want to be able to make a set appointments with the person I’m tracking so that I can track them.	Done
VWR7	As a viewer, I want this app to be able to give notification when the person I’m tracking is crossing the geofence.	Done
VWR8	I want to be able to view the current progress on the web version on my PC	Done
VWR9	I want to be able to view location history on the mobile app	Done
VWR10	As a viewer, I want to be able to start tracking easily by scanning the target's QR code	Done
VWR11	I want to be able to set safe zones by setting it on the geofence	Done
VWR12	I want to be able to view location history on the web version	Done
VWR13	As a viewer, I want to be able to view easy tutorials	Done
VWR14	~~As a viewer, realtime chat? (FEATURE NOT CONFIRMED)~~ [CHANGED TO: “Set Quick Routes for Premium Users” for Technopreneurship class]	Done

We hereby confirm that ALL User Stories in the product backlog and its tasks are COMPLETED.

FINAL: SUMMARY SPRINT BACKLOG

Total Tasks: 60 (ALL TASKS COMPLETE)

Color code: Sprint1, Sprint2, Sprint3, Sprint4, Sprint5, Sprint6

Task name	Story ID	Responsible	Status
Create a basic geofencing feature for Android that uses a circular shape	TRG1	Dean	Done
Remove geofence feature	TRG1	Dean	Done
Automatically send a notification (locally on the device) when arrived at the destination.	TRG4	Dean	Done
Create a basic server to upload the coordinates	TRG2	Yefta	Done
Create functionality to set the destination and setup the destination's geofence (to detect if the user has arrived)	TRG3, VWR2	Yefta	Done
Get current location on android	TRG1	Andre	Done
Make adjustable geofence size	VWR5	Dean	Done
Notify if geofence is crossed	VWR7	Dean	Done
Make outer geofence	VWR7	Dean	Done
Auto notify if reached destination	TRG6	Dean	Done
Enable GPS if OFF	TRG10	Liem, Dean	Done
Get current location on android	TRG1	Liem, Dean	Done
Auto detect internet connection off	TRG8	Yefta	Done
Start button for broadcast/tracking	TRG7	Yefta	Done
Auto detect if Target's internet connection is off by looking at the target's timestamp	TRG8	Yefta	Done
Generate Link/Tracking ID	TRG5	Yefta	Done
Start tracking from link/tracking ID	VWR4	Yefta	Done

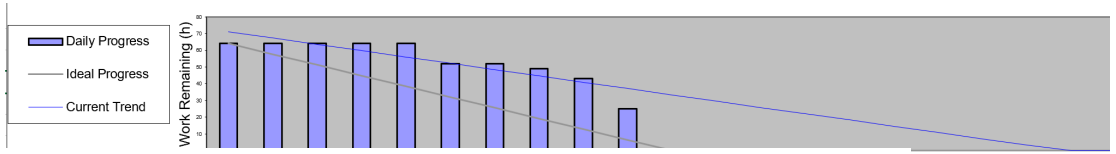
Task name	Story ID	Responsible	Status
View current status (currently boradcasting/not, check timestamp??)	TRG11	Yefta	Done
Stop broadcast button for broadcast/tracking [FOR TARGET]	TRG9	Yefta	Done
Create tracking functionality for the route the target took (for every few seconds get the target's current location and save it)	TRG1,VWR1	Yefta	Done
Create account/register/logout (sign in with google)	USR1	James	Done
Create "check-in" button's message functionality to message the viewers that they have arrived	TRG4	James	Done
Create account/register/logout (by email)	USR2	James	Done
Create notification functionality for "Arrived to destination"	TRG6	James	Done
Cancel/close tracking for the current target (basically close the app and end tracking session) [FOR VIEWER]	VWR3	Yefta	Done
Broadcast current location on android functionality (every few seconds broadcast's current location)	TRG1	Dean	Done
Create functionality to set safe zone on the geofence	VWR11	Dean	Done
Create QR Code functionality	TRG13	Yefta	Done
Create functionality to convert tracking ID to QR Code	TRG13	Yefta	Done
Create functionality to start tracking by scanning QR Code	VWR10	Yefta	Done
Create functionality to live track the target from the user side	USR4	Yefta	Done

Task name	Story ID	Responsible	Status
Create SOS notification functionality	TRG12	James	Done
Create functionality to expire QR code tracking or Link when the session is done	TRG14	James	Done
Create and fix web-app UI	USR6	James	Done
Create view location history functionality on web-app	VWR12, VWR9	James	Done
Create functionality to plot multiple dots (from coordinates) on the map	VWR1	Yefta	Done
Make starting point and destination point (icon) and marker for points history	USR4, VWR9	Yefta	Done
Contact Form (Web + Android)	USR9	Liem, James	Done
Polyline WEB APP	VWR8	James	Done
Polyline ANDROID	USR4, VWR9	Yefta	Done
Icon for Android Home Page	USR5	Liem	Done
Combine code from James to Yefta		James, Yefta	Done
Combine code from Dean to Yefta		Dean, Yefta	Done
Combine code from Liem to James		Liem, James	Done
Create website for JadyTrack app	VWR8	Liem	Done
Drawable Geofence	VWR5	Dean	Done
Create web-app for JadyTrack (web viewer for web tracking)	VWR8	James	Done
Combine Code		Liem, James, Yefta, Dean	Done
Documentation (for UAS)	USR8	James	Done

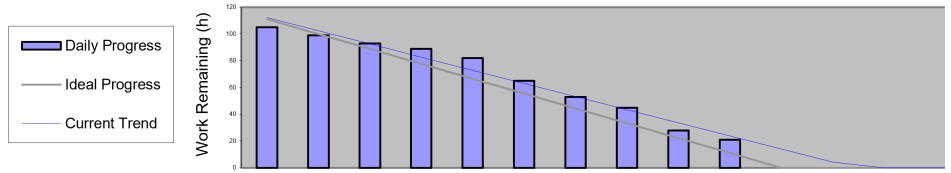
Task name	Story ID	Responsible	Status
Help Menu	USR7	Liem, James	Done
Tutorials/How to (make it like an infographic)	VWR13	Liem	Done
Update Website with New Contents	VWR8	Liem	Done
Design Poster	VWR13	Liem	Done
Geofence WEB APP	VWR8	James	Done
Geofence Notification	VWR5	Dean	Done
Quick Routes Feature**	VWR14	Yefta	Done
Create and fix mobile app UI	USR5	James	Done
Set appointments	VWR6	Yefta, Dean, James	Done
Android App Polishing (fix bugs, optimize, error handling, etc.)		Yefta, Dean, James	Done
Web App Polishing (fix bugs, optimize, error handling, etc.)		James	Done

FINAL: BURNDOWN CHART SUMMARY

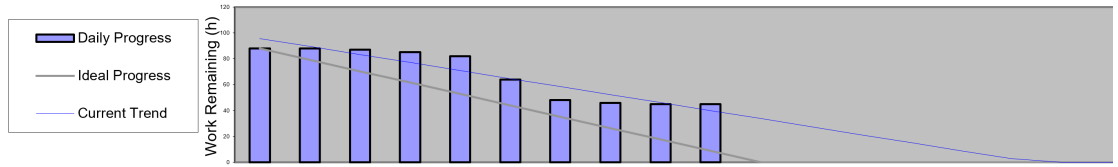
Sprint1



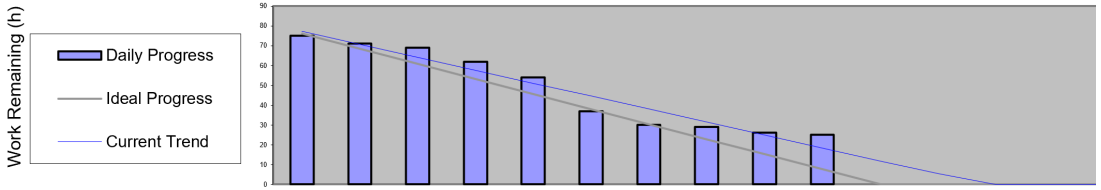
Sprint2



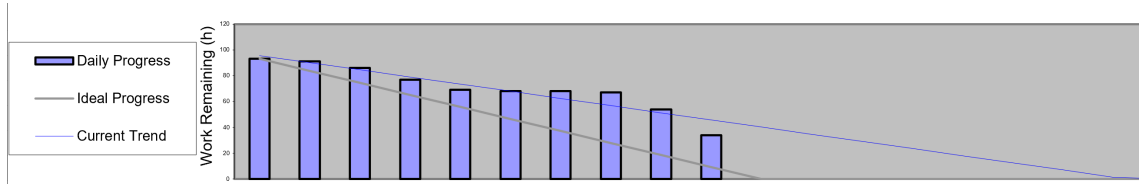
Sprint3



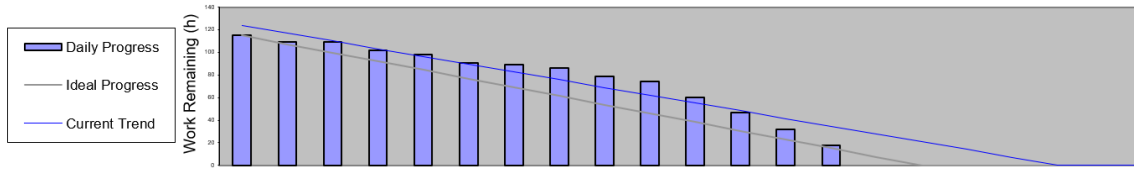
Sprint4



Sprint5



Sprint6*



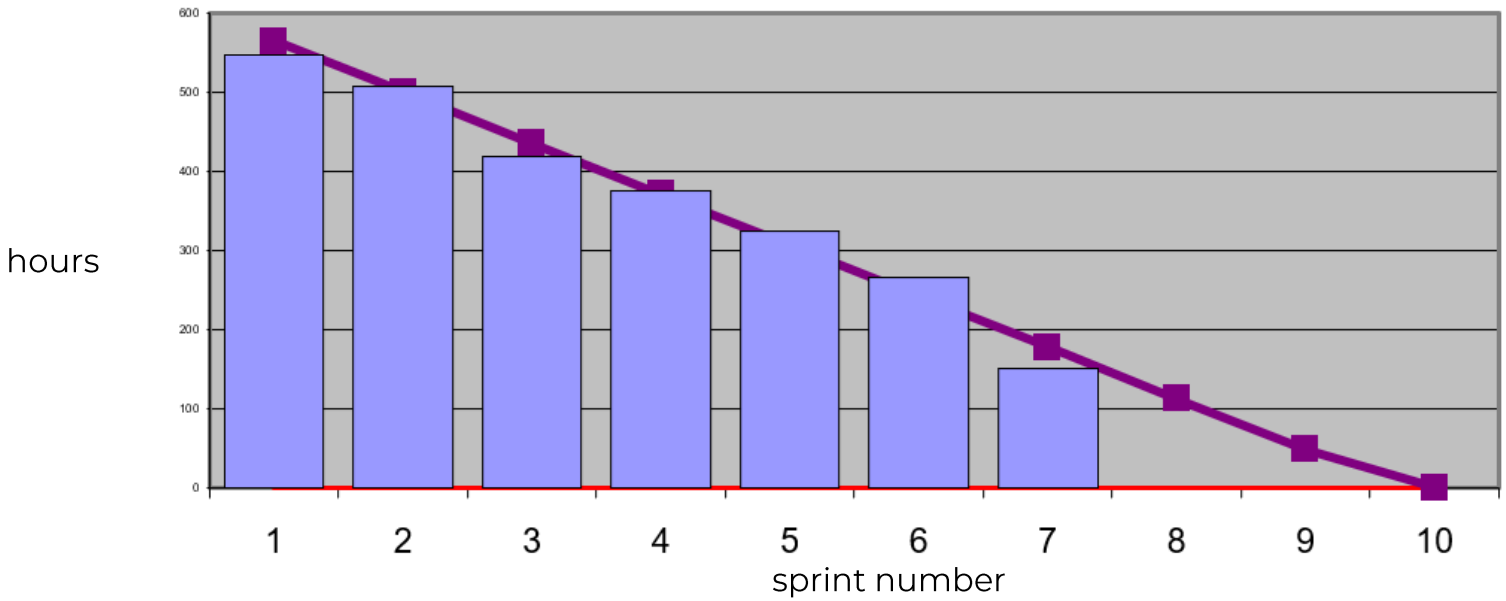
Even though from Sprint1-Sprint5 we had tasks that we had to carryover, Sprint 6 shows that we finished all the carried over tasks.

These graphs shows the final sprints and how we finished our tasks perfectly on the Ideal progress line (can be seen by the empty daily progress bar on the 15th spot on the 6th sprint*.

*This sprint counts the extra 5 days after the 17th of April since submission date is the 25th of April hence the extra bars on the burndown chart.

This meant that all of our tasks and user stories have been successfully accomplished and finished throughout all 6 sprints and that the application is ready.

FINAL: BURNDOWN CHART VELOCITY

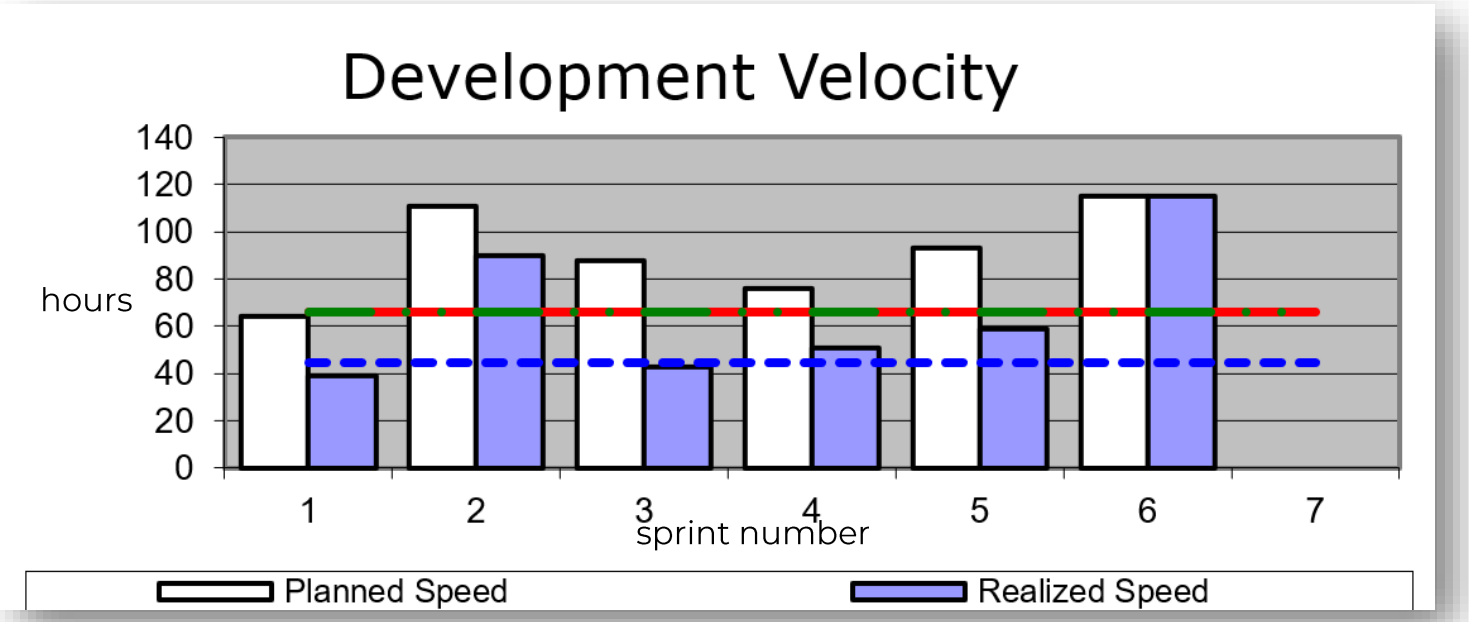


By looking at the previous sprints and their burndown charts, we can estimate that it will take at least 7 sprints to finish the project.

However we did not have time for 7 sprints.

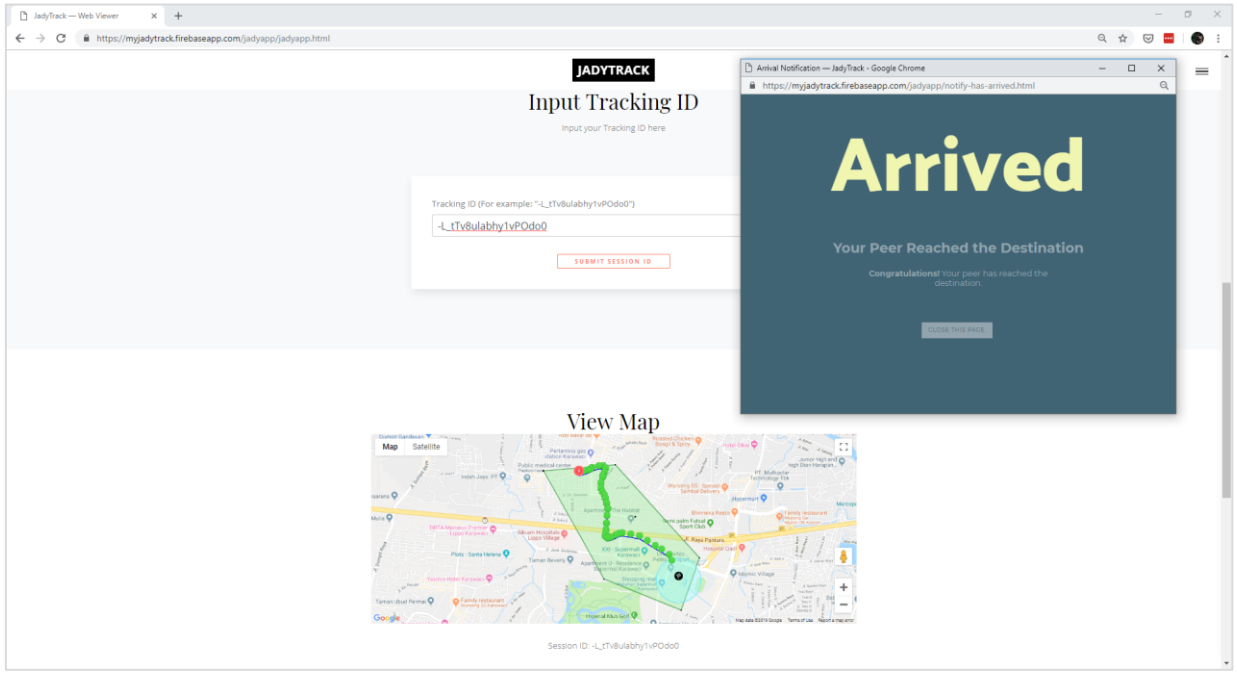
FINAL: VELOCITY CHART

Since we did not have time for a 7th Sprint, we decided to spend extra time in the 6th sprint to finish all the tasks.



Sprint Development Velocity	Explanation
Sprint 1	Shows how we are still learning and starting out which is why we did less than we planned as we learned and tried to adapt.
Sprint 2	Shows that we are just below the planned schedules this is caused by some challenges in completing some tasks.
Sprint3	Velocity went lower because the team had midterm exams (UTS) that caused the team to not have time to do the tasks.
Sprint 4	Shows how the team is catching up to previous tasks while also doing new tasks and doing more work.
Sprint 5	Although the project is supposed to be finished, the complexity of the task is too hard given the deadline. This is why the realized speed is lower than planned and another sprint had to be conducted.
Sprint 6	Velocity shows the team grinding to finish all of the tasks needed and then successfully doing all the planned tasks. This meant that an extra 7th sprint is not needed

FINAL: PRODUCT OVERVIEW



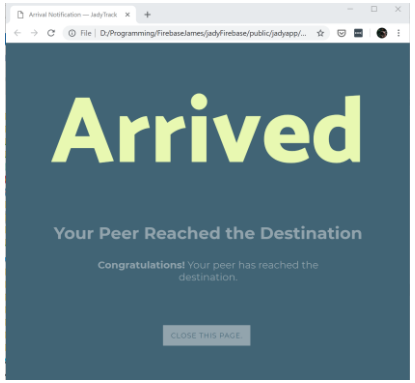
WEB APP

Web-App Complete with Geofence

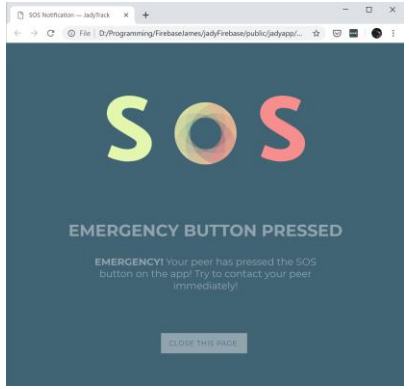
Web-app fully functional and working with the geofence, route, destination point, starting point, and more.

Notification Popups

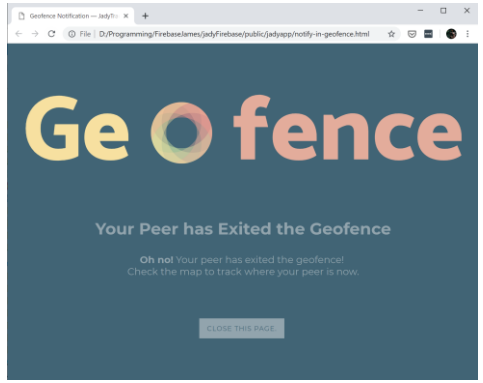
Fully functional notifications which popups (if the user disables popup blocker) for the notifications of user arrival, user activating the SOS functionality, or when a user exits a geofence.



Popup when target arrives at destination

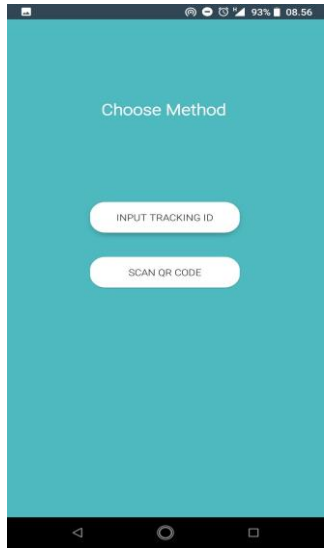


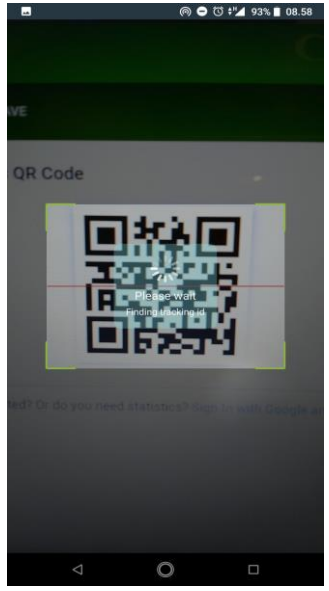
Popup when target activates the SOS functionality

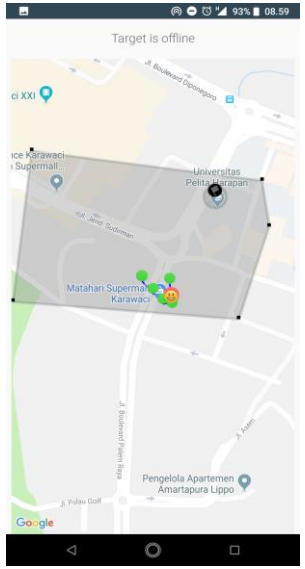


Popup when the target leaves their geofence

FINAL: PRODUCT OVERVIEW





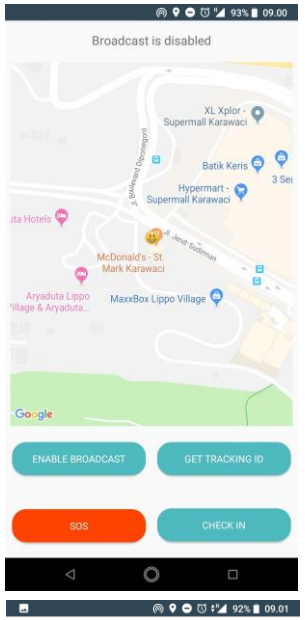


ANDROID APP: VIEWER

Input Tracking ID / Scan QR Code
When user click on viewer they have to input tracking ID of the target or scan QR code that has been generated by target

Monitor Target
After that, the viewer can monitor target location.

FINAL: PRODUCT OVERVIEW



ANDROID APP: TARGET

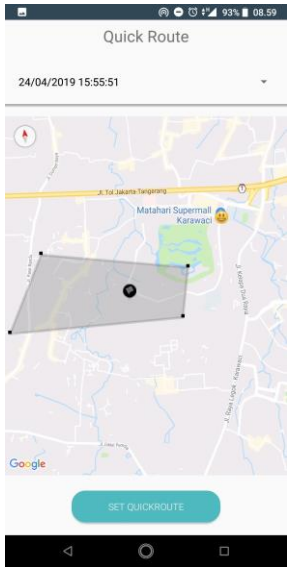
Enable Broadcast

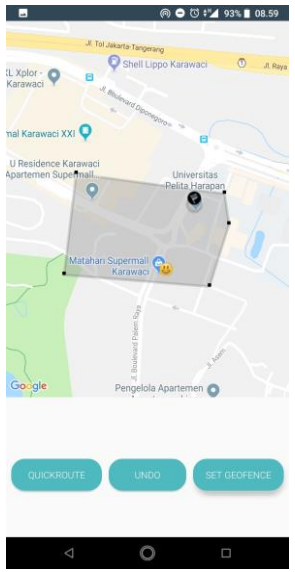
After user choose to become target, they have to enable broadcast so they can sent the data of their current location to firebase and viewer can get target's location

Get Tracking ID

After enabling broadcast, target must click on target ID to generate tracking id so target can sent their current location to firebase. Target then can share their QR code to Viewer by scanning Target's QR Code or share tracking id to target's social media

FINAL: PRODUCT OVERVIEW





ANDROID APP: APPOINTMENT

Input Tracking ID

Same step as Viewer before, input or scan Target tracking ID so Viewer can get Target's current location. Viewer then can set new geofence or set geofence using quick routes.

Set Geofence

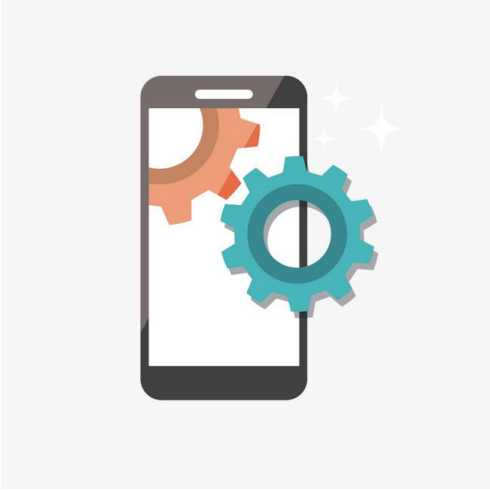
Viewer click on Map to point where is Target's destination and after that Viewer make geofence to monitor Target if they left the geofence. The first click is for destination point and second click above is for geofence. There are maximum 10 point of geofence border. After clicking to make geofence Viewer must click set geofence to sent it to firebase so that Target can see the geofence and Viewer can be notified when target leaving the geofence.

Quick Routes

If Viewer already make geofence on their account before, they can use their past geofence to set the new one.

JADYTRACK

HOW IT WORKS (TARGET)



1. Target enables broadcast

2. QR Code/TrackingID/ Link is generated

3. Target Coordinates is broadcasted to the database

JADYTRACK

HOW IT WORKS (APPOINTMENT)

1. Viewer Enters QR Code/Tracking ID/Link

2. Viewer draws or set quick routes and then sets geofence

3. Viewer's app is set to listen to the database for changes according to the ID

4. Target's coordinate plotted on the Phone

5. Notification is triggered on the Viewer's phone when a proper flag appears

JADYTRACK

HOW IT WORKS (VIEWER)

1. Viewer Enters QR Code/Tracking ID/Link

2. Viewer's app is set to listen to the database for changes according to the tracking ID

3a. Target's coordinate plotted on the Phone

3b. Notification is triggered on the Viewer's phone when a proper flag appears

LIBRARIES/APIs

Google Maps API

Google Maps API for the basic map and basic functionality

Firebase API

Firebase used for central server functionalities (database, storage, authentication, hosting, etc.)

Android Libraries

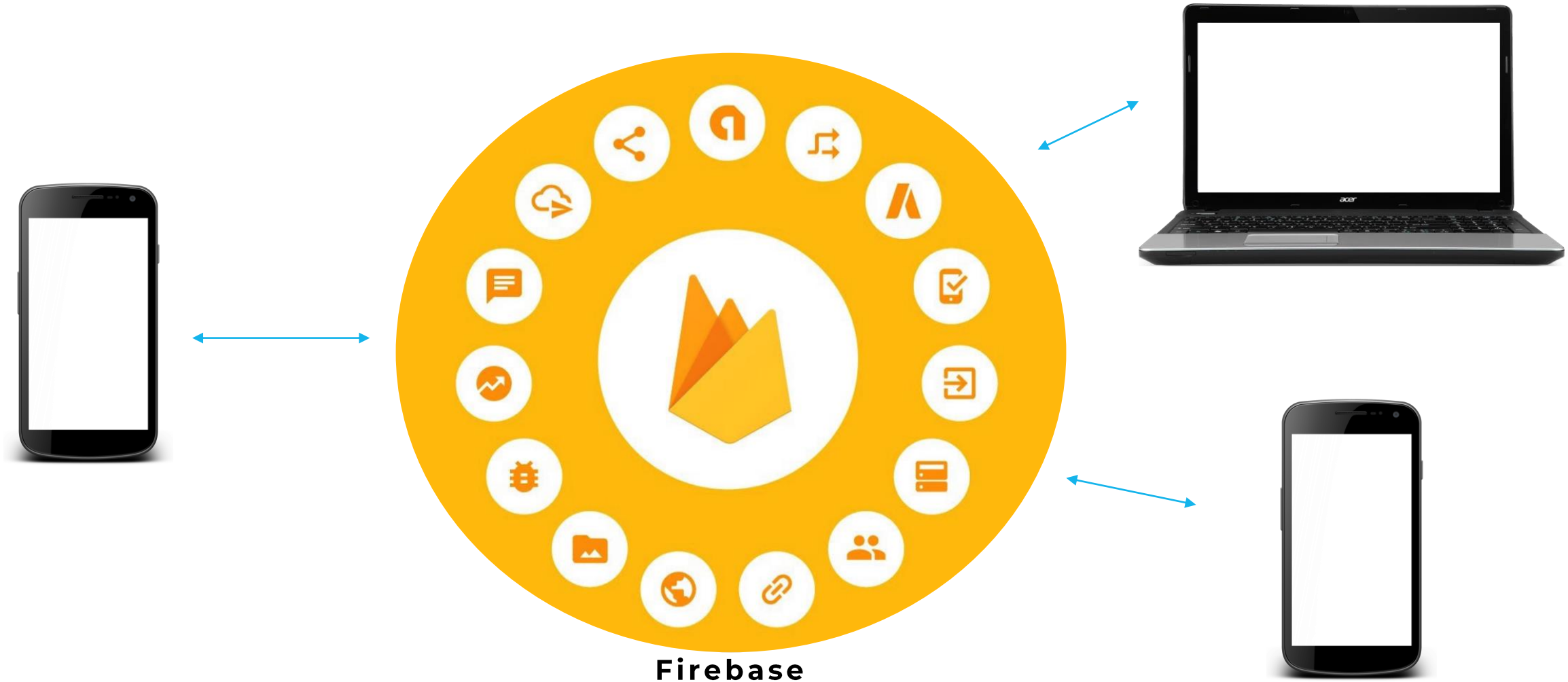
Other extra smaller libraries used to enable interconnectivity and additional smaller less significant functionalities

Website

Our website uses the standard HTML JS and CSS to help create the web app and web interface

JADYTRACK

CLIENT-SERVER



Firebase

We use this for the CDN and services available

FINAL: LESSONS LEARNED

TECHNICAL ASPECTS

- **Firebase** creating an application from scratch to firebase on Android and Web
- **Firebase Realtime Database** NOSQL and synchronization to share data between client (android app, and web-app) and server
- **Firebase Authentication** creating and managing login/registration and hashing the password data
- **Firebase Hosting through CLI** using command line interface to host files online
- **Android development** using Android Studio to create Android apps with significantly bigger scale
- **AndroidX** utilizing the new improvement to the original Android Support Library.
- **External Libraries** using additional libraries in order to assist in the development of web and android apps
- **Developing Web Apps** Utilizing Javascript, HTML, CSS, JQuery to create an interactive WEB-APP.
- **Utilizing APIs** to communicate between devices and the server and to the WEB-APP.
- **Creating apps that communicate through the internet** is something the team has never tackled before
- **Notifications** creation of notifications on Android and Web
- **Google Maps for Android API** using this API in an Android application to get location plot data, and more
- **Google Maps for JavaScript** utilizing this API in the web app to plot data, draw shapes for geofence, and more
- **Geofence** creation and manipulation and learning the technical aspects behind the geofence creation
- **Convex-Hull algorithm** (geofence algorithm to draw shapes easier)
- **Algorithm to know if a point is inside a border** (for geofence notification)

JADYTRACK

FINAL: LESSONS LEARNED

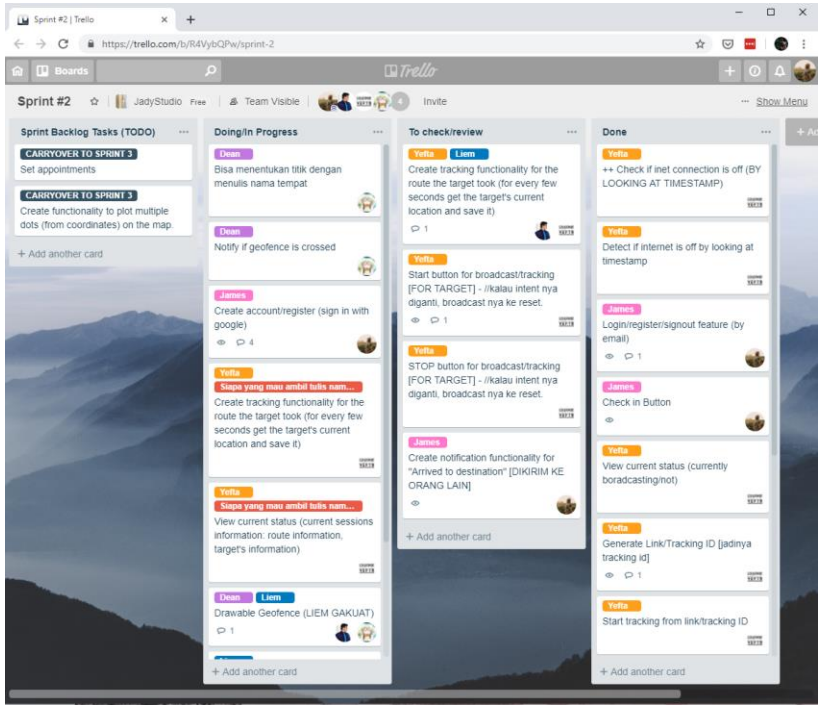
SCRUM TEAM

- **Regular meetings** and updating progress regularly to the team
- **Working in iterations**
- **Planning for each iteration** so that the business knows what's coming;
- **Keep the team updated** on your progress and your issues;
- **Communication** is key
- **Evaluate/retrospective** every sprint iteration and brainstorm actions to improve.
- **Underestimating tasks and complexity** leading to delayed progress
- **Unexpected things happen** therefore we need to calculate extra time in order to actually finish the tasks
- **Target deadline was too optimistic** leading in unfinished tasks and needing an extra sprint
- **Developers need clearer functional specification** before coding to avoid wasting time coding the wrong thing/when something changes mid development
- **Don't start work you can't finish** because this resulted in wasted time when a task could be given to another member
- **Procrastination is not an option in SCRUM** as you have to eventually pile up the work at the end of each sprint

JADYTRACK

FINAL: LESSONS LEARNED

SCRUM MASTER

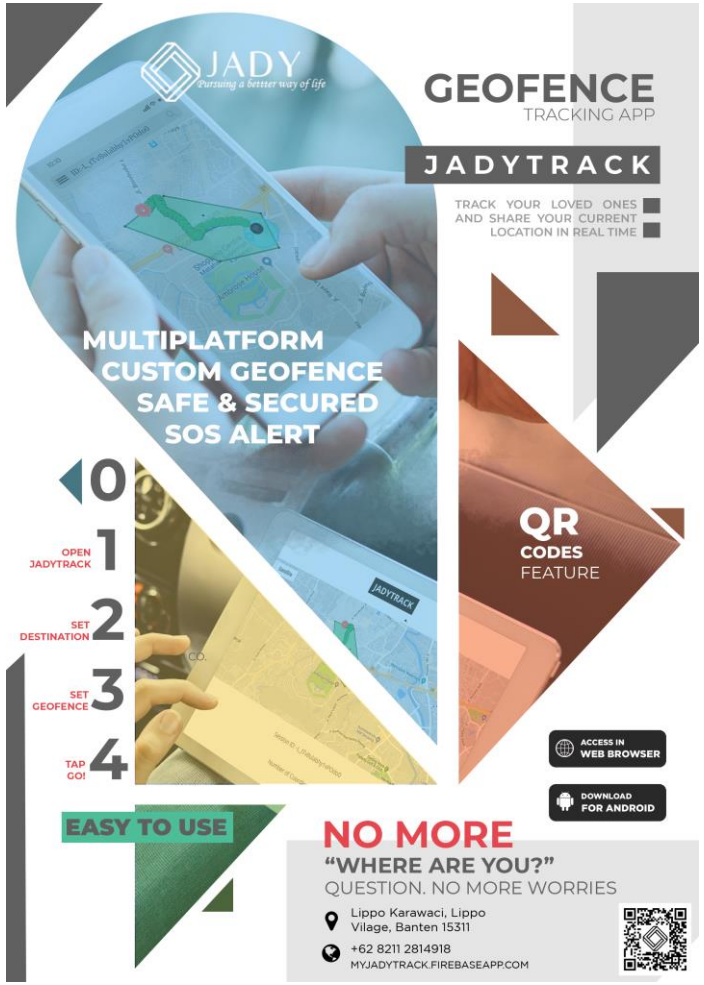


Kanban board (Trello)

Using a Kanban board allows the team to visually see their tasks and keep them focused while keeping tasks visible.

- **Coaching and guiding** the team working on the project.
- **Understanding Scrum** framework and methodology.
- **Following Scrum** practices.
- **Determining Sprint** durations.
- **Calculating product backlogs**
- **Planning** for less dependencies on tasks
- **Calculating burndown** charts
- **Creating velocity** charts
- **Help fix problems** so that the team can keep progressing
- **Facilitating regular Scrum meetings**.
- **Conducting retrospective** meetings.
- **Asking the right questions of the team**, such as what they are working on and if they have any questions or complications.
- **Keep the team focused** and reminding them away from distractions.
- **Providing opportunities and tools** for maximizing productivity (ex:Trello)

FINAL: POSTERS & MEDIA



JADY TRACK +

"With JadyTrack, there's just one less thing to worry about"

James Adhitthana (00000021759) | Andre Kurnia (00000021269) | Christopher Yefta (00000026157) | Deananda Irwansyah (00000025513)