Aperture By Octech Solutions

Formal Team

Line Manager

Dr. Hani Ragab Hassen

Team Lead

Muhammad Assad Khan

Acting Team Lead

Baber Jan

Members

1. Baber Jan
2. Gaurav Gosain
3. Gayathri Girish Nair
4. Hasan Kapadia
5. Mohamed M Elfarash
6. Muhammad Assad Khan
7. Tasneem Hussein
8. Yoshi Jasmin

Contents

The Vision

Aperture is a photo sharing application set in a fun, competitive and educational environment.

By allowing users to create and enter photography challenges and gain points on their posts, aperture succeeds at giving users a unique gaming experience with players guaranteed a multitude of options to win challenges, badges and collect profile points.

Aperture allows users to share, comment and provide constructive feedback on posts in hopes of building an active, fun, encouraging and ever growing community of photography enthusiasts, hobbyists, professionals, gamers and anyone else who may be curious.

Every user's user experience, suggestions and privacy is important to us. Aperture enables users to report any content that they deem inappropriate or bugs that they discover to app managers. All application users shall follow a strict "no human in image" policy in adherence to our efforts at keeping this platform unbiased, focused on user contribution and free from legal hap hassle.

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1. Overview of the System (Gayathri)

High-level overview of technologies and components.

Aperture is a responsive, cross-browser compatible, web-based application developed primarily using ReactJS and supporting services.

1.1. Technology Used

- HTML, CSS, JavaScript
- React JS, JSX
    - React DOM
    - React Bootstrap
    - React-HTML5-Camera-Photo API
    - React-Redux
    - React Flip-Move
- Google Firestore (database, auth, storage)
- Material UI
- Compress.js
- Node Package Manager (NPM)
- Visual Studio Code
- Github

FIND OUT REMAINING TECH WE USED AND ADD HERE ...

1.2. High level Components

1. **User Account System**

   This component handles user signup/login, profile creation/deletion/management and validation of user details. This component ensures that users submit consent forms in order to upload a photo of themselves as their profile picture or alternatively choose from pre-defined avatar pictures instead.

2. **Content Creation System**

   This component focusses on enabling users to create/destroy content on the application. Users may create posts (comprising of images - via image upload/taken using camera, associated GPS data and text), channels, collections, challenges and a portfolio. Users may delete any content that they have created. Features supported include modification of images during upload, tagging of objects/public events in images and sharing of content (on feedback/gaming forums, profile, collections, channels, challenges and portfolio).

3. **User Interaction System**

   This component enables interaction among users and/or application managers. Facilitated features include a chat between users, rating of posts, point (profile/challenge points) tracking, adding/deletion of comments, sending/accepting/ignoring friend requests, blocking/unblocking of users, following/unfollowing of channels, a feedback forum, a gaming forum, search/explore facility, news feed fetching, leaderboard management, participation in challenges, notification handling, user content/bug/help reporting management and making recommendations.

4. **Game Mechanics System**

   This component handles the game aspect of the application and deals with allowing users to create and participate in challenges and earn points and badges via user ratings on profile and challenge posts. Display of point status summary on leaderboards, announcing of winners and providing rewards are also managed by this system.

5. **Notification System**

   This system ensures that users are aware of all major events that they may be interested/involved in by sending notifications if and when they occur. Notifications will be sent when a user sends a friend request, likes a post, leaves a comment, accepts a friend request and deletes a challenge to name a few events.

6. **Application Improvement System**

   This component is the means through which users can contribute to improving the app by reporting bugs or inappropriate content. This system ensures that all user reports will be displayed to application managers so that they may monitor user satisfaction and take necessary action to ensure that the app remains safe and fun for all.

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2. Detailed Design (Elfarash, Hasan, Assad, Gaurav(Class Diagram))

Dataflow diagrams, UML diagrams, Class diagrams, etc.

This section features visual aids that clarify/support design choices made. Significant diagrams that were described in detail in stages 1 and 2 of this project shall be revisited here in addition to new ones.

MORE ...

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3. Final Interface Design

This section in addition to design elements and thoughts behind the final product, captures approaches that were taken and milestones reached along the way. Also included is a brief description of testing methods adopted to ensure technical correctness and a short guide to application installation, setup, maintenance and usage.

3.1. Application Layout & Navigation (Elfarash, Yoshi)

Layout and navigation of the application or applications.

MORE ...

3.2. Implementation Methodology (Gayathri)

Iterations/Scrum/Other agile techniques?

It was decided after considering both a fully pre-planned approach and an agile approach that agile process scrum would be the best choice of implementation strategy particularly because the wiggle room that agile provides is ideal for accommodating learning curves that would have to be overcome in order to produce a final product.

Since all developers are students, it was expected that there would be a need to revisit and refine parts of the application from time to time. This approach of coming back to an implemented portion to further test and refine it in iterations was adopted to ensure that implemented parts of the application were indeed functional.

The primary implementation schedule involved weekly sprints where every team member would be allocated certain tasks to complete for the week. Given the COVID-19 scenario, all group meetings were online. Efforts were made to ensure that at least 1 meeting via Microsoft Teams occurred every week. All the while, the team remained constantly in touch with each other via a shared and project only WhatsApp group. Additionally, weekly meetings where the line manager was present took place every week.

It was decided that each member would regularly update all other members via a shared WhatsApp group exclusive to daily scrums, about their progress in what was termed a "Daily Scrum Report". This report would include what the member had been able to implement the previous day and what he/she was hoping on implementing on the current day. If a member was

unable to complete his/her allocated task in the given time frame, then this task would be reallocated to the same/another member for the next sprint.

This system although initially agreed upon was slowly established through the 3 stages. This system was fully in place and efficient starting mid stage 2.

3.3. Development History (Gayathri)

What was achieved in each iteration/sprint?

Following are 3 tables that summarize all achievements from every sprint for stages 1, 2 and 3 respectively.

Aperture Sprint Achievemets Summary	
Stage 1	**Achievements**
Sprint 1	Discussed impementation plans and determined what technologies to use and did SWOT analysis to determine team roles after discussing team each team member's skills. Critically went over the specifications given. Application was broken down into 11 systems.
Sprint 2	Team roles for stage 1 were finalised. Functional and non-functional requirements were identified from the specifications and discussion began regarding company and app names, logos, website and user interface designs. The 11 systems comprising our application was narrowed down to 6.
Sprint 3	The functional and non-functional requirements were furthur refined and sorted into their corresponding systems within the application. Use cases were identified and work began on risk analysis. A plan for what must go in the report and how this work would be divided amongst memebers were decided.
Sprint 4	An early and incompete draft of the report with all necessary headings was produced which was meant to be filled as we progressed through the stage. Designs for the prototype of the app were drafted and the FRs and NFRs were refined once more.
Sprint 5	Finalized the use of google firestore for storage and heroku as the website hosting platform. Use cases were refined and use case diagrma were made. Work continued on creaing application prototypes and mock ups.
Sprint 6	Every member's work so far was compiled together and the leader changed from Hasan Kapadia to Muhammad Assad Khan. Preparations for usability study began and the class diagrma was drafted.
Sprint 7	Usability tests were devised. Usability and project costing parts of the report were drafted.
Sprint 8	Questionnarirs were given out and the usability test was undertaken. Usability test results were compile and added to the report. The report was further refined and made ready to submit.

Achievements Summary Stage1

Aperture Sprint Achievemets Summary

Stage 2	Achievements
Sprint 1	Discussed the plan for company website and decided what it would contain. Discussed what company terms & conditions, security policy and privacy policy would be. Decided that our website would have no cookies and familiarized ourselves with W3C and GDPR rules. Work began on the development of the website and each section was tested if required (a section of the website would be tested on various scrren sizes to see if responsive etc.) Work began on the stage 2 report. Everyone began looking up ReactJS and Firestore.
Sprint 2	Work on the website development continued. The navigation bar, landing section, about us section and recent projects section was already completed in the previous sprint. This sprint led to the completion and hosting of the website after our services section, our team section and the footer was finished. Final touches in terms of css and navigation was added before the website was hosted.
Sprint 3	Executed create react app command and edited the tempate to create a basic broilerplate code for everyone to get familiarized with. Started implementation on 3 identified sub-systems (Login and Account, Content Creation, User Interaction System). Work began on features like accessing the camera, login, giff overlays, map view, creating/deleting/sharing a post, uploading an image and porfolios.
Sprint 4	Work continues on implemnting the 3 subsystems and new functionalities like photo editing, validation etc were added to implemented portions. Firebase db collections structure was improved.
Sprint 5	Newsfeed page was set up with human detection, channel posting, forgot password functionality, chat system and post rating was implemented. Testing and fixing of all features thus far was done.
Sprint 6	Pending tasks were completed. Map view, post rating, channels and CSS was improved. Becoming friends/blocking and the group chat was implemented along wth channel subscription/unsubscription. Uploading of images was refined.
Sprint 7	Pending work from previous sprint was completed and work becan on feedback and gaming forums. Stage 2 report was edited and refined. Final tests were done and fixes were implemented.
Sprint 8	# Stage 2 report was further tweaked and made ready for submission.

Achievements Summary Stage2

Aperture Sprint Achievemets Summary

Stage 3	Achievements
Sprint 1	Thorough testing of features implemented so far was done. Improvements to existing componets and remaining bugs were fixed. Each member spent some time individually
Sprint 2	
Sprint 3	Work on feedback forum continued. Notification system was impemented and security rules for firebas collections were also put in place. Group chat was finished and challenge creation/deletion along with the challenges display was completed. The leader, Muhammad Assad Khan who was tasked with ensuring report gets done underwent multiple eye procedures and thereby would not be able to contribute as his eyes recovered.
Sprint 4	Work remaining regarding challenges, notification system, firebase rules and leaderboard continued. Points tracking and awarding was implemented. Implementation of the forums were undertaken.
Sprint 5	Logic of game seasons, player leagues, rewards and badges were implemented. Pending work from previous sprint was completed. Baber Jan took over as acting team leader as Assad recovered.
Sprint 6	All features so far were tested and fixed. Work continued on leaderboards and new firebase rules. Seasons logic and final features of challenges were completed. Work began on announcing the fastest growing channel. tagging in images logic and the stage 3 report. Report was handed over from Muhammad Assad Khan to Gayathri Girish Nair on accord of him still recovering. Map view google maps billing issue was fixed. What was/yet to be completed was reviewed and a new more intense plan was created. CSS at portions were fixed. An ubuntu server was leased for the team to use by our line manager Dr. Hani Ragab.
Sprint 7	Work began on the application improvement system beginning with implementation of the functionality where a user can reort bugs and inappropriate content. The map view was made better by allowing user to view posts on the map. Some more CSS fixes were done. Server side logic(check for db details every 24 hrs etc) was implemented. All pending work from previous sprint was finished. Work on report continued and project evaluation was undertaken. Updating leaderboards daily functionality implemented.
Sprint 8	** NOW **
Sprint 9	** FUTURE **

Achievements Summary Stage3

UPDATE STAGE 3 AS WE PROGRESS & EDIT IF NEEDED...

3.4. Testing Regimen (Yoshi)

How was the final system tested for technical correctness?

MORE ...

3.5. Install - Setup - Maintain (Baber)

Documentation on how to install/setup/maintain the final system.

MORE ...

3.6. User Guide (Baber)

Short user guide.

MORE ...

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4. Project Evaluation

Assess project as a whole.

This section, after an overall analysis of the the production process and final product, lays out organizational approaches taken, the development journey and value of the final product (includes descriptions of functionality achieved, limitations, unique elements and usability test results).

4.1. Organization (Gayathri)

4.1.1. Organizational Structure

How was your group organized?

The group was organized such that every member would contribute to all parts of design and development.

Some possible languages/technical skills which would potentially be needed in the project was identified and members were required to grade themselves and assign points reflecting their confidence levels in with regard to them. This was a good exercise in ascertaining capabilities of team members that would prove crucial in assigning team roles.

SELF ALLOCATED CONFIDENCE POINTS (MAX 5 & UNSURE/NOT CONFIDENT= #)								
TECH SKILLS	**MEMBERS**							
BackEnd	Gaurav	Tasneem	Baber	Hasan	M.Elfarash	Yoshi	M.Assad K	Gayathri
Django	1	1	#	2+	1	#	#	#
NodeJS	2	1	2	2+	#	2	1	2
MongoDB	#	#	1.5	2+	#	#	#	1
SqL	1	2	1.5	2+	3	1	2	2
PHP	#	#	#	#	#	#	#	1
FrontEnd	Gaurav	Tasneem	Baber	Hasan	M.Elfarash	Yoshi	M.Assad K	Gayathri
JavaScript	3	2	1.5	2	2	1	2	1
ReactJS	2	#	#	2	#	#	#	1
CSS	1	3	1	2	#	1	1	3
HTML	2	3	1	2	#	1	1	3
Photoshop	#	3	#	#	#	#	#	#

Confidence Points

In order to ensure optimum deployment of team members, a **SWOT analysis** was carried out.

SWOT SQUARE	
STRENGTHS	**OPPORTUNITIES**
# 2 Proficent Front End Developers. # 2 Proficient Back End Developers # All members aquainted with HTML, CSS, JS.	# Line manager available for guidance. # F29SO lecture materials provide insights into group management. # All members are eager to learn. # Online Platforms like MS Teams and WhatsApp available for online contact.
WEAKNESSES	**THREATS**
# All members are students and lack expertise. # Members are working with each other for the first time.	# Covid-19 prevents team from meeting in person. # Other academic commitments that will demand team's attention.

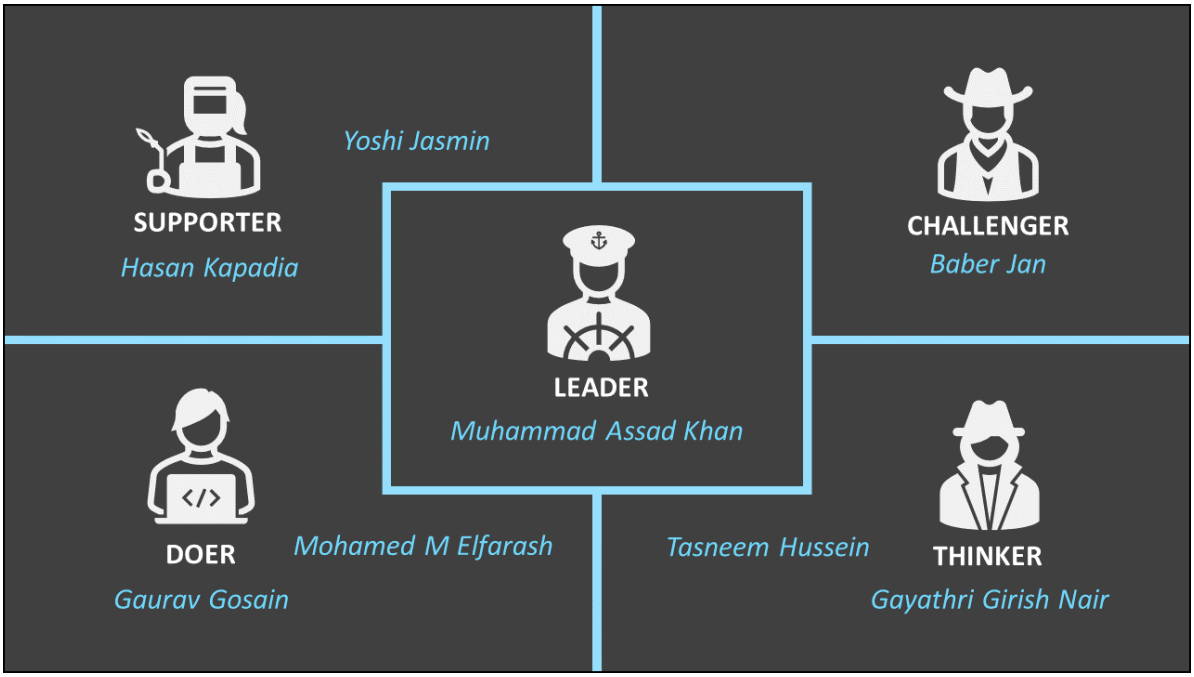
SWOT Analysis Square

Based on observations and after discussion, following roles were initially decided upon. However, it was decided that all members would contribute to all areas of developments. The allocated roles would mean that every member would oversee/guide activities that would fall under his/her role description.

- Baber Jan - Back-End Lead Developer
- Gaurav Gosain - Front-End Lead Developer
- Gayathri Girish Nair - Programmer & Designer
- Hasan Kapadia - Team Leader & Database Lead Developer
- Mohamed M Elfarash - Programmer & Documentation In Charge
- Muhammad Assad Khan - Programmer & Report In Charge
- Tasneem Hussein - Graphic Design Lead & Programmer
- Yoshi Jasmin - Application Testing In Charge & Programmer

Towards the end of stage1, it was a collective decision to appoint Muhammad Assad Khan as the new leader as the previous leader was unable to fully commit to oversee the team due to personal issues. Later during stage 3, Baber Jan was selected as the project manager/acting team lead since Assad was unable to contribute on account of having to stick to a recovery regimen following medical eye procedures. As we worked together, each members' true strengths surfaced and it became clearer where each member would be most valuable given a task.

Following is a categorization of members as per their primary aptitude adhering to **Honey's 5 Team Member Types**.



Honey's 5 Team Member Types

- **Leader**: Ensures clear objectives, collective involvement and commitment.
- **Challenger**: Questions effectiveness, presses for improvement and results.
- **Doer**: Is practical, reminds team to keep moving and thereby drives team forward.
- **Thinker**: Produces carefully considered ideas and critically reflects upon other ideas/achievements.
- **Supporter:** Maintains team harmony and helps carry out/complete tasks.

That said, it was observed that collective efforts undertaken by the team led to all members qualifying to befit many of the above categories at various stages of design, development and documentation.

EDIT IF NEEDED ...

4.1.2. Team Work

Was the group organization successful? How well did your group collaborate?

Throughout development, all members were willing to collaborate and have always tried to produce good work. Even though members were allocated primary responsibilities (see section 4.1.1), the group shared responsibility fairly equally. Challenging situations like when the leader was re-appointed and when the leader got sick was thus, less damaging and the team was still able to produce good work during these situations.

Having members who had fine tuned programming skills as well as those who were proficient at organizing work, producing documentation, creating diagrams, critical analysis, coming up with designs and presenting content meant that the team was well balanced. This mix of skills allowed for members to compliment each other well.

A team member skilled at a particular task would guide others and draft a plan as to how to approach that task and all members would collaborate and contribute their portions to aid in completion of that task. A notable example of this system in action is the report generation process. One member who was skilled at organizing content, visualizing data and presenting information would be appointed to draft and oversee the report. This member would begin work on the report early on, decide what to put in it and appoint other members to contribute some

parts of the report. Every member would submit their parts to the report in-charge and this person would go on and compile the report, ensure uniformity and get it ready to submit.

In all instances where one member had tried to implement a feature but failed, either another member would go ahead and complete that task or would guide the member in completing his/her task. For example, for stage 2, a member had implemented the functionality of adding overlays to images but was unable to merge it with the main application due to differences in implementation styles of the post and of the overlays feature. Another member who had worked on the post creation functionality, later integrated it into the application in stage 3 thus ensuring that no member's work was lost.

EDIT IF NEEDED ...

4.1.3. Overcoming Problems

How did you handle any problems which arose?

Following are few problems that the team had faced and methods that were adopted to combat them.

1. **Lack of Communication**

   Problem

   Weekly meetings alone was insufficient at ensuring that all team members were up to date on all developments made. This meant that member's were a bit lost on what to do and by when to submit their parts.

   Solution

   This problem was anticipated early on and hence it was decided that a WhatsApp group be made where members could regularly discuss all what they have done and share ideas in addition to Microsoft Team's Meetings. The scrum master would allocate tasks as well as a date before which each task had to be completed per sprint. But it was after this that a scenario where 2 members ended up implementing the same feature, the chat system, occurred. This happened because of a misunderstanding that stemmed from the fact that both members were not aware of the the other was implementing so one member decided to implement another feature after being done with his/her own. This was an issue because it meant that one member's work would be lost and because one of the members could have better spent his/her time implementing another feature that no one was working on. This issue was discussed to avoid further such misunderstandings, all members were then on strictly required to log their daily scrum reports, inform all other members if they planned on taking up a new task or request the scrum master for a new task and regularly update all members about what he/she was working on or planned to work on.

2. **Unable to Find Files**

   Problem

   All stages of development involved production of various files (documents, images, excel sheets etc.). These files were shared via the WhatsApp discussion group and thus would get lost amongst conversation. This meant that files shared in the past would be very difficult to revisit.

   Solution

This problem was addressed though the creation of another WhatsApp group for the sole purpose of sharing files only. Also, for parts of development that required a lot of common files like the report, it was decided that these files may also be stored on GitHub repositories where members can easily access and update them.

3. **Too much of a good thing, a bad thing?**

   Problem

   Because every decision was discussed and because every member always had inputs and wanted the best, there were often a lot of different approaches to solving a particular problem and clash of ideas/opinions was frequent. There was a tendency to overthink and get stuck thinking about details which would lead to decision paralysis and one idea could not be chosen over another as both would be possible ways to implement a feature.

   Solution

   Such problems became less prevalent as the team continued to work together. Soon there was more trust amongst members and one member simply trusted the other to implement the best possible solution to a problem. An understanding was reached where in it was decided that every member would try and implement their appointed feature within the sprint upholding minimum standards. If the member managed to finish the feature before the sprint ended then he/she would spend time improving it. Else, that member was to move on to the next task until there came an opportunity when this feature could be improved either by the same person who first implemented it or by someone else. Decision dilemmas would also be solved via voting or asking for the line manager's view.

EDIT IF NEEDED ...

4.1.4. Sticking To Schedule

How successful were the timings in your original plan?

MORE ...

4.2. Implementation

4.2.1. Implementation Schedule (Gayathri)

What was your implementation schedule? How did the implementation schedule differ from the original plan?

The implementation schedule took place in sprints where a single sprint would typically span a week. A stage of development was expected to be complete in 8-9 sprints which was indeed the case for all 3 stages of development. Each sprint would have a plan drafted on day 1 with some goals to achieve in mind. Following days would be used to build, test, review and fix the portion of the application/document which was due that sprint. For sprints that were shorter than a week, some activities like building was done in parallel to testing and producing documentation.

Aperture Sprint Structure		
SPRINT	DAY1	Plan
	DAY2	Build
	DAY3	Build
	DAY4	Test | Review
	DAY5	Test | Review | Build
	DAY6	Fix
	DAY7	Fix | Polish

Sprint Structure

The implementation schedule drawn from the "**Aperture Project Diary**" can be viewed below in 3 tables. One for stage1, stage2 and stage3 respectively. The "Success Measure" column ranging from 1 to 3 stars depict how successful/effective at getting work done, each sprint was.

Aperture Project Diary

Stage : 1 **Duration :** 27-Sep-20 **to** 26-Nov-20

Sprint #	Task #	To Do	Task Start Date	Task End Date	Completion Status	Task Category	Scrum Notes / Achievements	Sprint Start Date	Sprint End Date	Success Measure
N/A	1	Communication Setup	27-Sep-20	27-Sep-20	✔	Team Building	# Team got Aquainted # Discussed development plan # Discussed possible technology # Flutter? / Dart? / NodeJS? / Django?/ React? Etc # Leader = HASAN KARADIA	27-Sep-20	4-Oct-20	★★★
	2	1st Group Meeting	30-Sep-20	30-Sep-20	✔					
	3	Group Leader Election	1-Oct-20	1-Oct-20	✔					
	4	SLDC Model Discussion	2-Oct-20	3-Oct-20	✔					
1	1	Team Discussions	6-Oct-20	7-Oct-20	✔	Team Building	# Fixed meeting dates and times # More discussion about what technology may be used	5-Oct-20	11-Oct-20	★★
	2	Reading & Understanding Spec	10-Oct-20	11-Oct-20	✔	Requirements Engineering				
	3	Designing FRs & NFRs	11-Oct-20	11-Oct-20	✘					
2	1	Designing FRs & NFRs	12-Oct-20	15-Oct-20	✔	Requirements Engineering	# Determined team roles # FRs & NFRs identified # Designs and Logo discussions undertaken # Company name determined # Divided app into subsystems	12-Oct-20	18-Oct-20	★★★
	2	Group Discussion Regarding URs	16-Oct-20	17-Oct-20	✔					
	3	Initial Low Fidelity Prototype Design	15-Oct-20	17-Oct-20	✔	Prototype Development				
3	1	Compile All URs from each member	20-Oct-20	22-Oct-20	✔	Requirements Engineering	# FRs & NFRs established # Use Cases determined # Risk Analysis done # Division of work for report complete	19-Oct-20	25-Oct-20	★★★
	2	Combine URs & Sub-Urs	23-Oct-20	24-Oct-20	✔					
	3	Determine Use Cases	23-Oct-20	25-Oct-20	✔					
4	1	Refine FRs & NFRs	26-Oct-20	1-Nov-20	✔	Requirements Engineering	# Rough version of the final report produced # Designed Prototype # FRs & NFRs refined	26-Oct-20	1-Nov-21	★★★
	2	Created Prototype	29-Oct-20	1-Nov-20	✔	Prototype Development				
5	1	Prototype to Upload Photos	2-Nov-20	4-Nov-20	✔	Prototype Development	# Discussed possible data storage options # Discussed possible website hosting options # Use Cases refined # Mock Up created	2-Nov-20	8-Nov-20	★★★
	2	Prototype for Usability Tests	5-Nov-20	8-Nov-20	✔					
	3	Refine Use Cases	6-Nov-20	8-Nov-20	✔	Requirements Engineering				
6	1	Create Questionnairs & Surveys	9-Nov-20	12-Nov-20	✘	Usability Tests & Mock Ups	# Compiled every member's work. # Leader Change, new leader = MUHAMMAD ASSAD KHAN # Usability Studies development begun # Class Diagram created	9-Nov-20	15-Nov-20	★★
	2	Conduct Usability Tests with GDPR	13-Nov-20	15-Nov-20	✘					
	3	Refine Use Cases	9-Nov-20	11-Nov-20	✔					
	4	Compine & Assess Work	11-Nov-20	12-Nov-20	✔	UML Diagrams				
	5	Create Class diagrams	12-Nov-20	15-Nov-20	✔					
7	1	Create Questionnairs & Surveys	16-Nov-20	17-Nov-20	✘	Usability Tests & Mock Ups	# Designed usability Tests # Started usability report # Project costing drafted	16-Nov-20	22-Nov-20	★
	2	Conduct Usability Tests with GDPR	17-Nov-20	19-Nov-20	✘					
	3	Tabulate Test Results	20-Nov-20	22-Nov-20	✘					
	4	Refine Use Cases	16-Nov-20	19-Nov-20	✔	UML Diagrams				
	5	Create State Machine, Sequence Diagrams, etc	15-Nov-20	22-Nov-20	✔					
8	1	Create Questionnairs & Surveys	23-Nov-20	23-Nov-20	✔	Usability Tests & Mock Ups	# Questionnaires created # Usability testing underatken # Refined Report	23-Nov-20	25-Nov-20	★★★
	2	Conduct Usability Tests with GDPR	24-Nov-20	25-Nov-20	✔					
	3	Tabulate Test Results	24-Nov-20	25-Nov-20	✔					
	4	Compile, Review & refine UML diagrams	23-Nov-20	25-Nov-20	✔	UML Diagrams				
N/A	N/A	Submission	26-Nov-20	26-Nov-20	✔	N/A	N/A	26-Nov-20	26-Nov-20	★★★

Project Diary Stage 1

Aperture — Project Diary

Stage : 2 **Duration :** 17-Dec-20 to 04-Feb-21

Sprint #	Task #	To Do	Task Start Date	Task End Date	Completion Status	Task Category	Scrum Notes / Achievements	Sprint Start Date	Sprint End Date	Success Measure
-	1	Group Meeting for Stage 2 Discussion	17-Dec-20	17-Dec-20	✔	Stage Initialization	# discussed plans for stage 2 # created website plan = Home page, About us page, Contact us page, Projects page	17-Dec-20	18-Dec-20	★★★
	2	Task/Role Allocation	18-Dec-20	18-Dec-20	✔					
1	1	Website Design Discussion	19-Dec-20	19-Dec-20	✔	Company Website	# technology to use for website finalized. # discussed website look and feel # discussed Legal requirements # discussed Terms & conditions # discussed Security policy # discussed Privacy policy # discussed Cookies # discussed w3c rules and GDPR # decided and implemented the website theme # website development began # testing was done in parallel # stage 2 report started # everyone began familiarising themselves with ReactJS and Firestore	19-Dec-20	25-Dec-20	★★★
	2	Website code Implementation	19-Dec-20	25-Dec-20	✔					
	3	Login/Signup Form Implementation	23-Dec-20	25-Dec-20	✔	User Account System				
	4	Account Database Implementatoin	23-Dec-20	25-Dec-20	✔					
2	1	Login/Signup Form Implementation	26-Dec-20	27-Dec-20	✔	User Account System	# continued development	26-Dec-20	1-Jan-21	★★★
	2	Account Database Implementatoin	26-Dec-20	27-Dec-20	✔					
	3	Login/Signup Form Testing	28-Dec-20	29-Dec-20	✔					
	4	Account Database Testing	28-Dec-20	29-Dec-20	✔					
	5	Login/Signup Form Documentation	30-Dec-20	30-Dec-20	✔					
	6	Account Database Documentation	30-Dec-20	30-Dec-20	✔					
3	1	Homepage Implementation	3-Jan-21	5-Jan-21	✔	User Interaction System	# created React App boilerplate # work began on the 3 systems: Login and Account, Content Creation, User Interaction System # basic image editting done # accessing camera part done # login functionality implemented # overlays done # map view implemented # creating/sharing/deleting a post logic implemented # uploading a photo to a post from device storage or accessing the device camera and taking real time photos implementation started # portfolio view implementation started # gdpr regulations reviewd # explored react routing # signup implementation started # user profile implementation done # add/delete collections implementation done	2-Jan-21	8-Jan-21	★★
	2	User content Database Implementation	5-Jan-21	6-Jan-21	✔					
	3	User Portfolio, Channels & Map View	5-Jan-21	8-Jan-21	✘					
	4	Coding Photo filters/effects	7-Jan-21	8-Jan-21	✔					
4	1	Coding Photo filters/effects	9-Jan-21	9-Jan-21	✔	User Interaction System	# completed pending portfolio, channels, GPS # continued implementing edit photo, login, sign up # multiple image posts feature added # continued stage 2 report # validation implemented # firestore & google auth set up refined	9-Jan-21	15-Jan-21	★
	2	Implementation of comments/liking/rating	10-Jan-21	12-Jan-21	✘					
	4	User Portfolio, Channels & Map View	13-Jan-21	15-Jan-21	✘					
	5	Testing	15-Jan-21	15-Jan-21	✔					
5	1	Implementation of comments/liking/rating	16-Jan-21	17-Jan-21	✘	User Interaction System	# newsfeed page set up # human detection implemented # channel post added # continueed report # forgot password added # testing and fixing done # chat system added # rating implementation started	16-Jan-21	22-Jan-21	★
	2	Chat system coding	16-Jan-21	21-Jan-21	✘					
	3	User Portfolio, Channels & Map View	17-Jan-21	18-Jan-21	✘					
	4	Testing	16-Jan-21	16-Jan-21	✔					
	5	Documentation	17-Jan-21	17-Jan-21	✔	Content Creation System				
	6	Coding Collections	18-Jan-21	21-Jan-21	✔					
	7	Coding Channels	22-Jan-21	22-Jan-21	✔					
6	1	Coding Channels	23-Jan-21	23-Jan-21	✔	Content Creation System	# completed pending portfolios, GPS, ratings, channels # fixed CSS # implemented follow and unfollow users # implemented subscribe to channels # refined user upload images # group chat refined # implemented become friends functionality	23-Jan-21	29-Jan-21	★★
	2	Uploading Photos and Modify Photos	22-Jan-21	23-Jan-21	✔					
	3	Implementation of comments/liking/rating	23-Jan-21	24-Jan-21	✔					
	4	Channels & Map View	24-Jan-21	24-Jan-21	✔					
	5	User Porfolio	25-Jan-21	25-Jan-21	✘					
	6	Testing	24-Jan-21	25-Jan-21	✔					
	7	Documentation	26-Jan-21	27-Jan-21	✔					
	8	Overall app review + fixes	28-Jan-21	29-Jan-21	✔	Final Stage				
7	1	Overall app review + fixes	30-Jan-21	1-Feb-21	✔	Final Stage	# user consent form added # feedback forum implementation started # gaming forum implementation started # continued pending chat system # add comments functionality implemented # continued stage 2 report # stage 2 final testing and fixing done	30-Jan-21	2-Feb-21	★★
	2	Preparation for demonstration	2-Feb-21	3-Feb-21	✔					
	3	Chat system coding	30-Jan-21	31-Jan-21	✔	User Interaction System				
	4	Implement forums	31-Jan-21	3-Feb-21	✘					
	5	Finish Portfolio	1-Feb-21	3-Feb-21	✘					
N/A	N/A	Demonstration	2-Feb-21	2-Feb-21	✔	N/A	N/A	2-Feb-21	2-Feb-21	★★★
8	1	Report Final Touches	3-Feb-21	3-Feb-21	✔	Final Stage	# stage 2 report refinened	3-Feb-21	3-Feb-21	★★★
N/A	N/A	Stage 2 Submission	4-Feb-21	4-Feb-21	✔	N/A	N/A	4-Feb-21	4-Feb-21	★★★

Project Diary Stage 2

Aperture

Project Diary

Stage: 3 | **Duration:** 05-Feb-21 to 01-Mar-21

Sprint #	Task #	To Do	Task Start Date	Task End Date	Completion Status	Task Category	Scrum Notes / Achievements	Sprint Start Date	Sprint End Date	Success Measure
-	1	Group meeting for Stage 3 Discussion	5-Feb-21	6-Feb-21	✔	Stage Initialization	# app made installable as a native app through all major browsers.	5-Feb-21	6-Feb-21	★★★
1	1	Testing	7-Feb-21	10-Feb-21	✔	Stage Initialization	# Testing & fixing done # Learning ReactJS continued	7-Feb-21	13-Feb-21	★★★
	2	Documentation	11-Feb-21	13-Feb-21	✔					
2	1	Testing	14-Feb-21	19-Feb-21	✔	Stage Initialization	# Testing & fixing done # Learning ReactJS continued	14-Feb-21	20-Feb-21	★★★
	2	Documentation	20-Feb-21	21-Feb-21	✔					
3	1	Notification System Implementation	21-Feb-21	27-Feb-21	✔	Notification System	# Implemented the feedback forum # Implemented using device camera for mobile device # notification system implemented # Firebase security rules set up # Group Chat implemented # challenge creation implemented # challenges page implemented # leaderboard section started # MUHAMMAD ASSAD KHAN = leader + in charge of stage 3 report undergoes surgery :(	21-Feb-21	27-Feb-21	★★★
	2	Challenges Implementation	21-Feb-21	27-Feb-21	✔	User Interaction System				
	3	Implement Group Chat	21-Feb-21	27-Feb-21	✔					
	4	Leaderboard Implementation	21-Feb-21	27-Feb-21	✔	Gaming System				
	5	Implement Firebase Security Rules	21-Feb-21	27-Feb-21	✔	Backend				
4	1	Notification System Implementation	28-Feb-21	4-Mar-21	✔	Notification System	# continued implementing challenges # continued implementing notification system # continued leaderboards # points logic added # forums implementation started # continued implementing firebase rules	28-Feb-21	6-Mar-21	★★
	2	Challenges Implementation	28-Feb-21	6-Mar-21	✔	User Interaction System				
	3	Forums Implementation	1-Mar-21	3-Mar-21	✔					
	4	Leaderboard Implementation	28-Feb-21	6-Mar-21	✘	Gaming System				
	5	Implement Points Logic	2-Mar-21	5-Mar-21	✔					
	6	Stage 3 Report	21-Feb-21	27-Feb-21	✘	Documentation				
	7	Implement Firebase Security Rules	28-Feb-21	6-Mar-21	✔	Backend				
5	1	Leaderboard Implementation	7-Mar-21	11-Mar-21	✔	Gaming System	# continued pending leaderboards # continued firebase rules # seasons logic added # leagues & badges based on profile points added # Due to previous leader still recoving. new acting leader/project manager = BABER JAN.	7-Mar-21	13-Mar-21	★★
	2	Implement rewards	8-Mar-21	13-Mar-21	✔					
	3	Stage 3 Report	7-Mar-21	13-Mar-21	✘	Documentation				
6	1	Testing + Fixing	14-Mar-21	17-Mar-21	✔	Testing	# did app testing & fixing # continued leaderboards # continued firebase rules # completed pending season logic # continued challenges # announcing the fastest growing channel of the month FR added # fixed CSS # continued ranking system # added location to a challenge # made a report about what is accomplished and what is left # checked that implementation is in sync with frs and use cases # tags in a photos added # google maps billing issue fixed # MUHAMMAD ASSAD KHAN still recovering. So report handed over to = GAYATHRI GIRISH NAIR # An ubuntu server was leased for the team by our line manager, Dr. HANI RAGAB.	14-Mar-21	20-Mar-21	★★
	2	Implement Firebase Security Rules	17-Mar-21	20-Mar-21	✔	Backend				
	3	Leaderboard Implementation	14-Mar-21	16-Mar-21	✔	Gaming System				
	4	Implement rewards	17-Mar-21	20-Mar-21	✘					
	5	Implement Points Logic	17-Mar-21	20-Mar-21	✔					
	6	Implement Tagging in photos	14-Mar-21	20-Mar-21	✔	User Interaction System				
	7	Stage 3 Report	14-Mar-21	20-Mar-21	✘	Documentation				
7	1	Stage 3 Report	21-Mar-21	25-Mar-21	✔	Documentation	# implemented user reports # implementeded map clustering and showing post on map # fixed css # delete account implemented # completed pending seasons logic # work on report continued # project evaluation began # implemented server side logic # updating leaderboards daily functionality implemented	21-Mar-21	25-Mar-21	★★★
	2	Implement rewards	21-Mar-21	24-Mar-21	✔					
	3	Implement server side logic	21-Mar-21	24-Mar-21	✔	Gaming System				
	4	Complete pending work from previous stprints	21-Mar-21	25-Mar-21	✔	Gaming, User Interaction, Application Improvement Systems				
8	1	Preparation for demonstration	26-Mar-21	27-Mar-21	✔		** NOW **	26-Mar-21	27-Mar-21	★★★
N/A	N/A	Demonstration	28-Mar-21	28-Mar-21	✔	N/A		28-Mar-21	28-Mar-21	★★★
9	1	Final Report Touches					** FUTURE **	29-Mar-21	31-Mar-21	
N/A	N/A	Stage 3 Submission	1-Apr-21	1-Apr-21	✔	N/A	N/A	1-Apr-21	1-Apr-21	★★★

Project Diary Stage 3

The implementation schedule has remained close to initial plans for stages 1 and 2 with a little deviation from the original plan. The implemented schedule for stage 3, however was quite different from the initial plan due to the need for an increased understanding of ReactJS contributing to some time lost in learning and failed attempts at achieving functionality particularly during the 1st 2 sprints of stage 3. Unforeseen health issues faced by team members particularly our leader proved to be a setback especially with regards to work on the stage 3 report and accompanying documentation. Hence, greater collaboration and effort was required toward the end of stage 3 which was key in overcoming ordeals and submitting a finished product and necessary documentation.

UPDATE STAGE 3 AS WE PROGRESS & EDIT IF NEEDED...

4.2.2. Path to Success (Gayathri)

provide examples

Was your implementation approach successful (scrum, other, etc)? Why or why not? Use specific examples from your experiences to support your discussion.

Pros

- Initially the team was very lost and awestruck at the massive task that lay ahead. This is when the decision to sit down and **identify systems** that would make up our application proved helpful. Initially 11 systems where identified which was then narrowed down to 6 ...

  1. User Account System
  2. Content Creation System
  3. User Interaction System
  4. Game Mechanics System
  5. Notification System
  6. Application Improvement System

  This breakdown of the application allowed the team to develop a wholesome view of what the application would look like and what it would be capable of. We then went on to tackle one system at a time, always beginning by identifying main tasks and implementing them.
- The **flexibility** that **scrum** provides allowed us to implement parts of the app that felt manageable at a given moment knowing that once the team had amassed further knowledge regarding a topic, those very basic versions first implemented in a previous scrum may be revisited, tweaked and refined in a later scrum.
- Having a **scrum master** that regularly discussed with the group and allocated tasks on a weekly basis, at times, even daily basis allowed for the team to always have **an idea about the next most important task.** At instances where the team was faced with an especially challenging system like the user interaction system with multiple components like creation/deletion of posts, collections etc, the scrum master's breakdown of large tasks into small tasks allocated frequently led to the team being able to divide and conquer it.
- **Daily scrums** were a constant reminder of just how much had been and were yet to be achieved every week. Any sprint tasks not achieved this week would be reallocated next week in addition to other tasks. This succeeded at keeping the team on toes and though at variable rates, **weekly sprints ensured that weekly progress was made**.
- Every sprint would culminate in all members reviewing and testing out functions implemented thus far before suggesting fixes/improvements that would be implemented in the next sprint if deemed necessary. These **implement > test > fix > implement next** iterations ensured that the team **produced working parts** of the application almost **every week** and it would be **unlikely** that these parts **would need to be changed later** on. This approach also meant that we would have a new working feature to show our line manager at nearly every meeting.
- Opting **React JS** enabled the team to create **components** that could be **reused** and take advantage of **vast libraries and frameworks** that React supports like Material UI, React Bootstrap etc. Due to React being a popular choice amongst application developers, **finding** online **tutorials** and **reading material** on it **was not difficult**.

Cons

- Opting **ReactJS** meant that most of the team had to take the **time to learn** its key features. This resulted in some time in our development journey (Scrums 1 & 2 of stage 3) getting dedicated to learning it. Also, lack of sufficient knowledge of how to achieve a particular task had resulted in slower progress than ideal at several points in Stages 2 and 3 corresponding to implementing complex systems like the user interaction system, game mechanics system and chat feature.
- The constant pressure to produce **daily scrum reports** was **at times overwhelming**.
- The team was always very active and driven to produce a great product. Every member had **lots of ideas/opinions** to make the application better. Whilst this meant no shortage of options, it also meant that it took **longer to reach a consensus** and would also lead to **disagreements** that had to be resolved from time to time. This scenario was especially prevalent during the **initial stages** of development when the team was just coming together. **By Stage 3**, however, the team was **united** and had understood strengths and the value of each member.

  For example...

  - A debate as to whether to implement adding posts to challenges by allowing addition of previous posts to a challenge via tags as opposed to allowing new posts dedicated to a challenge to be created by a user that arose in stage 3, culminated in a well thought out blend of both ideas where old posts could be added to challenges via a copy of that post participating in the challenge whilst at the same time enabling users to create new posts exclusive to a challenge.
  - A more trivial debate that occurred initially during stage 1 regarding how to represent requirements in the report (table/bullet points) lead to the team spending time discussing about a small detail. Few more similar less significant idea clashes occurred during stage 1.
  - This scenario shows how a debate that occurred in stage 3 led to constructive improvement of functionality compared to petty disagreements from stage 1 showing the evolution of the team from a ragtag ensemble of passionate students to a real team that's goal oriented and focused on the betterment of the product.
- Parts of the specification given were ambiguous and sometimes vague like when it was mentioned in that the system would enable users to provide feedback and leave comments, it is confusing because comments are feedback and no further explanation of what feedback ideally looks like here was mentioned. The team understood that such inexplicit areas of the report to be intentional opportunities to allow development teams to come up with unique spins on the application and chose to do just this.

Overall, it is safe to say that our approach was successful in helping keep the team close knit and productive. When problems arose, the team was able to rise to the challenge and brave though it. The milestones we set for ourselves and achieved via sprints, gave us a sense of accomplishment and was a source of motivation in our development journey.

NEED SPECIFIC EXAMPES & MORE POINTS ARE WELCOME ...

4.2.3. Tools Used (Hasan)

Which languages, tools, and techniques did you use? How suitable were they?

MORE ...

4.3. Product (Tasneem)

4.3.1. Functionality Achieved

Report achieved functionality. Provide outline summary on functions and then give details. How many of your requirements did you meet? (Example = A table showing to what extent each of the numbered functional requirements have been completed.)

MORE ...

4.3.2. What's Special?

What is particularly special about your product? Have you included extra features? How robust is your final system?

MORE ...

4.3.3. Bugs/Constraints

Are there known bugs or constraints?

MORE ...

4.3.4. Usability Results

How usable did your subjects find the final system? Include a brief summary of results.

MORE ...

Appendix (Yoshi)

Appendix of Supporting Documentation. Any other supporting documentation that might be relevant (Examples = project diaries/report, original implementation plan, marketing material, etc).

MORE ...