

Advanced Software Engineering - Project Proposal

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By:

Team 1

Bookstagram Project Proposal

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1. Project Description

1.1 Document Objective

The purpose of this document is to give a detailed description of the requirements for the discovery and analysis of A social media platform for the readers and authors to buy, sell and share books with friends. It will illustrate the purpose of the system. It will cover a detailed description of the platform purpose, business logic, user personas, features list, and the quality assurance plan.

1.2 Project Purpose

Talking about history ,in the 20th century there was a huge revolution of the printing press and media. Today, in the 21st century, we are experiencing another such massive revolution in the form of digital technology. The Internet has taken its place all over the world. Digital Media is gaining popularity in the form of laptops, smartphones , tablets and e-readers.Because of their huge involvement in our daily lives,they are once more reshaping our reading and learning habits entirely.

Additionally, this leads to growing needs for online book reading and sharing social platforms which could be accessible from everywhere, with the help of the Internet. At any moment in a day, people could find any type of book they wish to read . These types of platforms neglect the drawbacks of going to book libraries and shops physically where you get limited options of books to choose from and timing constraints.

Furthermore , after the COVID pandemic, generally people prefer to read books on private devices rather than going to public libraries to issue books. Thus leading to immense demands for these platforms to read and share virtually.

1.3 Project Goal Overview

Bookstagram is not just an online books social web platform, but much more than that. It consists of a global community of book lovers, who are enthusiastic to read or write. We cover multiple genres so that there is something for everyone. We make it quick and easy to find those great reads. Along with the dealing of normal Ebooks, our web platform also deals with the trading of audio and video content type of books.

Our platform is like an innovative and supportive service for authors who want to showcase their inner talent by publishing their own books. And because of our growing community, authors could look to expand their audiences by gaining popularity.

As a bookworm, we might know your addiction for books which could end up costing you very expensive. Thus, on our platform you get to choose from a vast variety of books which suits your interest. Most importantly all the resources are available at a discounted price, as compared to the other platforms. Users can also write detailed reviews and market their favourite products to earn commissions for increased sale.

2. A Brief Market and Cost Analysis:

2.1 Market Analysis

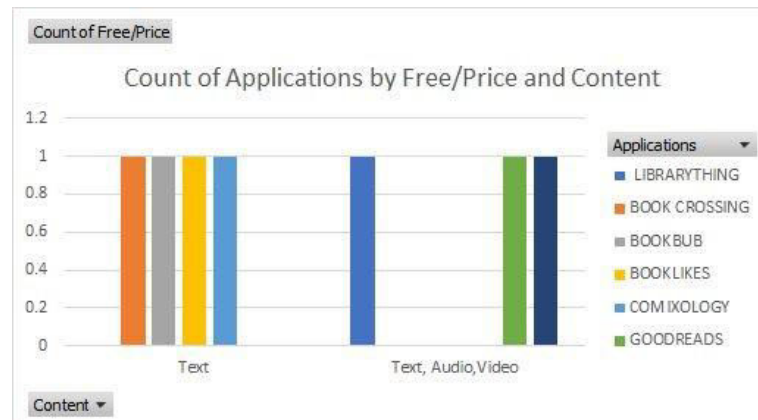
The below are the list of web applications available in the market differentiating based on customer base, type of content and free to download.

We have also mentioned what each application's unique selling point is in the market.

Applications	Mobile App/Web App	USP	Customer Base	Content	Free/Price
GOODREADS	Web app	networking with friends, book challenges, book cataloguing, giveaways.	75,00,000	Text, Audio, Video	Free
LIBRARYTHING	Web app	Catalogue books from Amazon and other libraries.	23,00,000	Text, Audio, Video	Chargeable
BOOK CROSSING	Web App	Label and share to stranger	20,00,000	Text	Free

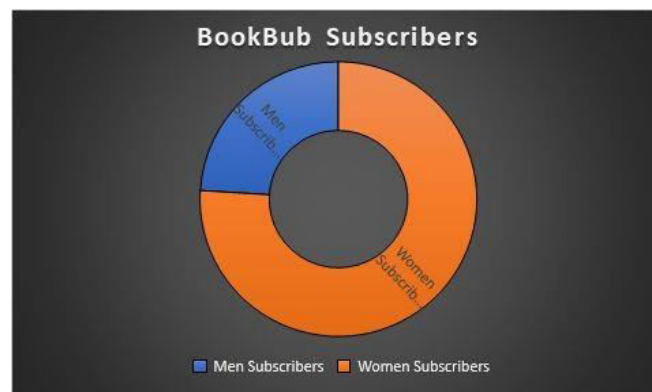
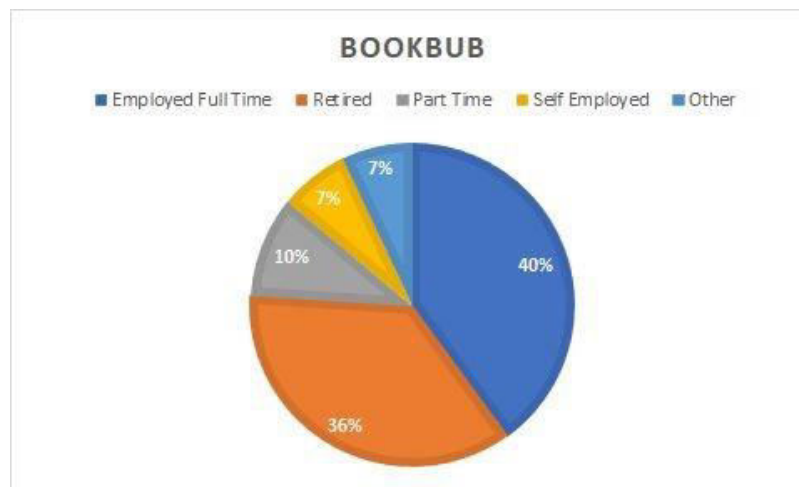
BOOKBUB	Web app/ Mobile	ebay with respect to books.eBook Deals, find books from Amazon and other libraries	285000	Text	Chargeable
COMIXOLOGY	Web app	Subscription with money for comics	12400	Text	Chargeable
LIBIB	Web App	Build your personal library	3500	Text, Audio, Video	Chargeable
BOOKLIKES	Web App	blog platform designed for Book Lovers.	3500	Text	Free

The below chart describes the trend followed by the applications we compared based on subscribers. We see that GoodReads has the maximum subscribers among other book sharing applications with around 2X growth of subscribers.



2.2 Target Users

Charts below represent analysis made on a specific application named BookBub. The analysis data was fetched from a survey taken in the year 2017 by BRIANNA Duff. The below charts emphasize subscriber differences based on gender and variety of working classes.



2.3 Cost Analysis

Resources:

We are five in number as a team allocating approximate of 85000 dollar per year for front end developers and 75000 for backend developer, We are taking the role of scrum lifecycle development and DevOps.

Licenses:

We need an AWS, JIRA license for deployment and monitoring purposes.

Servers:

Servers are likely to be hosted in EC2 with approximately t2.micro instance, load balanced with filovers.

Salary:

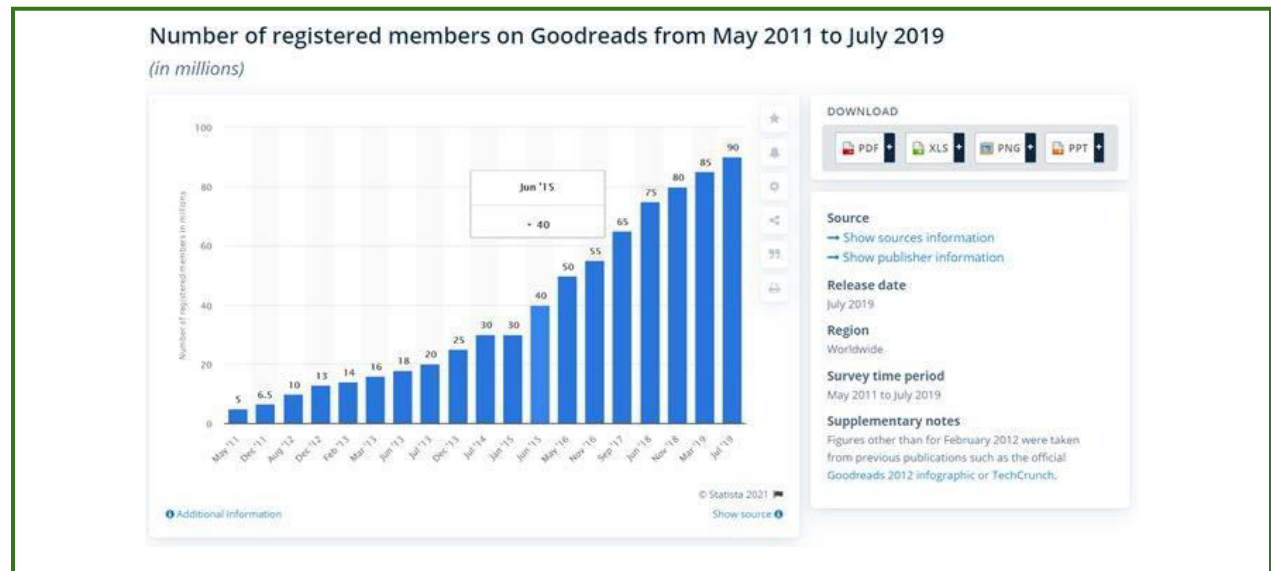
- Front End Developer: 70000 CAD/year
- BackEnd Developer :70000 CAD/year
- DevOps : 45000 CAD /year
- Scrum Master : 65000 CAD/year

2.4 Unique Selling Point

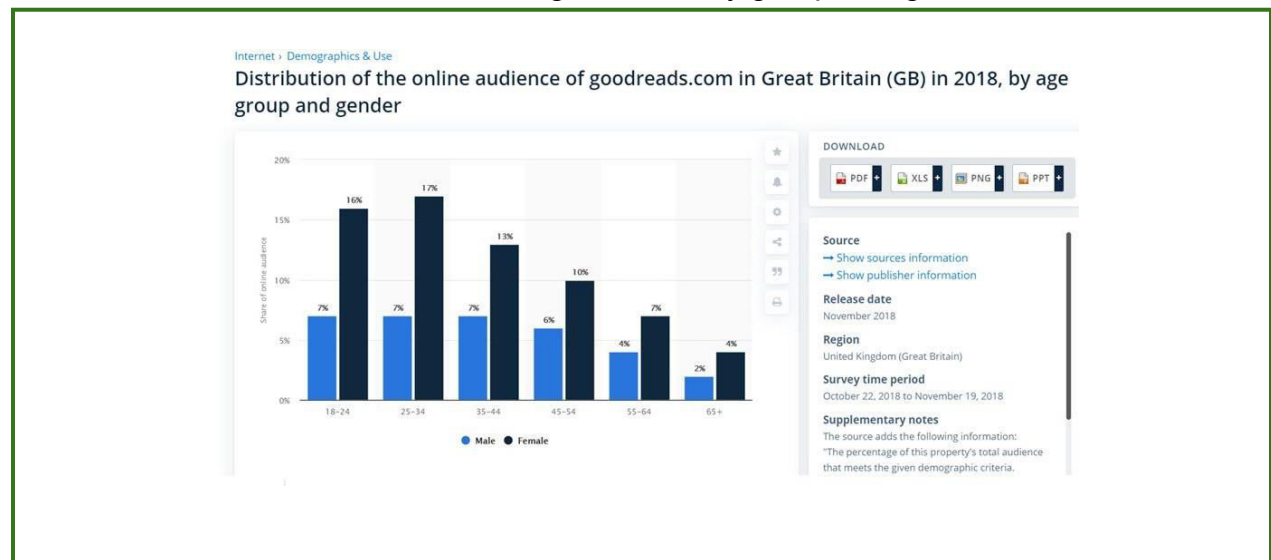
Author Feature and Monetary Commission when buying books from buddies are the unique features in our project. Features are adaptable with innovative resources working on the product.

2.5Trend Analysis

Below is the trend analysis of GoodReads subscribers from May 2011 to July 2019 from statistics shown in the internet



The below are the online audience of goodreads by group and gender.



3. Requirement Analysis

3.1 Platform Features List

ID	Features	Description
Website (Reader)		
1	Sign up	Readers would be able to register on Bookstagram using a valid Email Address and password. Fields <ul style="list-style-type: none">• Name• Phone number• Email address• Password• Confirm Password
2	Email Verification	Email address will be verified by a verification link sent over the provided email address
3	Login	Once registered provider can access Bookstagram platform with valid credentials and redirect to Dashboard
4	Forgot Password	User would enter his/her Email Address and if registered ,A link for the reset password to be sent on the registered Email Address
5	Search Books	User first needs to select what type of content(textual,audio or video) he needs to search . On the basis of that ,he would be given a vast variety of categories to choose from

6	Read Books	User can read a book within the platform
7	Like and Comment	User can like and comment on the book after buying the book
8	Buy Books	User needs to buy the inorder to read, like, comment and share in his profile
9	Share Books	User can share his book as a profile post after buying the book
10	Add Tags	To add tags to a specific book for easier search
11	Edit Tags	To edit the Tags of the selected book. • Can be updated anytime when you click on the book on your profile
12	Delete Tags	To Remove Tags that are not appropriate for that specific book for your personal use
13	Favourites	Marking books as favourites for easy navigation.
14	Referral	User can share his referral code with their friends, and get referral bonus once a new user registered with that referral code
15	Wallet	every user will have a registration bonus of CA\$ 500. User can also get bonus amount through referrals
16	Commission	if User A buys a book by clicking the book link from User B's profile post, then User B will get 5% from the book's sold amount as referral amount
17	Dashboard/home	Every User will have a Home page or Dashboard, User will have a notification bar, recent history bar in this page. User can use this page to redirect to another pages
18	Cart	User can buy book from cart one by one or many together
19	WishList	Every User can add their books to wishlist so they can buy those later
20	Profile	Every User will has his own profile where user can post his books and visible for other users based on the relations(biddies) and privacy settings
21	Profile Post	Every User will has his own profile where user can post his books and visible for other users based on the relations(biddies) and privacy settings

22	Privacy Settings	Every User will have privacy setting option in their profile where they change the privacy settings
23	Notification	Every user will have a notification bar once they registered or logged in. This will notify all alerts related to him
24	Recent History	Every User will have a recent history bar where the user can see the list of books he read before.
Website (Author)		
1	Sign up	<p>Readers would be able to register on Bookstagram using valid Email Address and password.</p> <p>Fields</p> <ul style="list-style-type: none"> • Name • Phone number • Email address • Password • Confirm Password
2	Email Verification	Email address will be verified by a verification link sent over the provided email address
3	Mobile Number Verification	Verification of mobile numbers would take place by OTP verification. Users will need to enter the OTP sent on the provided mobile number via SMS to verify mobile number.
4	Login	Once registered provider can access Bookstagram platform with valid credentials and redirect to Dashboard
5	Forgot Password	User would enter his/her Email Address and if registered ,A link for the reset password to be sent on the registered Email Address
6	Search Books	Users first need to select in what type of contents(textual,audio or video) he needs to search . On the basis of that ,he would be given a vast variety of categories to choose from
7	Read Books	User can read a book within the platform
8	Like and Comment	User can like and comment on the book after buying the

		book
9	Buy Books	User needs to buy the inorder to read, like, comment and share in his profile
10	Share Books	User can share his book as a profile post after buying the book
11	Add Tags	To add tags to a specific book for easier search
12	Edit Tags	To edit the Tags of the selected book. • Can be updated anytime when you click on the book on your profile
13	Delete Tags	To Remove Tags that are not appropriate for that specific book for your personal use
14	Favourites	
15	Referral	User can share his referral code with their friends, and get referral bonus once a new user registered with that referral code
16	Wallet	every user will have a registration bonus of CA\$ 500. User can also get bonus amount through referrals
17	Commission	if User A buys a book by clicking the book link from User B's profile post, then User B will get 5% from the book's sold amount as referral amount
18	Dashboard/home	Every User will have a Home page or Dashboard, User will have a notification bar, recent history bar in this page. User can use this page to redirect to another pages
19	Cart	User can buy book from cart one by one or many together
20	WishList	Every User can add their books to wishlist so they can buy those later
21	Profile	Every User will has his own profile where user can post his books and visible for other users based on the relations(biddies) and privacy settings
22	Profile Post	Every User will has his own profile where user can post his books and visible for other users based on the relations(biddies) and privacy settings
23	Privacy Settings	Every User will have privacy setting option in their profile where they change the privacy settings

24	Notification	Every user will have a notification bar once they registered or logged in. This will notify all alerts related to him
25	Recent History	Every User will have a recent history bar where the user can see the list of books he read before.
26	Publish	Every User who is registered as an author can publish his content as a book. His book will be published after appropriation check is done

3.2 User-Role Specific Functions

3.2.1 Common Functionalities:

- i) Users could register and login as a reader or an author.
- ii) All the users are able to see the top-rated list of the books as well as the authors maintained on the weekly and monthly basis.
- iii) Users could send/receive friend requests from others in order to create social contact.
- vi) Every user on the platform could manage their own account privacy.
- v) Notification could be received to everyone through the email

3.2.2 Reader Functionalities:

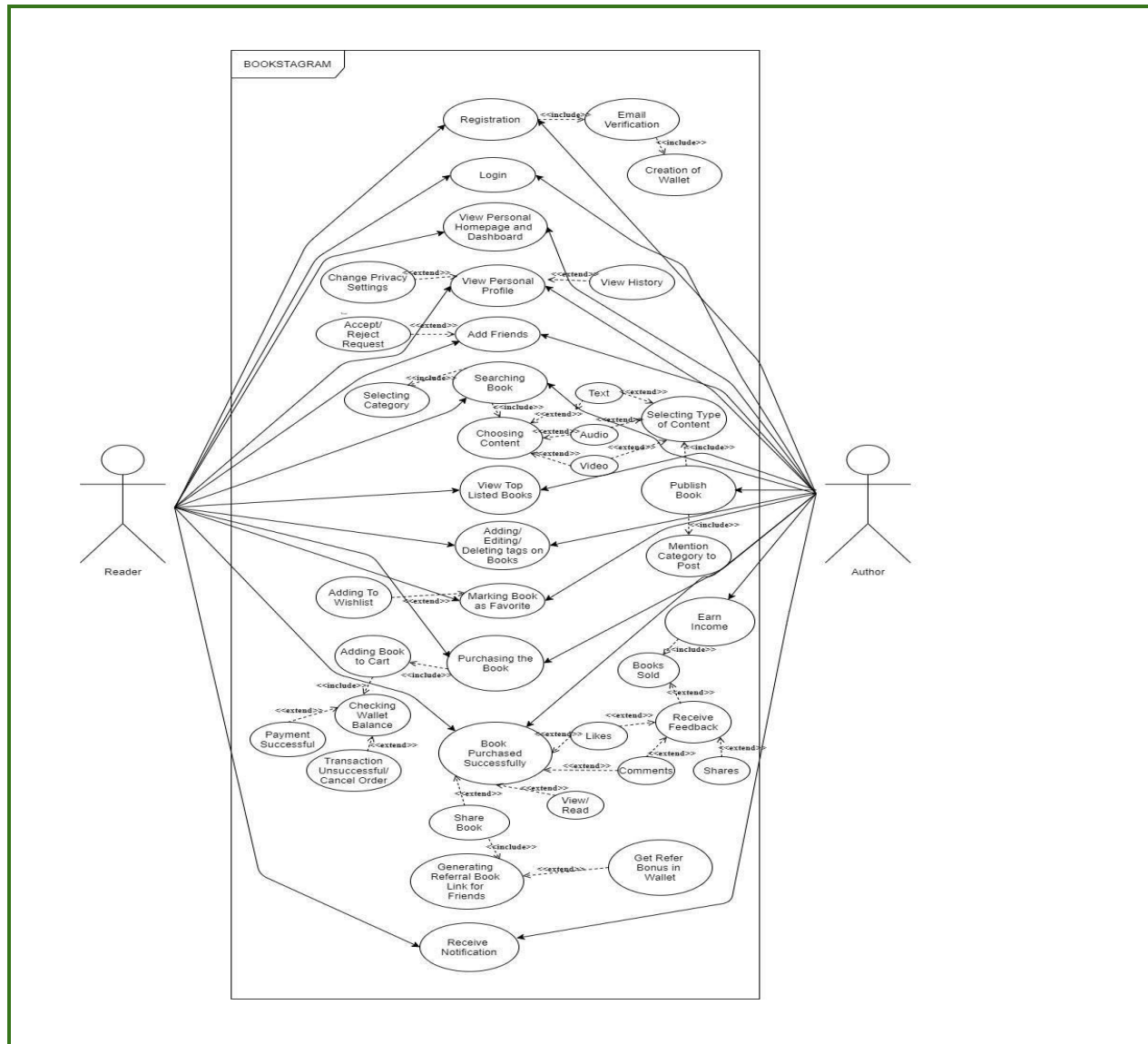
- i) Readers could select their favorite categories of book according to their interest. Not only from the textual library but also from the audio and video section.
- ii) A book must be bought by the user in order to read its contents and story.
- iii) Readers could view, like and give feedback to the authors in the form of comments on the books which they are reading and found fascinating.
- iv) After buying the book only, they could share the books on their profile, so that their friends could also have a glance at the intriguing publication and decide whether to buy it or not.

- v) Readers could earn money on the basis of referrals. Referrals are earned only when the friends of the user bought a book from the reader shared book link.
- vi) Readers would be able to see the total number of views, likes, comments and shares of the books which they have searched.

3.2.3 Author Functionalities:

- i) Before posting the book, authors would be required to determine the category in which they want to post their publication.
- ii) Authors could get likes and appreciation or critical remarks from the comment section on the books which they have published. While appreciation could be considered as a reward but critics' view could also help the authors to focus on areas which they need to improve.
- iii) Authors would be able to generate their income on the basis of no. of copies of their books sold on the platform.
- iv) Authors would be able to see the total number of views, likes, comments ,shares and no. of sold copies of their books which they have published.
- v) Either they themselves or their book could get a chance to be listed in top rated list of the week or the month, on the basis of popularity gained among the platform users.

3.3 Use Case Diagram



Click [here](#) to view a clearer diagram.

3.4 Provisional Planning

Click [here](#) to view the GANTT chart and the global planned objective for each iteration.

3.5 Technical Constraints

The below technical constraints are flexible for every phase of software development lifecycle.

Web Browsers: Google chrome, Mozilla Firefox, Internet Explorer, Safari, Opera

Languages: Python, React.js, HTML, CSS

Frameworks: Django

Database: MongoDB

Additional Tools: JIRA, GITHUB

Simulation Tools: Jenkins

Deployment Cloud : Amazon Cloud Services (AWS)

Time Scales: We will have to complete the product with a deadline on April 5, 2021.

4. Quality Assurance Plan

4.1 Development Lifecycle: SCRUM

We will be using **Scrum** Methodology for our Project Development. We can focus on Iterative Development, where requirements and solutions develop through

coordination between different teams working on Project. The development lifecycle we follow is versatile enough throughout the development.

4.1.1 Role of Team Members

- Scrum Master: Siddarth Mohanachandra Palliwal
- Scrum Team: Abishek Rajagopal, Dishant Shah, Sayee Shruthi
- Product Owner: Neet Patel

4.1.2 Scrum

Scrum meeting will be conducted every 48 hours for 30 minutes where following points would be discussed:

- What have I done since the last scrum meeting ?
- What should I plan to do before the next meeting?
- Help needed for resolving issues assigned to me.
- How close are we to hit the Sprint Goals?

4.1.3 Sprint

- Sprint Duration: 14 days (2 Weeks)
- Sprint Activities: Sprint Goal, Sprint Planning, Product Backlog, Scrums, Sprint Review and Sprint Retrospective
- Conduct a Sprint Goal & Planning Meeting of 2 hours Timebox.
- Conduct Sprint Review and Sprint Retrospective at the end of Sprint.

4.1.4 MileStone

Please refer to the gantt chart attached to the folder for timeline analysis and progress in development.

- MileStone 1: Feb 10,2021
- MileStone 2: Feb 26,2021
- MileStone 3: March 17,2021

- Milestone 4: March 31,2021
- Release Deadline: April 7,2021

4.1.5 Communication Procedures

- Communication Platforms: Microsoft Teams, Zoom, Blackboard Discussion Board
- Technical ticket Communication: JIRA
- Technical Delivery Communication: GitHub
- Customer Communication: By prior appointment with customer

4.1.6 Risks

- As we have never used SCRUM, we may have to change the duration of scrum meetings to mitigate the risk.
- Based on the project size and the feature list, it is sometimes difficult to estimate the timeline.
- There may be requirement inflation after the project starts and features are added at a later time.
- We may face conflicting requirements when we start with the integration development of different features.

4.1.7 Role of Teammates

Role of our teammates is adaptable during the development lifecycle for learning purposes.

- *Sayee Shruthi*: Fronted Development, DevOps, HTML/CSS
- *Siddharth Paliwal*: Fronted Development, ReactJS
- *Dishant Shah*: Fronted Development, ReactJS, DevOps
- *Abishek Rajagopal*: Backend Development, Python, Testing
- *Neel Patel*: Backend Development, Python

4.1.8 Validation and Verification Procedure

- **Verification:** To make sure that we are building the right product, it is bug free and has all the features as discussed with the client. It is necessary to evaluate if the development phase is being carried out correctly.
 - The cross verification of the pre-defined specifications in software requirement documents is parallel and adheres with the already developed software periodically. We will be using **static verification** which ensures checking of the code before the execution.
 - There are various approaches for verification and we will be using the following in our project
 - **Reviews:** periodical reviews of the code and documents. A group member can assign to any other member in the group for review and verification.
 - **Inspection:** one of the group members will be assigned as a moderator and will check the progress in a formal manner with the help of tools like JIRA and GitHub. Moderator will check if the members have flipped the tickets and committed the codes.
 - **Walkthroughs:** Every member will be encouraged to provide walkthrough of the tasks at all the scheduled meetings

- **Validation:** Software validation checks the business requirement and goal of the product and evaluates if the product that we are building is the right product with the focus on the unique selling point.
 - It is always done after the verification process is complete.
 - Validation is the most important step before the product is released.
 - Different approach for validation will be:
 - Unit testing
 - Integration testing
 - System testing
 - User acceptance testing

4.1.9 Tech Stack

- **UI/UX:** HTML, CSS
- **Frontend:** ReactJS
- **Backend:** Python
- **Database:** MongoDB
- **Deployment:**
 - AWS S3 for frontend build
 - Azure for backend deployment

Updated QAP:

We followed SCRUM methodology while development of the project which helped us in building a quality project. We followed everyday SCRUM Meetings and the points from meetings were noted and added in Management Documents. We also performed Retrospective meeting at the end of sprint and noted down points for the same. Following this scrum ideas, we were able to develop a good quality product which had features suggested by customer like tree and ticker. Along with these, we took care of customer suggestions related to security measure to prevent injections or DDOS attacks.

Risk Management Metrics:

Sr No.	Risk Overview	Likelihood	Impact	What to do
1	Cannot deploy due to lack of credits on cloud	High	Low	Ask for resources from the customer
2	Cannot finish tasks in one scrum	High	Med	Include in next sprint
3	Implementation of tasks figured out from meeting with customer in middle of sprint	Low	High	Add the task to next sprint
4	Project Purpose and need not well defined	Med	High	Understand Business case properly or have meeting with customer if needed
5	Lack of Communication, causing lack of clarity and confusion	High	High	Ask for resources from the customer

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6	Failing of integration of modules	Low	High	Try to work on it and finish it as soon as possible
7	Wrong estimation of time taken for coding a module	High	Low	Try to work on it and finish it as soon as possible
8	For developed module, Quality is not up to the work	Med	Med	Work on other effective measures to improve quality by having meetings and communicating
9	Security issues in the module developed	Med	Low	Figure out all the security measures possible and solve them as soon as possible
10	Response time of module is not good	Med	Med	Try to improve or integrate properly and increase response time for the module