**Bill Sharing App**

Split And Track The Easy Way

**Abstract:**

The main aim of the team is to develop an Android application to split the bill, track bills and other shared expenses spent among the friends of group of people and make sure everyone is paid back the correct amount. Using this application we can create groups add friends to the grouped created. We can add and edit the expense in the group created to share the expense between the people, will let you know how much you owe and how much u get. Push notifications will be triggered once an expense is added to let us know the updates. We can add the bill image to the expense added to show the expense.

**Tools Used to build the application**:

* **Build tool :** Gradle
* **Continuous Integration:** Jenkins
* **Quality Assessment Tool:** SonarQube
* **Testing tools:** Jasmine,JsTestDriver,Selenium
* **Logging:** Log4javascript
* **Team co-ordination:** Asana

## Different phases of project:

### **Sprint 1:**

* **Scrum Masters:** [Chad M. West](https://gitlab.com/u/cmwest)
* **Goals:**

1. Capturing User stories from end user perspective
2. Aiming to develop a sample application
3. Selecting the best technologies to implement in our project.
4. Setting up the project on GitLab.
5. Creating and testing a sample database schema.

* **Pair programming teams:**

|  |  |  |
| --- | --- | --- |
| Chad, Jayasree | Ayush, Anusha | Manoj, Eashwer |
| Data bases schema | Android Basic UI | UML and User Stories |

* **Achievements:** Our team came up with designing a basic UI ,creating a database schema and capturing the user stories from end user perspective.
* **Challenges and Backlogs:**

1. Unable to assign jobs as we didn’t know the team members’ expertise (Who is good at what).
2. Communication gap, as few members were new to working with the others.
3. Confusion about which tools to be used.

* **Things learnt:** How to use the resources in a proper way by understanding each person's expertise and assigning tasks accordingly.

### **Sprint 2:**

* **Scrum Master:** Anusha Kondam
* **Goals:**
  1. Implementing Login and registration functionalities for the app.
  2. To work on establishing server side connectivity.
  3. Jenkins integration.
  4. Home screen design.
* **Pair programming teams**

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| --- | --- | --- |
| Eshwar, Manoj | Chad and Aayush | Anusha, Jayasree |
| Registration Screen | Test cases, Login and Registration | Registration screen server-side coding, Jenkins integration. |

* **Achievements:** Implemented login and registration functionalities, successfully implemented continuous integration and established the server side connection.
* **Challenges & Backlogs:** Incomplete implementation of home screen design and faced a challenge in release planning.
* **Things learnt:** How to work closely with the team.

### **Sprint 3:**

* **Scrum Masters:** Aayush Nagpal
* **Goals:**

1) To work on sprint 2 backlog (Home screen design)

2) Perform Unit Testing and to implement quality assessment tool.

3) Creating groups for splitbill.

* **Pair programming teams**

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| --- | --- | --- |
| Eshwar, Manoj | Chad and Ayush | Anusha, Jayasree |
| Home Screen design and created group saving. | Creating group functionality and unit tests | Server side programming for Group creation, Schema testing |

* **Achievements:** Successfully completed home screen design and creating group functionalities.
* **Challenges & Backlogs:**

1. Coordination was little rough but we managed to successfully pull it together without compromising the pace of develop.
2. Couldn’t use quality assessment tool.

* **Things learnt:** Team is getting along with android development, learning Hibernate, and Server side programming.

### **Sprint 4:**

* **Scrum Masters:** ShivaManoj Reddy Gangula
* **Goals:**

1. To implement push notifications.
2. To implement business logic for splitting bills
3. Adding friends to the group.
4. To display groups on the apps timeline.
5. To Develop the logout functionality
6. Perform the unit testing server side

* **Pair programming teams**

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| --- | --- | --- | --- | --- |
| Manoj | Aayush and Eswar | Chad | Anusha | Jayasree |
| Fixing the database issue, adding validation and logout functionality. | Adding friends to the group | Debugging and worked on the build failure issues. Unit testing for server side. | Displaying friends on apps timeline and Changes to group creation. | Server side programming for adding friends |

* **Achievements:** Successfully implemented Logout functionality and adding friends to the group and displaying them on apps timeline.
* **Challenges & Backlogs:** We need to implement the actual bill splitting functionality and push notifications.
* **Things learnt:** We need to speed up the things to complete the project on time and make sure that everything works fine.

### **Sprint 5:**

* **Scrum Master:** Jayasree
* **Goals:**

1. To implement the Sprint 4 backlogs.
2. To implement push notifications
3. To implement business logic for the application.
4. To upload a bill image in the group.
5. To implement budget notifications.
6. Quality assessment tool and Testing tools.

* **Pair programming teams**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Manoj | Aayush and Eswar | Chad | Anusha | Jayasree |
| Budget notification functionality | Push notifications | Quality assessment tools and testing tools | Business logic of splitting bills | Uploading images of bills |

* **Achievements:** Successfully implemented all the tasks of Sprint 5
* **Challenges & Backlogs:** Further enhancing the features of application developed.
* **Overall Learning:**
* Scrum meetings: The team had made it a point to meet at least twice a week for about 10-15 minutes, to work closely on to project.
* User stories are captured from an end-user perspective from the initial team discussion and the requirements are prioritized based on the team discussions.
* Project documentation is maintained for project and the dashboard tracker is used to hand over the work and project update to next scrum master. The tasks performed and the roles of team members, achievements, things learnt and backlogs are maintained and mentioned in the tracker.
* XP programming practice like Pair Programming is implemented where people worked together towards a common goal.
* Test driven development was implemented to ensure the quality of the code
* Continuous Integration was performed, to detect problems early so that updates can be shipped easily.
* Refactoring code was performed to simplify the design in the code without changing its behavior.
* Handling Product Backlogs: listing of things that are needed to be done within a particular sprint which are carried forward.
* Release plan: Which focuses on the velocity at which the project was going and by observing how much work had been done per iteration.