Report Title : Sprint 2 Process for The Smart Living Community Project

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Submitted by

SHANJIDA ALAM(ID: 353)

Submitted to

Dr. Md. MUSHFIQUE ANWAR, Professor

Dr. Md. HUMAYUN KABIR, Professor

Computer Science and Engineering

Jahangirnagar University

Dhaka, Bangladesh

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Contents

Chapter 1

Introduction

This report represents the implementation of **Sprint 2**, focusing on process improvements identified during Sprint 1's retrospective, the integration of Test-Driven Development (TDD), and continuous integration testing. Key goal is placed on improvements to our Agile methodology based on previous sprint learning.

Sprint 2 expands on the feedback and lessons learned from the previous Sprint's review and retrospective. The primary goal is to improve both the product and the development process by implementing focused enhancements. This report details my involvement in **Sprint 2**, including updates to the **product backlog**, **Sprint planning** activities, and execution steps. It also highlights the adoption of **Test-Driven Development (TDD)** and **continuous integration testing** to ensure an efficient and high-quality development workflow.

Chapter 2

Sprint 2 Objectives

- To refine the Scrum process by implementing improvements identified during Sprint 1's retrospective.
- To update and prioritize the product backlog based on feedback and changing project requirements.
- To plan and execute a new Sprint, ensuring that all tasks are manageable within the one-week time frame.
- To practice TDD and integrate continuous integration testing into the development process.
- To incorporate unit testing as part of the development process.
- To document team activities, progress, and challenges for future reference.

Chapter 3

Sprint 2 Planning

3.1 Sprint 2 Meeting Date

Date, Duration and Location: 03-November-2024, 10:30 AM, 30 Minutes, CSE ROOM 203.

3.2 Sprint 2 Attendees

There are six attendess present in the meeting:

- Solaimi Hamid (SH)
- Shanjida Alam (SA)
- Irtifa Haider (IH)
- Hasneen Tamanna (HT)
- Md. Tanvir Hossain Saon (TH)
- Jubaer Ahmad Khan (JK)

3.3 Scrum Roles

- **Scrum Master:** Jubaer Ahmad Khan (JK)
- **Product Owners:** Shanjida Alam (SA)
- **Scrum Team Member:** Solaimi Hamid (SH), Irtifa Haider (IH), Hasneen Tamanna (HT), Md. Tanvir Hossain Saon (TH)

3.4 Sprint 2 Goal

- Gain a solid understanding of Android components and their features, focusing on navigation (between activities and fragments).
- Learn how to connect XML UI components with Java classes.
- Build a simple note-taking app following the MVVM architecture pattern integrated with Room Database.

3.5 Product Backlog

The Product Backlog is created by the Product Owner. It is a prioritized list of all the key features and functionalities that the team will work on during the product's life cycle. These features are not necessarily executed within a single sprint, but rather serve as a road map for the entire product development process.In the given below I provide the product backlog:

- Registration
- Login
- Manage Profile
- Access Dashboard
- Manage Service Request
- Create Event
- Create Bill
- Submit Complaints
- Create Parking Request
- Create Security Log
- Manage Directory
- Create Community Bulletin Board

3.6 Sprint 2 Backlog

The Scrum Master selected six features that were completed during Sprint 1. They are:

- Create Bill done by Hasneen Tamanna (HT)

- Create Parking Request done by Jubaer Ahmad Khan (JK)
- Submit Complaints done by Shanjida Alam (SA)
- Create Security Log done by Md. Tanvir Hossain Saon (TH)
- Manage Directory done by Solaimi Hamid (SH)
- Create Community Bulletin Board done by Irtifa Haider (IH)

3.7 Tools Used

- **Trello:** Task Management.
- **Discord:** Daily scrum meeting and communication with each other during Sprint 2.
- **Toggle:** Time management.

Chapter 4

Sprint 2 Execution

4.1 Daily Scrum Meeting

- **Daily Scrum Meeting 1:**

What we did yesterday?	What problems faced?	What will do today?
Explored Test Driven Development	None	Create User Interface for collecting the complaints , Create Complaints Model

Here I only mention my part of the daily scrum meeting.

- **Daily Scrum Meeting 2:**

What we did yesterday?	What problems faced?	What will do today?
Created a UI for resident complaints, Created model class for Complaints, Created a new branch in GitHub	None	Generate test cases for TDD

Here I only mention my part of the daily scrum meeting.

- **Daily Scrum Meeting 3:**

What we did yesterday?	What problems faced?	What will do today?
Generated test cases, Completed the full User Interface (UI) and Attempted Test-Driven Development (TDD).	Faced difficulties in generating test cases within the TDD approach.	Work on resolving the issues faced with test case generation using TDD.

Here I only mention my part of the daily scrum meeting.

- **Daily Scrum Meeting 4:**

What we did yesterday?	What problems faced?	What will do today?
Successfully implemented TDD for the Create Complaint feature. Modified the Complaint Form UI. Successfully saved resident complaints to the database with validation.	Encountered issues generating test cases, passing failed test cases, and synchronizing data with Firebase.	Generate documentation and open a pull request for CI testing.

Here I only mention my part of the daily scrum meeting.

4.2 My Contribution during This Sprint 2

During Sprint 2, I worked on the Submit Complaints feature. I began by creating the XML layout for the user interface. Once completed, I shared this layout in the Discord channel with my teammates to gather valuable feedback on this initial component.Here I include attachment about that,

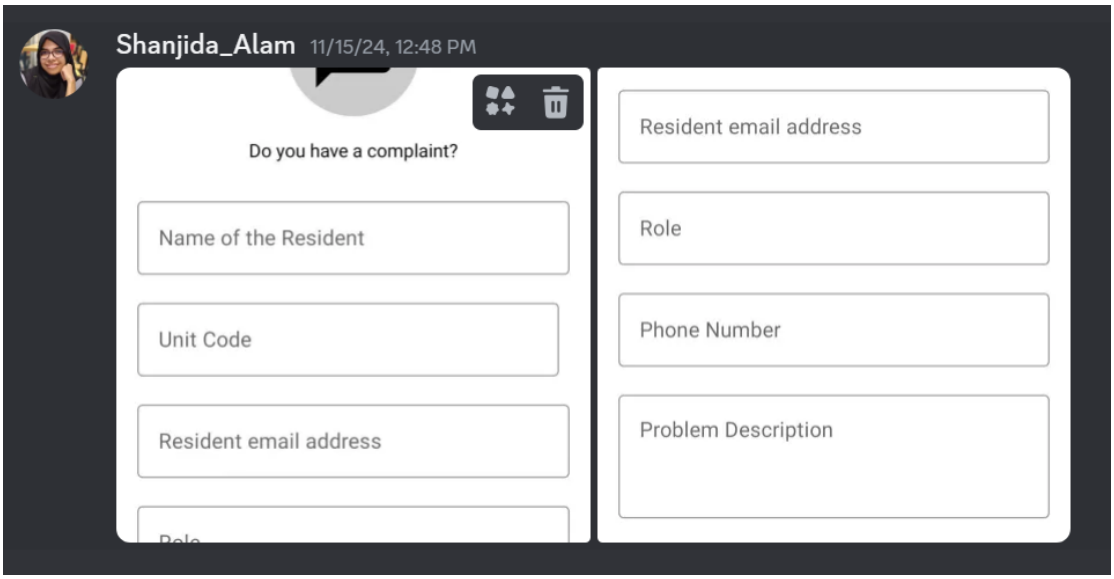

Figure 4.1: This is screenshot of my document that I shared in the Discord group with my teammates.

After finalizing the UI design, I proceeded with the backend implementation, ensuring the codebase is well-structured and maintainable. Next, I integrated the code with the Firebase Datastore to enable data retrieval and storage from the database.
I dedicated significant effort to ensure the full implementation was completed within the deadline. To give a clear picture of my progress and time management, I've attached screenshots of my Git Bash activity along with my Toggl Track time entries. These provide an overview of the work done and the time invested in the project.

4.3 Visual Aspect of Git Bash Activity for Submit Complaints

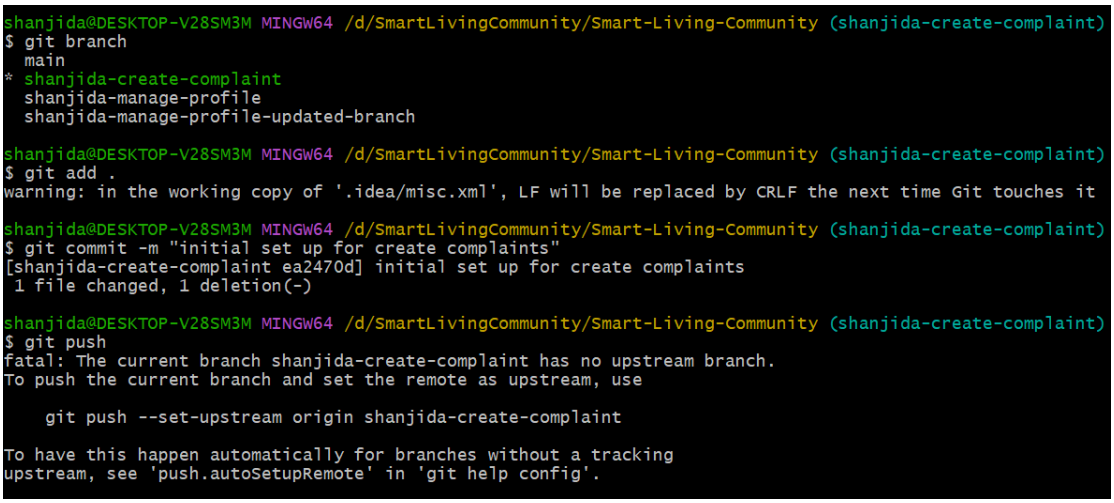

Figure 4.2: The screenshot describes the initial steps in my development workflow for the **Submit Complaint** feature. It represents the creation of a new branch named **'shanjida-create-complaint'** on GitHub. Sequentially, I set up the local development environment and pushed the initial codebase to this newly created branch.

Figure 4.3: This screenshot illustrates the successful push of the code that displays one test case passed within the TDD.

```
shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git add .

shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git commit -m "16 test cases are passed <shanjida>"
[shanjida-create-complaint 86d69a9] 16 test cases are passed <shanjida>
 6 files changed, 308 insertions(+), 151 deletions(-)
 delete mode 100644 app/src/androidTest/java/com/example/smartlivingcommunity/ComplaintTest.java
 create mode 100644 app/src/main/java/com/example/smartlivingcommunity/data/repository/ComplaintRepositoryImpl.java

shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git push
Enumerating objects: 50, done.
Counting objects: 100% (50/50), done.
Delta compression using up to 8 threads
Compressing objects: 100% (17/17), done.
Writing objects: 100% (28/28), 4.03 KiB | 825.00 KiB/s, done.
Total 28 (delta 6), reused 5 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (6/6), completed with 6 local objects.
To https://github.com/shanjida-alam/Smart-Living-Community.git
   6fbb544..86d69a9  shanjida-create-complaint -> shanjida-create-complaint
```

Figure 4.4: This screenshot captures the successful push of the test case code, showcasing the execution and successful completion of 16 test cases within the TDD.

```
shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git add .

shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git commit -m "successfully 18 test cases are passed <shanjida>"
[shanjida-create-complaint bd8c525] successfully 18 test cases are passed <shanjida>
 4 files changed, 148 insertions(+), 17 deletions(-)

shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git push
Enumerating objects: 41, done.
Counting objects: 100% (41/41), done.
Delta compression using up to 8 threads
Compressing objects: 100% (15/15), done.
Writing objects: 100% (22/22), 2.77 KiB | 944.00 KiB/s, done.
Total 22 (delta 8), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (8/8), completed with 8 local objects.
To https://github.com/shanjida-alam/Smart-Living-Community.git
   86d69a9..bd8c525  shanjida-create-complaint -> shanjida-create-complaint
```

Figure 4.5: This screenshot captures the successful push of the test case code, showcasing the execution and successful completion of 18 test cases within the TDD.

```
shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git add .
warning: in the working copy of 'app/src/main/res/layout/fragment_complaint.xml', LF will be replaced by CRLF the next time Git touches it

shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git commit -m "successfully 19 test cases are passed <shanjida>"
[shanjida-create-complaint 4b286bd] successfully 19 test cases are passed <shanjida>
 4 files changed, 99 insertions(+), 57 deletions(-)

shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git push
Enumerating objects: 43, done.
Counting objects: 100% (43/43), done.
Delta compression using up to 8 threads
Compressing objects: 100% (16/16), done.
Writing objects: 100% (23/23), 2.58 KiB | 660.00 KiB/s, done.
Total 23 (delta 11), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (11/11), completed with 11 local objects.
To https://github.com/shanjida-alam/Smart-Living-Community.git
   bd8c525..4b286bd  shanjida-create-complaint -> shanjida-create-complaint
```

Figure 4.6: This screenshot captures the successful push of the test case code, showcasing the execution and successful completion of 19 test cases within the TDD.

```
shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git add .
warning: in the working copy of 'app/src/main/res/layout/fragment_complaint.xml', LF will be replaced by CRLF the next time Git touches it

shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git commit -m "uploaded the UI of LivSmart Complaint Form <shanjida>"
[shanjida-create-complaint 2d251dc] uploaded the UI of LivSmart Complaint Form <shanjida>
 1 file changed, 43 insertions(+), 26 deletions(-)

shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git push
Enumerating objects: 15, done.
Counting objects: 100% (15/15), done.
Delta compression using up to 8 threads
Compressing objects: 100% (8/8), done.
Writing objects: 100% (8/8), 881 bytes | 440.00 KiB/s, done.
Total 8 (delta 6), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (6/6), completed with 6 local objects.
To https://github.com/shanjida-alam/Smart-Living-Community.git
   4b286bd..2d251dc  shanjida-create-complaint -> shanjida-create-complaint
```

Figure 4.7: This screenshot describes the successful push of the xml code that is the UI of

```
shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git add .
warning: in the working copy of '.idea/inspectionProfiles/Project_Default.xml', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'app/src/main/java/com/example/smartlivingcommunity/ui/view/content/ComplaintFragment.java', LF will be replaced by CRLF the next time Git
ouches it
warning: in the working copy of 'app/src/main/res/layout/fragment_complaint.xml', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'app/src/main/res/values/strings.xml', LF will be replaced by CRLF the next time Git touches it

shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git commit -m "generated documentation for my codebase <shanjida>"
[shanjida-create-complaint 07a68c3] generated documentation for my codebase <shanjida>
 13 files changed, 1023 insertions(+), 211 deletions(-)
 delete mode 100644 app/src/main/java/com/example/smartlivingcommunity/data/repository/ComplaintRepositoryImpl.java
 create mode 100644 app/src/main/java/com/example/smartlivingcommunity/data/repository/ComplaintRepositoryImplementation.java

shanjida@DESKTOP-V28SM3M MINGW64 /d/SmartLivingCommunity/Smart-Living-Community (shanjida-create-complaint)
$ git push
Enumerating objects: 72, done.
Counting objects: 100% (72/72), done.
Delta compression using up to 8 threads
Compressing objects: 100% (30/30), done.
Writing objects: 100% (38/38), 12.43 KiB | 1.78 MiB/s, done.
Total 38 (delta 17), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (17/17), completed with 17 local objects.
To https://github.com/shanjida-alam/Smart-Living-Community.git
   2d251dc..07a68c3  shanjida-create-complaint -> shanjida-create-complaint
```

Figure 4.8: This screenshot shows the successful push of the code responsible for generating the project documentation.

4.4 Visual Aspect of Toggl Track for Submit Complaint

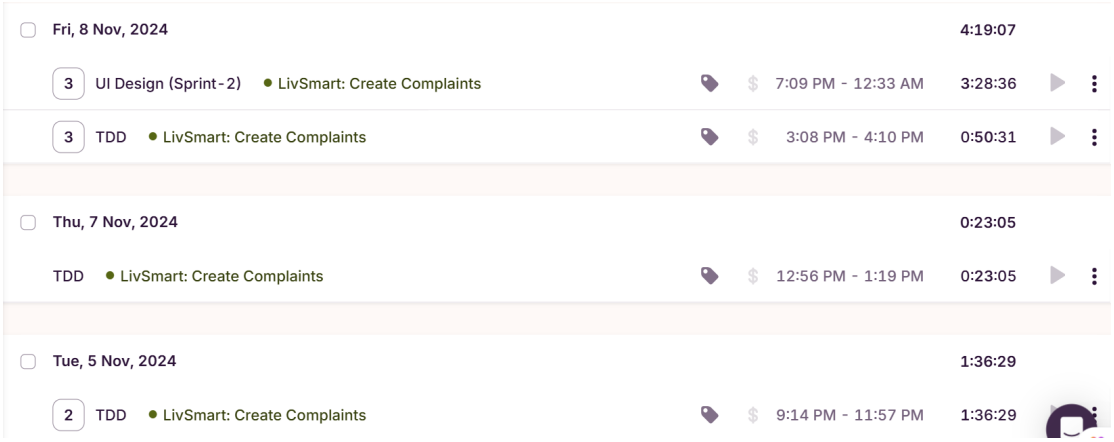

Figure 4.9: This Toggl Track log details the time spent on various tasks related to the **Submit Complaint** feature during sprint-2 in November 2024. It covers three consecutive days and includes tasks associated with both User Interface (UI) design and Test Driven Development (TDD). The total time logged for these tasks is 6 hours, 18 minutes, and 41 seconds.

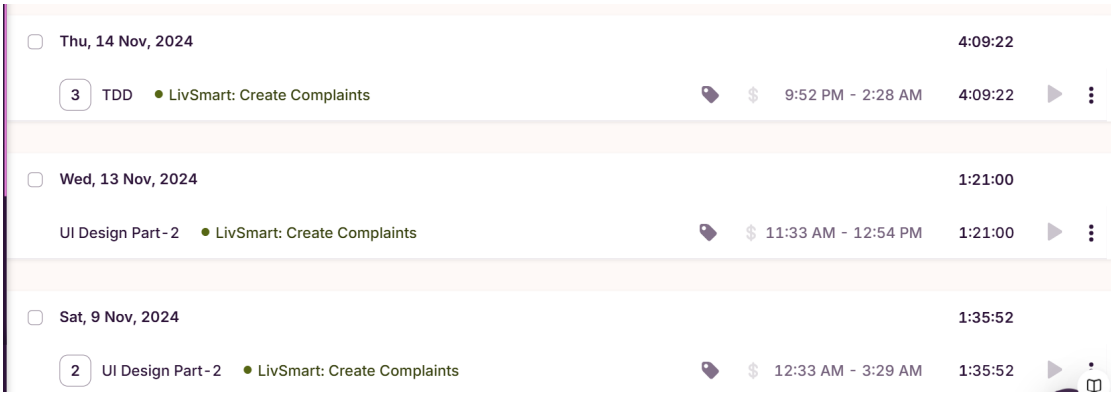

Figure 4.10: This Toggl Track log also describes the time spent on different tasks related to the **Submit Complaint** feature during sprint-2 in November 2024. It covers three days and includes tasks associated with both User Interface (UI) design and Test Driven Development (TDD). So, the total time spent over these three days was 7 hours 6 minutes and 14 seconds.

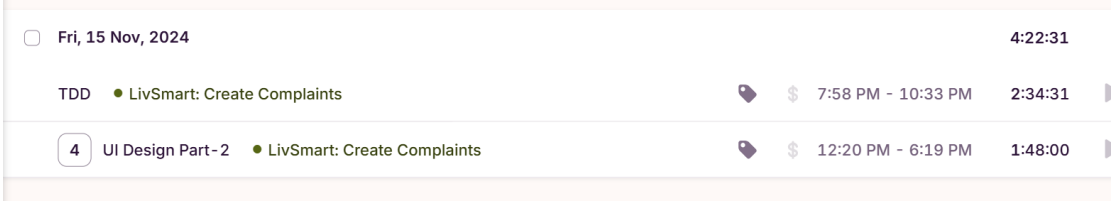

Figure 4.11: This is a Toggl time tracking log showing work done on Friday, November 15, 2024 for the **Submit Complaint** feature. The total time for the day is shown as 4 hours 22 minutes and 31 seconds.

I spent a total of 17 hours 47 minutes 26 seconds completing the **Submit Complaint** feature.Toggl is a valuable tool for tracking and measuring my contributions to the project.

Chapter 5

Conclusion

Sprint 2 demonstrated the value of iterative improvement in Scrum, showcasing enhanced planning, execution, and testing processes. The integration of TDD and continuous testing ensured better product quality and early issue detection. The insights gained will guide future Sprints for even better outcomes.