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## **Iteration 2**

### **Group 13**

**Christopher Phillips**

**Haoran Zhang**

**Khaleda Efat Jahan**

**Mohammed Al-Ajmi**

**Ruizhe Wu**

**Seif Elbayomi**

**Vishwa Patel**

**Date: March 19, 2023**

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## Iteration Plan

### 1. User Stories & Acceptance Criteria

Provide your git project dashboard link:

**GitLab repo:** <https://git.cs.dal.ca/alajmi/group13project>

### 2. Tasks Assignment: Acceptance test and Engineering task

[Necessary Field --> labels,task description, member assigned, start date, end date(expected), status [pending,completed,in progress]

Corresponding User Story and Acceptance Criteria	Task(s)	Estimate	Member Assigned	Start	Expected	Status
US15: As an employer, I want to be able to post new jobs so that employees can view and apply	1-Create UI for Employer to add job postings by a form allowing the employer to input details such as job title, job description, expected duration, place, urgency, salary, etc. 2-Link the page to the DataBase to save the job posting details	7	Seif Elbayomi	Mar 5, 2023	Mar 16, 2023	Completed

	in the app's database.					
AT 15:1 Given an employer using the app, when they access the job posting form, the form should have clear inputs for job title, job description, expected duration, place, urgency, salary, etc., and an easy-to-find "Submit" button.	1-Create UI for Employer to add job postings by a form allowing the employer to input details such as job title, job description, expected duration, place, urgency, salary, etc. 2-Link the page to the DataBase to save the job posting details in the app's database.	7	Seif Elbayomi	Mar 5, 2023	Mar 16, 2023	Completed
AT 15:2 Given an employer who has filled out the job posting form with valid details, when they click the "Submit" button, the app should save the job posting in the database and display a success message.	1-Create UI for Employer to add job postings by a form allowing the employer to input details such as job title, job description, expected duration, place, urgency, salary, etc. 2-Link the page to the DataBase to save the job posting details	7	Seif Elbayomi	Mar 5, 2023	Mar 16, 2023	Completed

	in the app's database.					
AT 15:3 Given an employer who has submitted a new job posting, when they view their posted jobs, the app should display the newly added job posting with all its details from the database.	1-Create UI for Employer to add job postings by a form allowing the employer to input details such as job title, job description, expected duration, place, urgency, salary, etc. 2-Link the page to the Database to save the job posting details in the app's database.	7	Seif Elbayomi	Mar 5, 2023	Mar 16, 2023	Completed
US17: As an employee, I want to be able to see a list of the available jobs so that I can apply to the jobs I want	1. Create layout for the page include buttons can bring user to the employee, employer and login pages.  2. Create a list view layout.  3. Create an Espresso test before implementing methods.	8	Ruizhe Wu	March 5 2023	March 17 2023	Completed
AT17.1: As an employee, I want	Create al list view can	3	Ruizhe Wu	March 5 2023	March 15 2023	Completed

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to be able to see a list of the available jobs with details information so that I can apply to the jobs I want	display different information of the jobs					
AT17.1: As an employee, I want to be able to see a list of the available jobs so that I can apply to the jobs I want	1. Link with data base to show all available jobs	8	Ruizhe Wu	March 5 2023	March 18 2023	Not Completed

US13: As a user, I want the app to dynamically detect my location when I open the app so that I can view jobs in my area	1. Get google maps API key.  2. Implement the location retrieval code in the app.	5	Mohammed Al-Ajmi	March 5 <sup>th</sup> , 2023.	March 10 <sup>th</sup> , 2023.	Completed
AT 13:1  Given I am logged in, the app should check if my GPS is enabled so that it can retrieve the location.			Mohammed Al-Ajmi			Completed
AT 13:2  Given my GPS is not enabled, the app should ask me to turn on the GPS so that it can retrieve the location.			Mohammed Al-Ajmi			Completed
AT 13:3  Given I am logged in, the app should request my permission to use my location so that I can keep my privacy if I don't want to share my location.			Mohammed Al-Ajmi			Completed
US14: As a user, I want to be able to switch between employer view	1. Created Choose View Activity to choose	2	Khaleda Efat Jahan	March 5 <sup>th</sup> , 2023	March 16 <sup>th</sup> , 2023	Completed.

and employee view so that I can switch back and forth between the two functionalities.	between employee or employer button.					
AT 14:1 When a user logs into the app, they will be taken to a separate page that will give them access to choose between the employee and employer button to set as their primary user.	2. Access to go back and forth between both users button functionalities.		Khaleda Efat Jahan			Completed.
<p>US18: As an employee, I want to be able to search for jobs based on filters so that I can find the jobs I want easily</p> <div> <p>At 18:1, when user logged in to the app as an employee, he might search the different objects, if it matches to</p> </div>	<p>1. Create a search box that allows it to enter the information the user wants to enter.</p> <p>2. find if the same information is available in firebase</p> <p>3. if there is, show similar information, if not, show not found</p>	10	Haoran Zhang	Mar 9 ,2023	Mar 16, 2023	<p>Did not completed, I just be invited into firebase on Mar 18. But I have message to group to help me enter the firebase for one week, but no one replied to me. I had no idea what to compare the input with because I was not in the firebase group, so I created my own library to store this information. But it keeps reporting errors</p>

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the information in firebase, it will show. But if users input too much text, it will also return error.						because there is no specific content. I did my best to finish it, but the group invited me to join firebase too late.
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US16: As an employer, I want to be able to view the jobs I posted so that I can view their details	1. Display everything about the posting for employer logged in  2. Extract the information from database about the job description and print it in the EmployerPosted Jobs Page  3. Created the Employer Profile by extracting the information of the Employer	5	Vishwa Patel	March 12th	March 17th	Completed
AT 16:1: Given an Employer wants to check out the profile page, create a new Activity which is used for extracting the data of profile and display it in Profile page of the employer logged in		5	Vishwa Patel	March 12th	March 17th	Completed

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AT 16:2: Given an Employer wants to check out the jobs they posted, create a new Activity which is used for extracting the data of jobs posted by the employer currently logged in from the job-posting database		5	Vishwa Patel	March 15th	March 17th	Completed
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US19: As an employee, I want to receive a notification whenever a new job is posted so that I can apply as early as possible.		3	Christopher Phillips	March 5th	March 17th	Unable to complete (Fell very ill before the required functionality for me to begin working on this task was implemented) . Due to my illness, I have been unable to complete this User Story. Contacted Deep, our TA and informed him of this situation. This being said, I had prepared adequately to complete this task by doing research on Firebase Cloud Messaging Services, but was simply unable to follow through due to sickness. (Therefore, no commits were made by me for this iteration).
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At19:1 Given an employee is logged in, the app should send said employee a real time notification whenever a new job is posted by an employer.		1	Christopher Phillips	March 5th	March 17th	See Above
At19:2 Given both an employer and an employee are logged in on separate devices. When a job posting is made by the employer, the employee should see the notification for the job uploaded by the employer, with matching details, in real-time.		1	Christopher Phillips	March 5th	March 17th	See above

## Progress Charts

### Testing Reports

Run: ChooseViewActivityTest x

Status  2 passed 2 tests, 42 s 84 ms


Filter tests: 


Tests	Duration	Pixel_6_Pro_API_33
✓ Test Results	5 s	2/2
✓ ChooseViewActivityTest	5 s	2/2
✓ checkSwitchingToEmployerViewOnButtonClick	3 s	✓
✓ checkSwitchingToEmployeeViewOnButtonClick	1 s	✓

Tests Passed  
2 passed

> java (generated) 34


Run: EmployeeHomepageEspresso x


Status  2 passed 2 tests, 18 s 988 ms

Filter tests: 

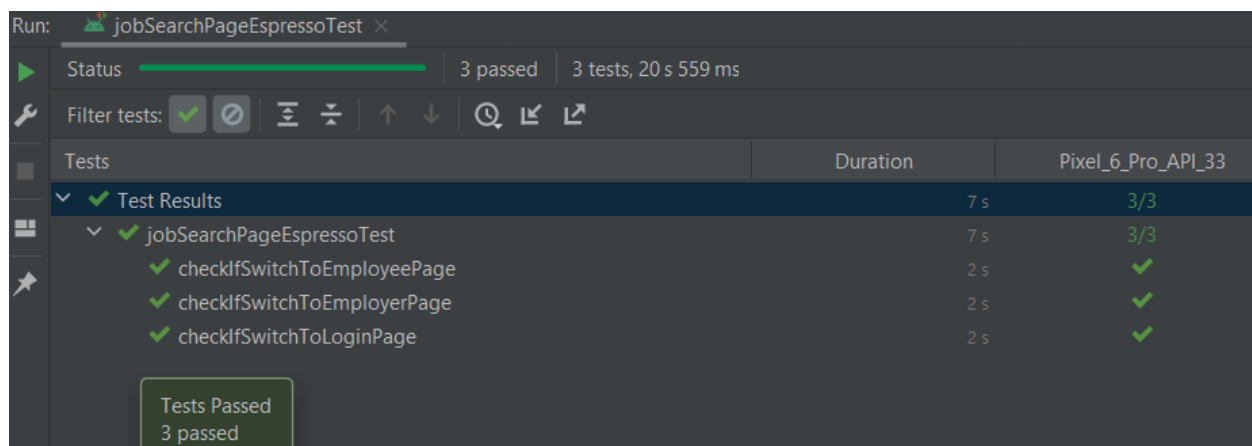
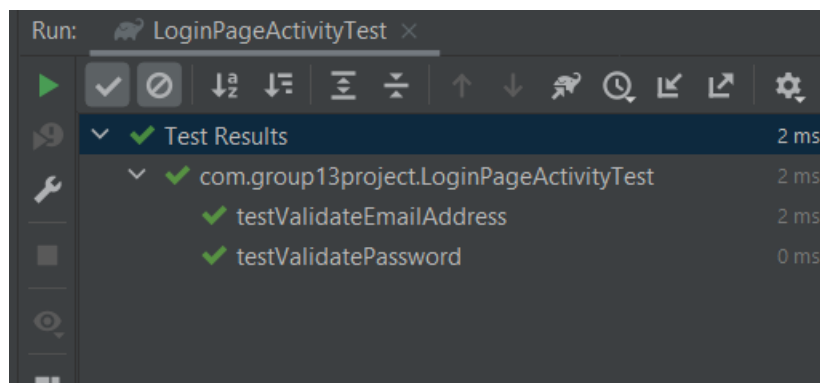
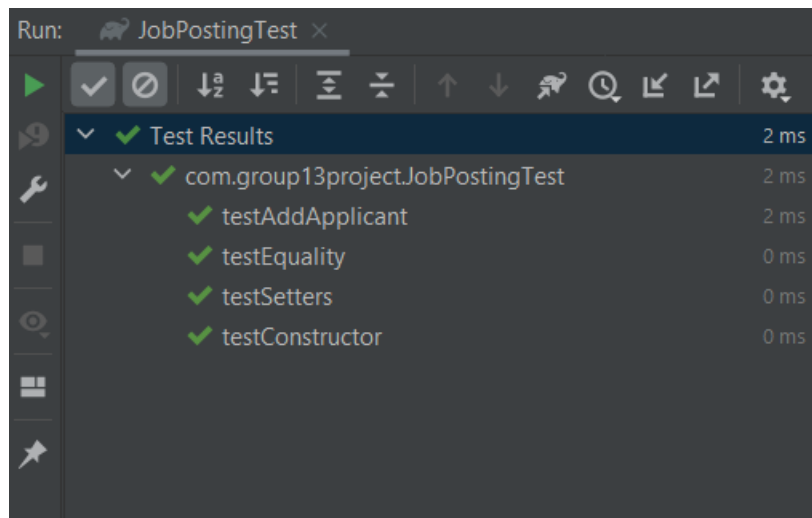
Tests	Duration	Pixel_6_Pro_API_33
✓ Test Results	6 s	2/2
✓ EmployeeHomepageEspresso	6 s	2/2
✓ checkIfSwitchToEmployerPage	3 s	✓
✓ checkIfSwitchToLoginPage	2 s	✓

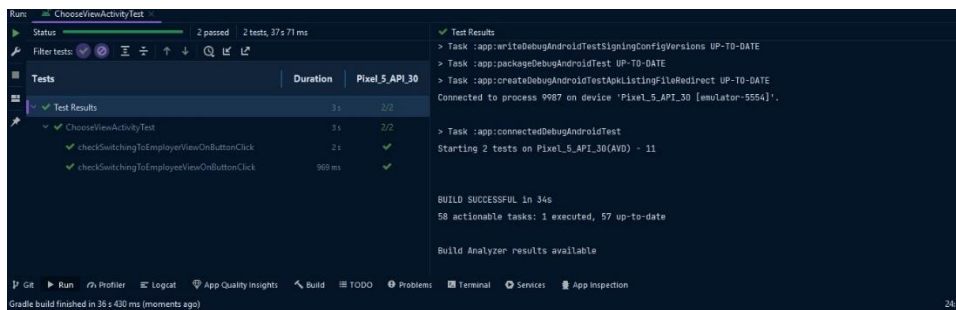
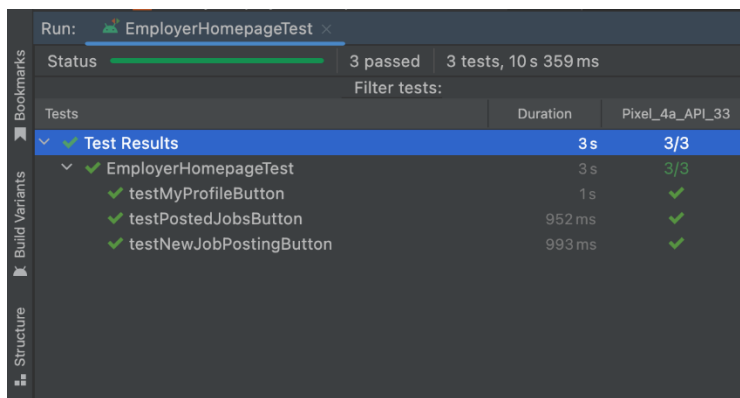
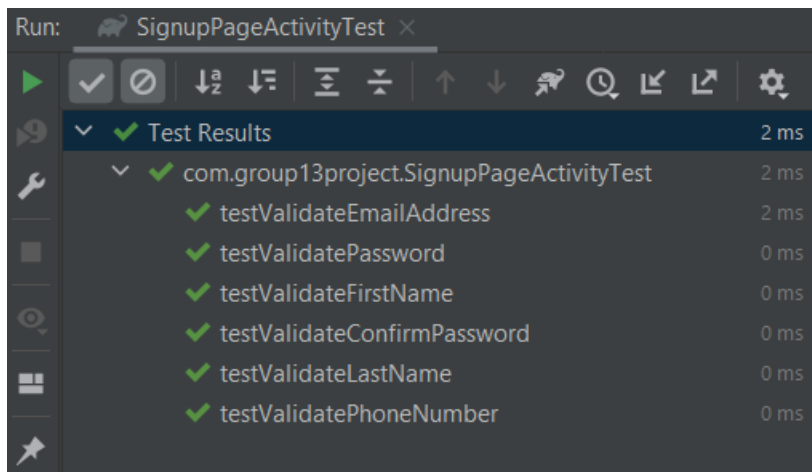
Run: EspressoTest x

Status  2 passed 2 tests, 14 s 473 ms

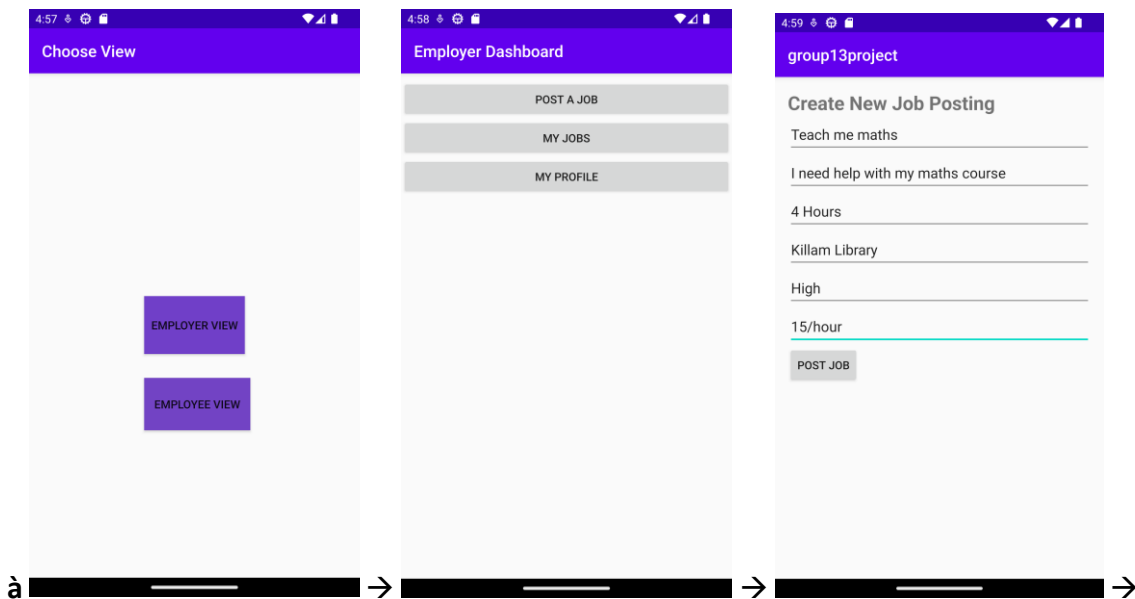
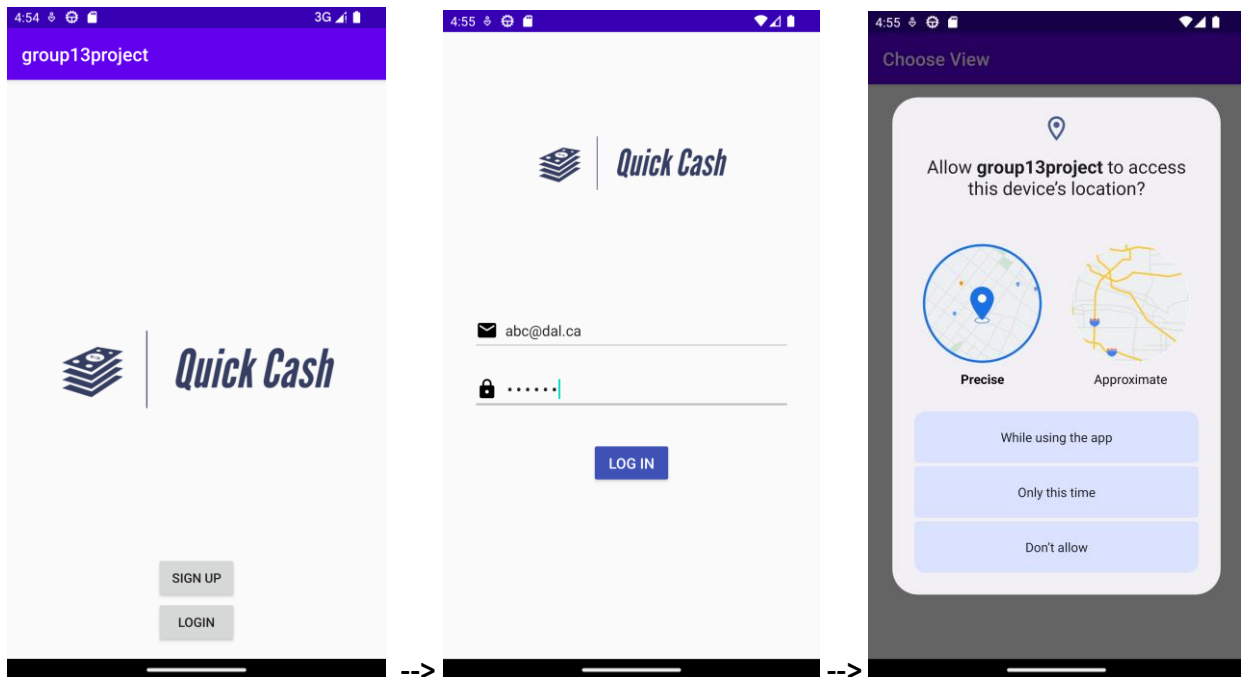
Filter tests: 

Tests	Duration	Pixel_6_Pro_API_33
✓ Test Results	5 s	2/2
✓ EspressoTest	5 s	2/2
✓ checkIfSwitchToLoginPage	3 s	✓
✓ checkIfSwitchToSignUpPage	2 s	✓

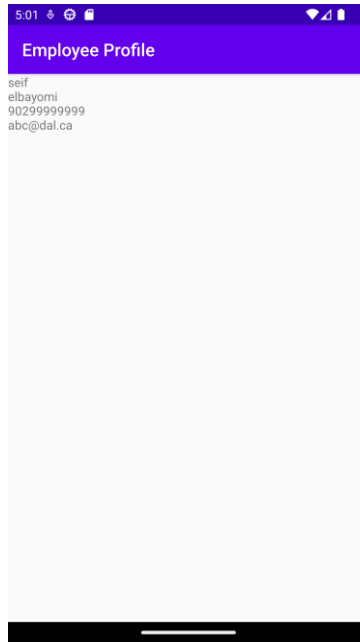
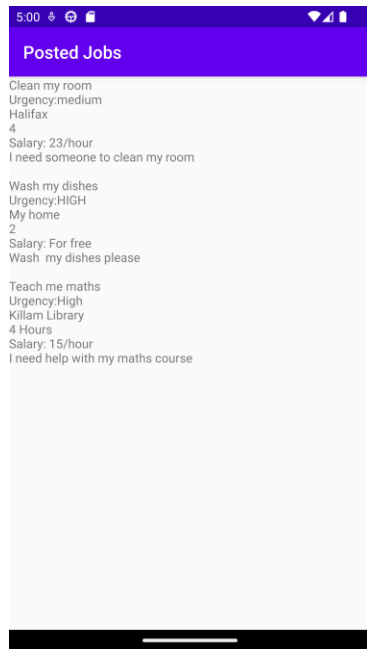




## Manual Tests:



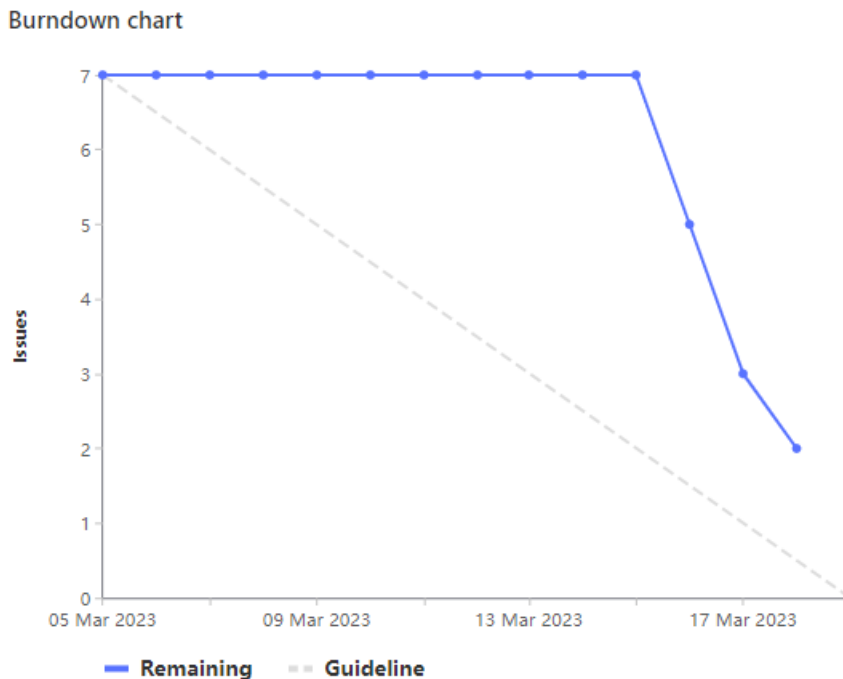




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## Burndown Chart

As we discussed in the client TA meeting, we were splitting each user story into tasks, and each team member was assigned a user story consisting of multiple tasks. Whenever we finished a task, it was marked as completed. However, the task's completion times are not reflected on the burndown charts. Thus, the burndown chart looks flat, despite the team having continuous progress.



## Velocity Chart

### Commit statistics for Development Jan 28 - Mar 18

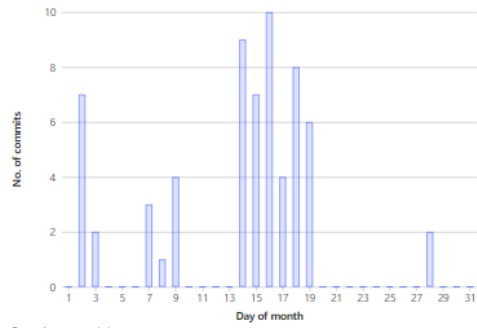
Excluding merge commits. Limited to 2,000 commits.

- Total: **63 commits**
- Average per day: **1.3 commits**
- Authors: **8**

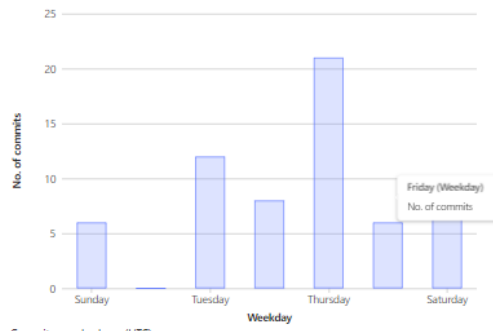
Development

group13project

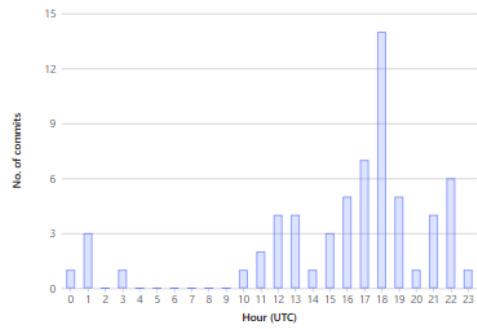
Commits per day of month



Commits per weekday



Commits per day hour (UTC)



Issues 7 Merge requests 5 Participants 7 Labels 1

Unstarted Issues (open and unassigned) 0

Ongoing Issues (open and assigned) 2 11

As an employee, I want to receive a notification when a new job is posted so that I can apply as early as possible.

#19 In progress 5

As a employee, I want to be able to search for jobs based on filters so that I can find the jobs I want easily

#18 In progress 6

Completed Issues (closed) 5 22

As an employee, I want to be able t see a list of the available jobs so that I can apply to the jobs I want

#17 5

As an employer, I want to be able to view the jobs I posted so that I can view their details

#16 4

US15: As an employer, I want to be able to post new jobs so that employees can view and apply

#15 7

As a user, I want to be able to switch between employer view and employee view so that I can switch back and forth between the two functionalities

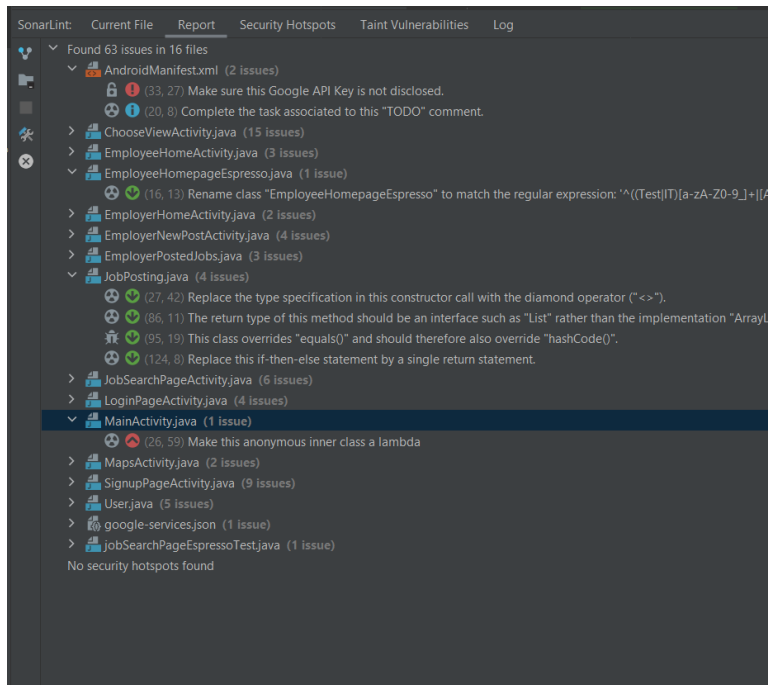
#14 2

As a user, I want the app to dynamically detect my location when I open the app so that I can view jobs in my area

#13 4

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# SonarLint and Code Refactoring



## Violations:

SonarLint identified several violations in the codebase. After analyzing the violations, we found the following three violations to be the most important:

- **Duplicated string literals:** This violation was identified as a critical issue as it can make the process of refactoring error-prone. We created constants for the duplicated string literals and replaced all occurrences of the string literals with the constants. This ensures that if the string value needs to be updated, it only needs to be updated in one place.
- **Commented out code:** This violation was identified as a major issue as it can bloat programs and reduce readability. We deleted the commented out code and ensured that unused code is removed to avoid clutter in the code. If the code is needed in the future, it can be retrieved from source control history.
- **Dead store:** This violation was identified as a minor issue as it can waste resources. We removed the unused variables and ensured that calculated values are used to avoid unnecessary calculations.

## Actions taken:

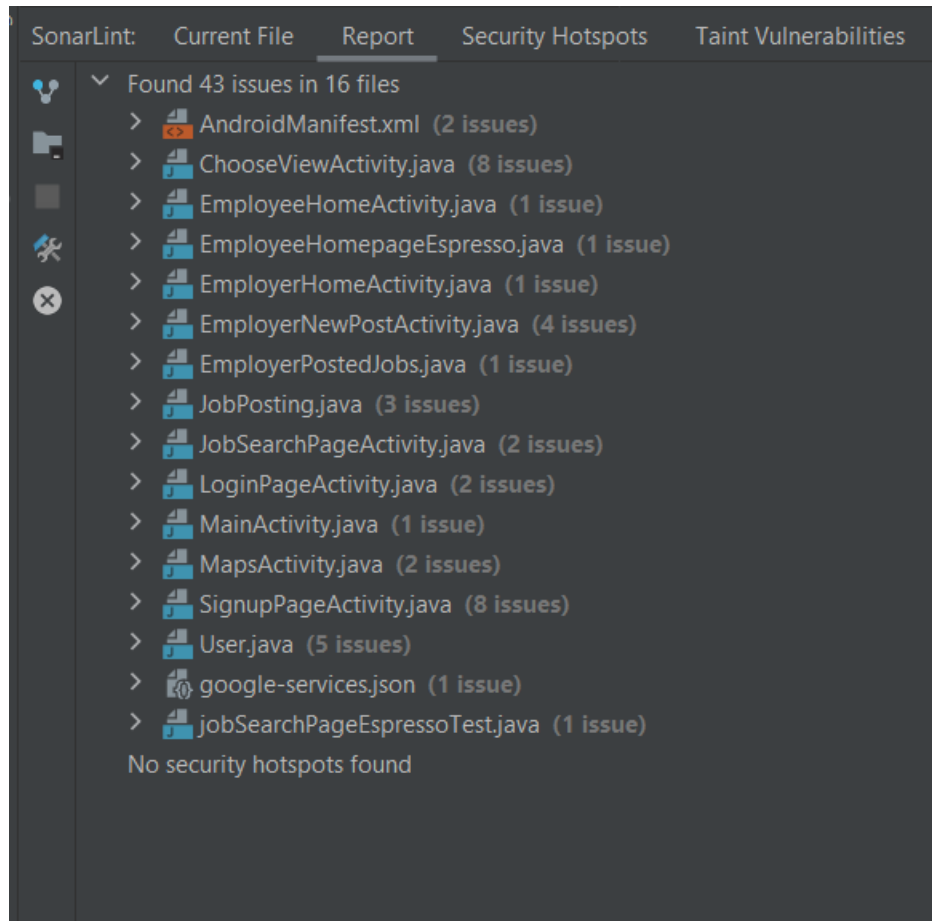
To address the identified violations, we took the following actions including but not limited to:

- We created constants for duplicated string literals and replaced all occurrences of the string literals with the constants.
- We deleted the commented out code and ensured that unused code is removed to avoid clutter in the code.

- We removed the unused variables and ensured that calculated values are used to avoid unnecessary calculations.

You can find a lot of the code refactoring done under the SonarLint commit.

Screenshot after numbers decreased from 63 to 43:



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## **SOLID Principles**

### Single Responsibility Principle (SRP):

We have adhered to the Single Responsibility Principle by designing each class with a specific purpose, ensuring that each class has only one reason to change. For instance, our `EmployerNewPostActivity` class focuses solely on the creation of a new job post. Similarly, the `ChooseViewActivity` class is dedicated to providing users with the option to select a view (employer or employee). By following the SRP, we have ensured that our code is modular and easy to maintain.

### Open/Closed Principle (OCP):

Our team has also considered the Open/Closed Principle in our application's design. We have made sure that our classes are open for extension but closed for modification. One example is the `JobPosting` class, which can be easily extended by creating a new class that inherits from it and adds new features without modifying the `JobPosting` class itself. This approach has enabled us to create a flexible and extensible architecture that can adapt to future requirements.

### Liskov Substitution Principle (LSP):

We have also ensured that our code adheres to the Liskov Substitution Principle. Although there are no explicit inheritance relationships in our code, we have used interfaces, such as `LocationListener` in the `ChooseViewActivity` class, to guarantee that our classes provide the same behavior as specified by the interface. This allows our classes to be used interchangeably with other classes that implement the same interface, ensuring a consistent and reliable application behavior.

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## Meetings

### 1. Client TA Meeting: 2023-03-02

**Time and location:** Teams

**Attendance:** Ruizhe Wu, Mohamed Jasim, Seif ELBayomi, Haoran Zhang, Christopher Phillips, Khaleda Efata Jahan, Vishwa Patel, Christopher Phillips.

**Documented by:** Khaleda Efata Jahan.

#### Summary: (15 mins)

This was our first meeting with the team and the client TA after the first iteration. Therefore, we discussed about our first iteration report with the client TA first, then proceeded to discuss about our next steps that is required to start the next iteration.

#### What to do after meeting:

- Work correctly on our code review as our client TA mentioned in the meeting.
- Formatting the documents correctly for the next iteration.
- Work on the progress of our tasks regularly.
- We will assign user stories in the next stand-up meeting.
- Get everything set up on Gitlab before we start working on our next user stories.
- Let the TA know about the documentation of our assigned user stories.

### 2. General Meeting: 2023-3-4

**Time and location:** Teams.

**Attendance:** Ruizhe Wu, Mohamed Jasim, Seif ELBayomi, Haoran Zhang, Christopher Phillips, Khaleda Efata Jahan, Vishwa Patel, Christopher Phillips.

**Documented by:** Khaleda Efata Jahan.

#### Summary: (39mins)

We assigned user stories and tasks to each team members on Gitlab. Additionally, we read the documents together and explained each of the user stories individually for better understanding.

#### What to do after meeting:

- Ruizhe will work on the functionality of the available job list view.
- Vishwa will work on the functionality of viewing the jobs user posted.
- Khaleda will work on the functionality of choose view activity to choose back and forth between employee and employer button.



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- Mohammad will work on the functionality of the location detector to search for jobs based on areas.
  - Seif will work on the functionality of posting new jobs and applying in the app.
  - Christopher will work on the notification function to receive new job alert.
  - Haoran will work on the search bar and filters for job hunting.
  - Add new tasks in the assigned user stories if it's needed.
  - Commit regularly and write tests first.
  - Assign one or two reviewers when we are merging.

### **3. General Meeting: 2023-3-11**

**Time and location:** Teams.

**Attendance:** Ruizhe Wu, Mohamed Jasim, Seif ELBayomi, Haoran Zhang, Christopher Phillips, Khaleda Efat Jahan, Vishwa Patel, Christopher Phillips.

**Documented by:** Haoran Zhang

**Summary: (25mins)**

We reported on each member's work and reconfirmed each person's assigned user story and sent out a list of invitations to each member on firebase.

**What to do after meeting:**

- Ruizhe will finish his work this weekend
- Vishwa will finish viewing the jobs user posted.
- Khaleda will work on the functionality of choose view activity to choose back and forth between employee and employer button.
- Mohammad will work on the functionality of the location detector to search for jobs based on areas.
- Seif will work on the functionality of posting new jobs and applying in the app.
- Christopher will work on the notification function to receive new job alert.
- Haoran will work on the search bar and filters for job hunting.
- We are planning to start write the report

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#### 4. General Meeting: 2023-3-18

**Time and Location:** Teams

**Attendance:** Ruizhe Wu, Mohamed Jasim, Seif ELBayomi, Haoran Zhang, Christopher Phillips, Khaleda Efat Jahan, Vishwa Patel.

**Documented by:** Ruizhe Wu

**Summary (1hour):**

Everyone reports what they have accomplished at the current stage and pushes their work to the group repository. Setting rules that each member should only push files that they made changes on instead of pushing everything to the repository.

**What to do after meeting:**

- Everyone should start focusing on finishing up the iteration report.
- Each member should finish filling up their corresponding user story.

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## **Iteration Post-mortem Review**

### **Issues With Development**

1. Sometimes the program is not working for some member after someone push their code to the group repository.
2. The Java version is not compatible with some members.

### **Solutions**

1. Setting rules that each member should only push files that they made changes on instead of pushing everything to the repository.

### **Goals for Upcoming Iteration**

1. Improve code quality.
2. Write code base on SOLID principle.
3. Implement more functionality for the app base on TDD.