

# Sprint 1B

CSCI-310 Software Engineering

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## Fall 2017

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# 1. Preface

This document outlines the first sprint session of Dream Team for the Android app Focus! . It specifies daily scrums that entail summaries of the work done by the group members during the first week. This document also concludes the work done with a final Sprint Review meeting that discusses the hits/misses of Sprint#1 and scope of improvement for the next sprint. The document also clearly mentions any new features or extra work done that was not mentioned in the Product or Spring#1 backlog.

# 2. Introduction

Phones have constantly evolved and have today become an extension of people, notifying us about breaking news, social events, messages from friends, etc. Constant notifications are distracting and can make phone users unable to focus on the tasks at hand due to constant interference. *Focus!* seeks to alleviate this problem by blocking apps and notifications in a user-configured manner so that users can focus on their work and other activities.

*Focus!* is an Android application that allows users to block distracting applications and their notifications for a specified amount of time. The app allows users to define profiles to block certain applications and notifications at specified times and days.

# 3. Instructions

This project includes a Gradle file that specifies all dependencies required to build this project.

1. Import project into Android Studio by invoking File > Open...
2. Sync Gradle file with project by invoking Tools > Android > Sync Project with Gradle Files
3. The application is now ready to be built and run. Invoke Run > Run 'app' and select a target Android device or Android emulator to run the app.

## 4. Daily Scrums

The group finished the Spring 1a pdf document with the Product Backlog and Sprint Backlog and submitted it. The group unanimously decided to start the sprint scrums from November 1 as it gave everyone enough time to take care of other class commitments.

### 4.1. 2017-11-01

Meeting time : 12:00pm - 12:20pm

Meeting location : MRF lobby

#### 4.1.1. Bowie

The project and scrum backlog was compiled and submitted through DEN@Viterbi, per submission instructions. A clear task structure has been ideated and realized, however, due to other constraints, especially a physics midterm the next day, no significant progress has been done in this assignment. Yesterday I ideated the project backlog. Today, the sprint backlog was further dissected and pseudocode for the new component was sketched out for the BackgroundService patch.

#### 4.1.2. Tushar

- Yesterday, I identified the key segregation of work in the Sprint Backlog and disseminated the tasks for more clarity amongst the group regarding the goals to achieve.
- Today I plan to learn about how Android uses Broadcast Receivers to communicate between elements. I found essential links to assist this functionality and wrote pseudocode on BackgroundService side for the same.
- So far, I do not see any issues that may hamper the achievement of the sprint goal.

#### 4.1.3. Shatrujeet

- Yesterday: I segregated my part of the work for the sprint, me and Aarav divided the GUI according to our preference
- Today: I learned how to use SCRUM methodology and discussed with Tushar on how to register my work on our document. I also went through the app and cleaned up my code to make it more readable. I wrote comments at a lot of places to make sure all my teammates can understand it.
- I think I will finish up my work on time.

#### 4.1.4. Prateek

- Yesterday: Contributed to Sprint Backlog and Product Backlog and added the database functionality that was missing or would be needed in the future
- Today: Discussed the Server needs regarding the database to add the functionality written in Sprint Backlog. Heard the needs and designed the Database Tables, decided on the associated function names and definitions so server could start programming and call these functions.
- Block: None

#### 4.1.5. Aarav

- Yesterday I identified the key segregation of work in the Sprint Backlog and the Product Backlog for better understanding of the work remaining.
- Today I plan to learn the SCRUM methodology and organise my work for the whole week as well as discuss some of the issues which may occur while adding the new backup and restore functionality including the general flow of the app. I planned the storyboard for the whole app again and debated on the implementation of certain activities.
- I think I am well on my way to reach the goal for the sprint.

### 4.2. 2017-11-03

Meeting time : 7:00pm - 7:30pm

Meeting location : Ronald Tutor Campus Center

#### 4.2.1. Bowie

Yesterday I wrote pseudocode for the new backgroundservice patch, today I did code review with my partner to ensure the correctness in our logic to complete this task. We did a manual code review using paper and pen and devised multiple test situations which the code can encounter, then wrote them into JUnit test cases to ensure the stability of such cases. We also had to add a missing functionality to DatabaseConnector to allow our patch to come to fruition. This is considered a minor obstacle.

#### 4.2.2. Tushar

- Yesterday, I learnt about Broadcast Receivers in Android through various sources on the internet. I wrote pseudocode on BackgroundService side for the same and also marked the coding blocks that need to be changed in BackgroundService to adapt to the new changes.
- Today, I will implement Broadcast Receiver to send and receive broadcast messages between BackgroundService and ProfilesActivity or its adapter.
- So far, I do not see any issues that may hamper the achievement of the sprint goal.

#### 4.2.3. Shatrujeet

- Yesterday: I cleaned up my code on the app and learnt how to write good documentation in scrum cycles. I figured out that after cleaning the code, one of the emergent errors I was facing sometimes is completely gone now.
- Today: I discussed with aarav regarding the GUI flow of the app and made sure we were on the same page. We laid out the activities and layouts we will need for our share of work and made sure we follow the same naming convention to have minimal merge issues.
- I think I am still on time with the team deadline.

#### 4.2.4. Prateek

- Yesterday: Completed function definitions and shared with Server and UI
- Today: Created additional table needed to store deleted profiles in schedules that were deleted while active

- Block: Was not sure what columns this table would have so I was in constant communication with the Server side to understand their needs

#### 4.2.5. Aarav

- Yesterday I planned the new flow of the app with the two new features we plan to add.
- Today I plan to add the required buttons and activities and discuss the code with my partner working on the UI so that we are on the same page and he wouldn't have confusion with the new code.
- There was no blockage that would hinder my progress.

### 4.3. 2017-11-04

Meeting time : 4:00pm - 4:15pm

Meeting location : Lorenzo (Shatrujeet's Apartment)

#### 4.3.1. Bowie

Yesterday I ensured the correctness of my pseudocode, today I extensively tested (>30 times) of the same actions with varying delays in between actions using JUnit tests to hone in on the issue of inconsistent notification behavior. Other than minor technical difficulties, e.g., my phone crashing for no apparent reason, no obstacle is documented.

#### 4.3.2. Tushar

- Yesterday, I implemented the Broadcast Receiver to send broadcast messages from BackgroundService to ProfilesActivity. I also implemented the same for the other way around i.e from ProfilesActivity to BackgroundService but for some reason it doesn't work. The message itself is not reaching the service, although messages from the service to the activity work well.
- Today, I will debug and try to further analyse why one end of the communication channel is not working. Once I am able to fix this, I'll be able to pass on the required alerts from UI to the service.
- Unfortunately, too much time has already been spent on trying to fix this other end of communication channel. I hope to be able to fix it today or else I will find another way to make this functionality faster, while not affecting any other features.

#### 4.3.3. Shatrujeet

- Yesterday: I planned out the activities and layout we will need for the successful completion of this sprint cycle on time.
- Today: I will make the layouts for my part of the activities. I will add the required components and will try to align these layouts as closely as possible to the app. Then I will modify the layouts to follow the general theme of the app including the colour, font and styles. All the layout follow the same aesthetic paradigms.
- I think I am gonna finish on time, no hurdles as of yet.

#### 4.3.4. Prateek

- Yesterday: Created deletedProfilesInSchedule table

- Today: Created functions to add a profileInSchedule to the deleted profiles in schedule table and a function to get all profiles in schedule from the deleted profiles in schedule table
- Block: None

#### 4.3.5. Aarav

- Yesterday I linked the new buttons and new activities as well as discussed the new components with my UI partner.
- Today I added the required text fields and boxes in the new activities which will be populated later. Just the UI was created without any backend code.
- There was no blockage for me.

### 4.4. 2017-11-05

Meeting time : 12:00pm - 1:15pm (was significantly longer than other scrums because we worked on code together)

Meeting location : Lorenzo (Shatrujeet's Apartment)

#### 4.4.1. Bowie

Yesterday I tested the correctness of my understanding of BackgroundService code, today I worked to integrate those modifications into the BackgroundService code base. Aside from DatabaseConnector functionality has not been completely implemented, no significant obstacle has been documented.

#### 4.4.2. Tushar

- On further analysis of my code yesterday and trying solutions from various sources online, I finally tried to ideate a nicer and cleaner solution for the feature. I wrote pseudocode for two of my ideas and discussed them extensively with Bowie who accompanied me in the BackgroundService component in the project.
- Today, I will implement these two processes on the BackgroundService side and extensively test all the features on the app using the test cases written in Assignment#4. My primary idea is to change the structure of the tick() function to accommodate user inputs on a faster thread than the one that does the heavy database retrievals.
- As per my discussion with my teammate, my new implementation should work just fine and hence this task might be over by tonight. I can then implement new features beyond the scope of Sprint#1.

#### 4.4.3. Shatrujeet

- Yesterday: I was working with layouts and their integration in the app. The layouts are now aligned with the general theme of the app.
- Today: There has been an issue with the timer for a while which emerges once in awhile where the time goes from one minute to the inactive state without the transition to the zero minute. I will go through my entire timer logic and make sure it does not show up again. Then, I will test the functionality rigorously to make sure it works.
- I am still on time with my work.



#### 4.4.4. Prateek

- Yesterday: Created the desired functions to add profile in schedule to the deleted table and get all profiles in schedule from that table
- Today: Called the implemented functions from various different functions in database in the case whenever an active profile is removed.
- Block: None

#### 4.4.5. Aarav

- Yesterday I filled the activities with text fields and buttons as required. The tasks assigned to me for this Sprint were finished yesterday.
- Today I plan to create the Google Login Page which will be required in the future for the backup and restore feature which was added. We were planning to include this in the future Sprint so I decided to get a headstart on it.
- The work required from me for this sprint was finished today. I can implement other peripheral activities and learn the API required for future Sprints during the rest of the week.

### 4.5. 2017-11-06

Meeting time : 3:15pm-3:40pm

Meeting location : Century (Bowie's Apartment)

#### 4.5.1. Bowie

Yesterday I integrated my changes to the BackgroundService code base. Today I realized the problem of the notification problem was because the threads are not running in sufficient speed to support the user interaction. I reimagined the thread timeouts to allow faster and snappier updates. No significant obstacles here.

#### 4.5.2. Tushar

- Yesterday, I change the structure of the tick() function to accommodate user inputs on a faster thread so as to comply with user input and extensively tested all the features on the app using the test cases written in Assignment#4. All things worked and notifications for profile instant activation and deactivation work close to the desired time i.e much aligned to user input time.
- Today, I plan to work beyond the needed tasks of Sprint#1 and implement an additional delete all functionality in Profiles and Schedules GUI. This added functionality will give the user the option to clear the previous database per say and start afresh.
- All work from here on will add more features/ will be beyond goals of Sprint#1.

#### 4.5.3. Shatrujeet

- Yesterday: I spent my time mostly on the timer as the conditional testing is really complicated because the different that can occur.
- Today: I plan to go through different online resources to learn how to integrate google authentication in the app and how to store files on the cloud. As we will be storing all the statistics on the cloud for the user to download and upload. The only problem being the user can only access this functionality if they have a google account.

- I think I am very much on time with this.

#### 4.5.4. Prateek

- Yesterday: Completed the desired functionality of storing a deleted profile in schedule whenever it is deleted while active
- Today: Added 2 test cases to check that the added functionality was working as desired. Also ran previous test cases to ensure nothing else broke. Notified Server that the functionality in database was complete
- Block: None

#### 4.5.5. Aarav

- Yesterday I finished the Google Login Page without the Logic.
- Today I plan to learn the Google identification Platform which will help me with the future sprints.
- Blocks: None

### 4.6. 2017-11-07

Meeting time : 6:30pm-7pm

Meeting location : WPH Computing Lab

#### 4.6.1. Bowie

Yesterday I investigated and decided that the thread timeouts were the correlating issue with notifications. Today I completed the final product of this sprint and stabilized notification handling. Except for crippling anxiety, I see no obstacle in preventing me to meet daily scrum goals, which are now completed. (Jokes aside, this sprint is considered complete!)

#### 4.6.2. Tushar

- Yesterday, I added buttons to clear all profiles and schedules on both Profiles and Schedules GUI. These buttons also ask the user for confirmation before this step is finalized. This added functionality gives the user the option to clear the previous database per say and start afresh.
- Today, I will conduct regression testing on black box testing to check if everything works with the new clear all functionality, since database changes also occurred during the sprint. On completion and any bug fixing, I will finally check if this clear all functionality correctly updates the database fast enough that the service does not cause any redundant/unnecessary function calls. I will also add the multiple profiles/schedules deletion feature to the app which was suggested in the earlier assignments.
- The sprint goal has been met with additional features.

#### 4.6.3. Shatrujeet

- Yesterday: I was learning how to integrate google authentication in my app and how to upload my content to the google account.
- Today: I will be writing the backend code for my activities. I will be populate my layouts with data from different databases. I will also analyse my data and manipulate it so that I can display aggregated results to the user. I will have to keep in mind the

different components of the database so that I only display the results which makes sense to the user.

- I have finished all work on time.

#### 4.6.4. Prateek

- Yesterday: Tested the added functionality for this sprint and notified Server about the completion of database functionality
- Today: The server requested to make some modifications to the database code to simplify Server calls. Updated the database function as required, ran all test cases and notified the server on completion
- Block: Server and Database had a conflict regarding user notification on profile deactivation. Resolved conflict and finished the functionality

#### 4.6.5. Aarav

- Yesterday I started learning the Google identification Platform API
- Today I plan to learn more advanced stuff related to Google so that we can hook up the upload and download features.

## 5. Sprint Review

Meeting start time and end time : 6:30pm to 7:45pm

Meeting location : Lorenzo, (Tushar's Apartment)

Meeting summary (e.g., What has been done? What was planned but wasn't completed? Why? What went well during the Sprint? What could be improved in the next Sprint?)

A brief overview of work completed in the sprint backlog, disregarding the extra work:

- Streamlined GUI-BackgroundService communication
- New functionality added to DatabaseConnector to facilitate better event-based notifications
- New functionality in GUI to allow users to view statistics of lifetime use

No work was left incomplete. In fact, extra work was included to perfect our app. Extra work has been attached below for reference. For a first sprint, the performance was beyond all our expectations -- we had expected all of us to be lost some way or another, but pair programming and the scrum framework really helped clear our head and focus on what we should do next.

We had some misunderstandings with regard to assignment descriptions, especially with regards to how much should be delivered in one sprint cycle. We thought we would be delivering X amount of features by the end of the third sprint. However, as it turned out, we should be delivering "demonstrable work" (TA Umang Gupta) each sprint. Since this information came rather late (2017-11-06T11:00:00-0700), we decided to proceed with our current sprint backlog and execute the altered direction from sprint 2 onwards.

## 6. Work Done Beyond Sprint Goal

The work done in this section was not mentioned in Sprint/Product Backlog and was accomplished within Sprint#1 once the initial goals were met.

- 6.1. Delete All Profiles: This functionality allows user to clear the whole list of profiles made by him/her.
- 6.2. Delete Multiple Profiles: This functionality allows user to select multiple profiles made by him/her that need to be deleted.
- 6.3. Delete all schedules: This functionality allows user to clear the whole list of schedules made by him/her.
- 6.4. Delete Multiple Schedules: This functionality allows user to select multiple schedules made by him/her that need to be deleted.
- 6.5. Running timer: After demonstrating a static timer, we thought that the user would appreciate a timer with runs every second to show the remaining time.
- 6.6. Google Authentication Page: We thought we would reduce the work for the next sprint and add the UI for the login page in this sprint.
- 6.7. GUI to allow users to view statistics of lifetime use