



SHALOMINC_SMARTBEATS_Deliverable_4

Team Name: SHALOM INC

Project Name: SMARTBEATS

Team Members:

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Nicholas Mohan (N01361663)

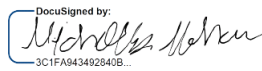

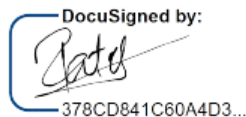
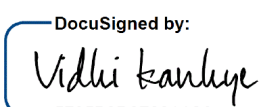
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Brief Description:

The application itself is a controller for a smart home speaker. It will allow the user to control the music supplied to the speaker and accent lighting. Access to a song database will also be incorporated into this app for the online database functionality aspect.

Members Info and Participation:

Name	ID	Signature	Effort
Nicholas Mohan	N01361663		100%
Bhargav Patel	N01373029		100%
Ripal Patel	N01354619		100%
Vidhi Kanhye	N01354573		100%

GitHub Link

GitHub Link: <https://github.com/bhargavpatel3029/SMARTBEATS>

Sprint Goals:

Sprint goal 4:
Create user Settings

- Adding lock portrait mode for the user
- Creating night mode switch (optional)
- A page that shows the information about the Smartbeats
- A page for privacy policy of the app
- Creating a fab button which takes user to email of developer if they have any queries

Sprint goal 5:
Final goal for app submission

- Create test cases Junit 4, Roblectric and Espresso
- Reduce the number of critical bugs to zero.
- Follow all the stories
- Refactoring the code to make it readable

Sprint Goals

Sprint goal 1:
Making a color selector for LED light in Light fragments

- Making colour picker wheel for user's ease
- One slider to adjust dimness of lights
- A spinner to add different modes of lights

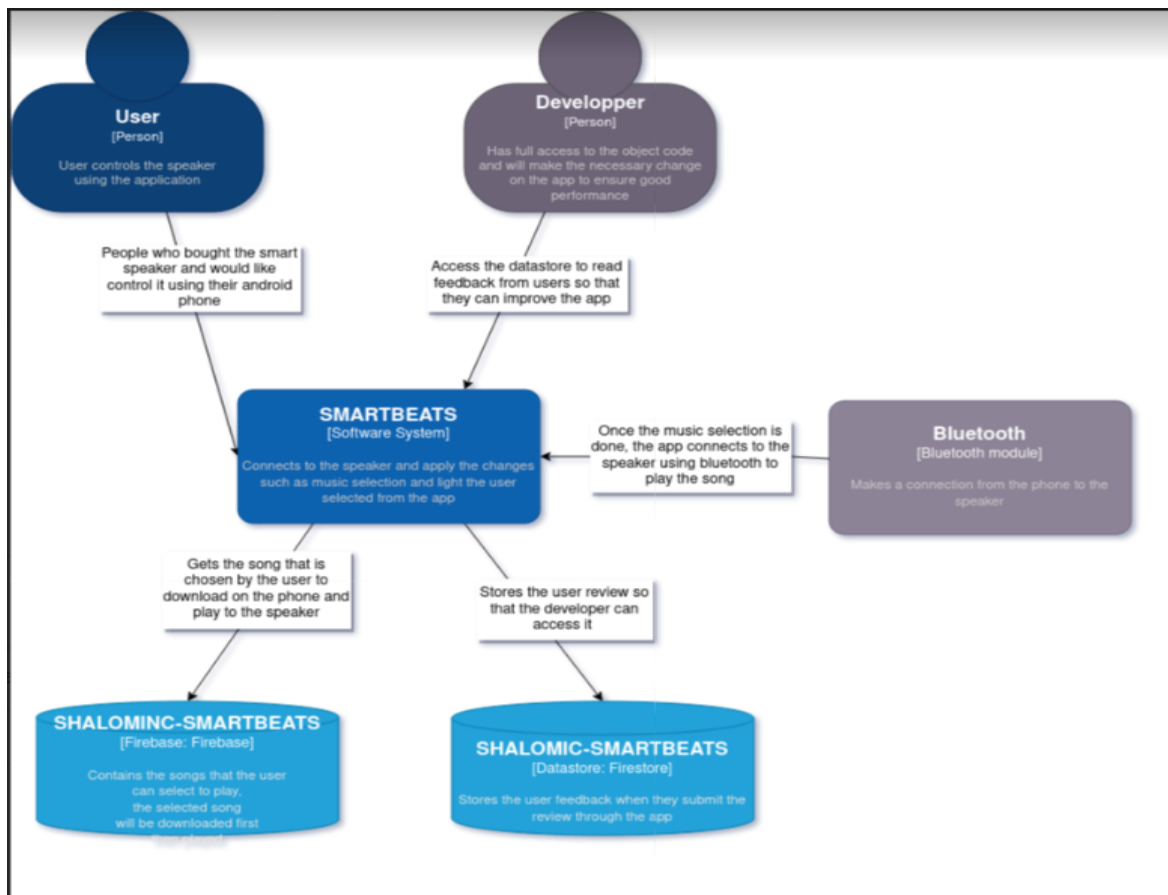
Sprint goal 2:
Adding a music selector

- Create an album logo
- The user have a list of music to select from spinner
- Setting up the timer to end the music when timer ends

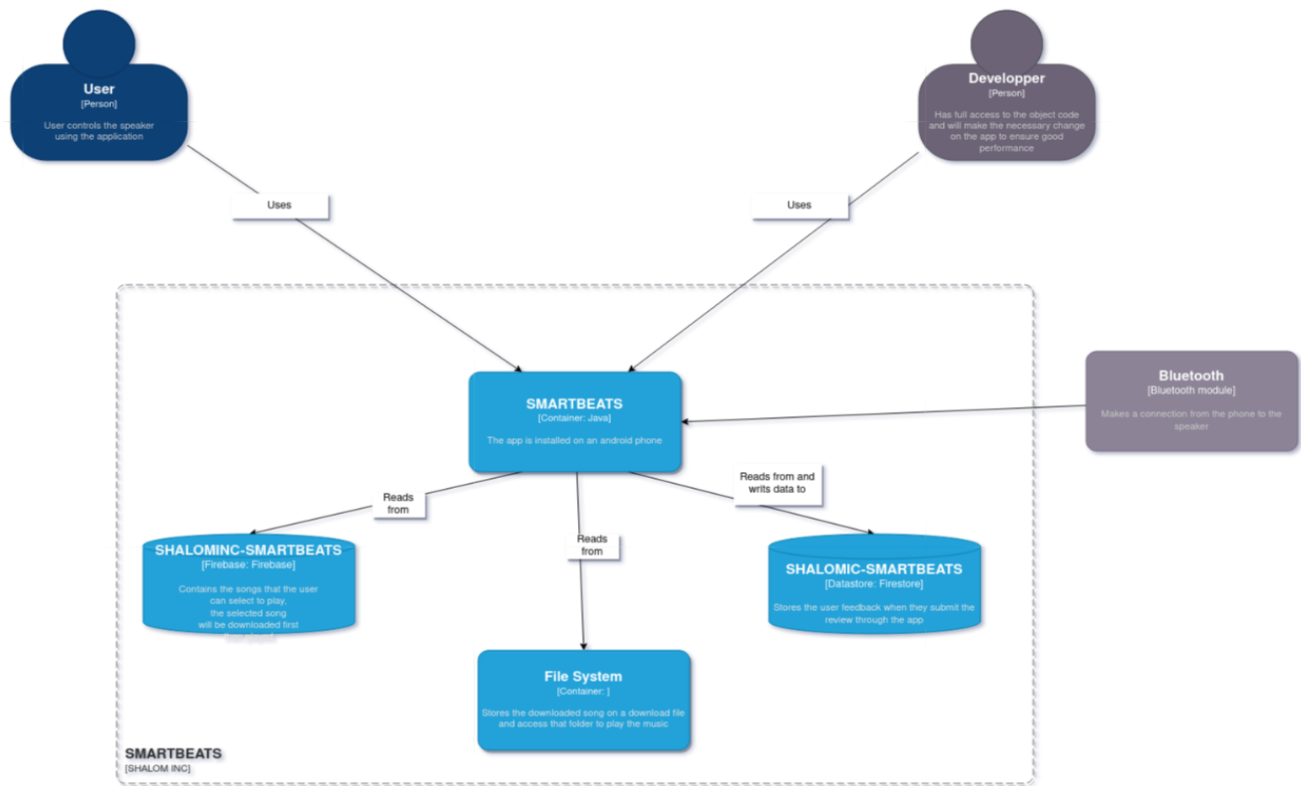
Sprint goal 3:
Adding a Review fragment

- Creating interface for the user enter their info for feedback
- Send the user values to the database
- Error checking for all the edittexts of user values
- Create an notification pop up
- Adding rating bar with stars for providing feedback

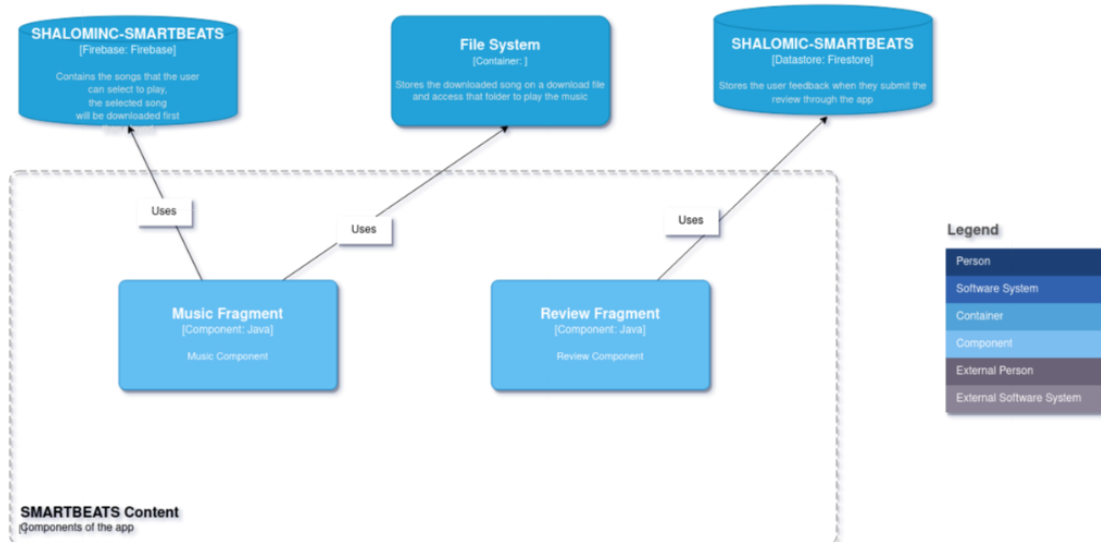
C4 Diagram Model



Level 1 Context Diagram



Level2 Container Diagram



Level3 Component Diagram

Google Play Submission, Review Proof and App Link:

The screenshot displays the Google Play Console interface. On the left is a navigation menu with categories: Release, Testing, Reach and devices, and Setup. The 'Production' option under the 'Release' category is selected. The main content area is titled 'Production' and includes a 'Create new release' button. Below this is a 'Track summary' section showing the app's status as 'Active', 'Release 2 in review', and '176 countries / regions'. The 'Releases' section lists two releases: '2' and '1.0', both of which are 'In review' and have '1 version code'. Each release has a 'View release details' link. The user's profile 'SmartBeats' is visible in the top right corner.

Google Play Console

Search Play Console

SmartBeats

Production

Create new release

Learn more Dismiss

Track summary

Active • Release 2 in review • 176 countries / regions • 0 installs • Temporary app name 'ca.shalominc.it.smartbeats (unreviewed)' ?

Release dashboard Releases Countries / regions

Releases

2 View release details

In review • 1 version code

Show summary

1.0 View release details

In review • 1 version code

Show summary

Release

Releases overview

Production

Testing

Open testing

Closed testing

Internal testing

Pre-registration

Pre-launch report

Reach and devices

App bundle explorer

Setup

App integrity

Internal app sharing

Advanced settings

Offline Mode Features:

- Allows users to use a stopwatch to automatically turn off music when the timer runs out.
- Allows users to play one default built in song in offline mode through the media player.
- Connect to bluetooth devices such as a bluetooth speaker and play songs
- Night mode switch to change the apps theme from light mode to dark mode.
- Portrait mode switch allows the user to keep the device in portrait orientation.
- About us and privacy policy buttons display information about the developers and the apps security policy.

Runtime Permissions Used and Implemented:

```
<uses-permission android:name="android.permission.BLUETOOTH" />  
<uses-permission android:name="android.permission.BLUETOOTH_ADMIN" />  
<uses-permission android:name="android.permission.BLUETOOTH_CONNECT" />
```

The three permissions listed above are simply accessible through our apps menu bar. Can be accessed by clicking on the top right corner there will be three dots (...) from there you select "Bluetooth" it will prompt the user to disagree or agree to continue. From there it will ask to allow or deny the bluetooth regardless of the device it is run on. Verification is also done here as a toast is prompted whether you agree to enable it or not it will let you know if the process is done so.

Sprints (Stories, Theme and Epics):

SMARTBEATS

Last seen Invite / 1 Activity + Add to board

This board will help you manage your team's work schedule. Assign due dates and add timelines so everyone on the team gets work done on time, every time. Switch to Calendar view or integrate with Google calendar to clearly see all upcoming dates and deadlines.

Main Tab...

Calend...

Car...

Timek...

Ga...

+ Add View

Integrate

Automate

New Item

Search

Person

Filter

Sort

Sprint 1 (Sept 29th - Oct 11th) Epic: Make a color selector

AssignedStatusStart DateEnd Date

For the user's convenience, a color picker/wheel is set up so that the user can change the LED light to their own liking, rather than remembering the rgb code numbers.

Assigned6Done

A slider to adjust brightness and dimness of the lights.

Assigned5Done

The LEDs will flash with the sync of the music. This will set up the mood depending on how the user wants it (workout mode, party mode, zen mode etc).

Assigned5Done

+ Add

Sprint 2 (Oct 25th - Nov 14th) Epic: Add a music selector

AssignedStatusStart DateEnd Date

The user should be able to make a selection of their music, either from their phone or from the provided list from the cloud.

Assigned5Done

The user can set up a timer, the duration the speaker can play and will turn off automatically.

Assigned5Done

Rather than having the user control the music (play, pause, next, previous) on the speaker, they can control from the application itself, through the interface or through voice command.

Assigned5Done

+ Add

Sprint 3 (Oct 25th - Nov 14th) Epic: Make a review fragment

AssignedStatusStart DateEnd Date

The user can provide feedback of the product and app through the review

Assigned5Done

The feedback is sent to a realtime database

Assigned5Done

The three buttons submit, read and reset must be adhered to their respective functionality

Assigned5Done

Making sure the UX of the fragment is completed

Assigned5Done

+ Add

Sprint 4 (Nov 21th - Dec 6th) Epic: User settings

AssignedStatusStart DateEnd Date

Add a button that enables tutorial for the user if they skipped the tutorial when first launched

Video

XL

Completed

Use the sharedPrefs to check whether the user has gone through the tutorial before and if not then launch the ...

Bhargav

S

Completed

Give a FAQ if possible, based on the feedback

M

Completed

Use OnboardingSupportFragment to do the tutorial part if either the app is opened for the first time or the user ...

L

Completed

Set up the animation to point and show the purpose of the objects in lights fragment

L

Completed

+ Add Subitem

User wants to know how to control music

Assigned5Completed

Subitems

OwnerSizeStatusStart DateEnd Date

Add a button that enables tutorial for the user if they skipped the tutorial when first launched

Video

XL

Completed

Use the sharedPrefs to check whether the user has gone through the tutorial before and if not then launch the ...

Bhargav

S

Completed

Give a FAQ if possible, based on the feedback

M

Completed

Use OnboardingSupportFragment to do the tutorial part if either the app is opened for the first time or the user ...

L

Completed

Set up the animation to point and show the purpose of the objects in music fragment

L

Completed

+ Add Subitem

User can change the background color/theme of the app to their preference

Assigned5Done

Subitems

OwnerSizeStatusStart DateEnd Date

Add a switch button that gives the user the option to change to night mode.

Ripal

XL

Done

Dec 3

Dec 4

A toast will be shown when night mode is enabled

Ripal

S

Done

Dec 5

Dec 5

On every click on the button, the theme color of the app changes

Vidhi

XL

Completed

Create 5 different themes, including the default theme

Vidhi

XL

Completed

The changed theme should be applied and can be changed only when the user presses the button again

Ripal

S

Completed

+ Add Subitem

User wants to download the selected songs

Assigned5Done

Subitems

OwnerSizeStatusStart DateEnd Date

Selected song from spinner will be saved to the default downloads folder

Bhargav

L

Done

Nov 3

Nov 3

Show notification that the song has been downloaded

Nicholas

S

Done

Set a limit of how many Mbs the app is allowed to use to store the songs

L

Completed

The songs are by default saved on the internal storage

Nicholas

XL

Done

Nov 12

Nov 13

Get the required permission to access the storage

Nicholas

XL

Completed

+ Add Subitem

+ Add

Post - Mortem Project Review Meeting:

Post-Mortem, Project Review Meeting

Performance

Overall the performance of our application matches user satisfaction. Everything went well on our app. In terms of cost performance, we launched our app recently so the earned value is not enough as the team is planning to launch adds so our app gets viral. In terms of schedule for final project team planned the meeting every two days and spent 45 mins upto hour to make notes. In terms of quality of our application, my team gave their best to meet all the requirements and the quality of our app was determined by testing it and is easily accessible for the users.

Did the team members involved manage their time wisely?

Yes, each and every team member managed their time wisely for the completion of the project. Each of us set the goals, prioritize it, give it a time limit, organized it, cut off non-essential tasks and planned for the future.

Were there issues with the quality or compromises along the way?

- We encountered difficulty with the emulator functioning after updating Android Studio with ArctixFox; the emulator was lagging for each member, thus some of us had to run the app on actual devices
- Making test cases gave us hard time and the team could not figure out one test case which is Roboelectric Test case
- Music note on Top bar made app crash in other fragments so the team had to remove the music note from top bar in other fragments except Music fragment.
- Preference Screen for settings were giving us hard time as we could not even change the background colour or make the landscape layout so we have to switch to normal xml file instead of preference xml file.

To summarise, with the exception of the one test scenario indicated above, the team was able to overcome all obstacles and issues. The team also had to make a compromise with the settings fragment because it did not work out as expected. However, the programme is functioning as intended by the developers, with no crashes or issues.

Lessons learned, mistakes, and area of improvements.

- We made the mistake of not keeping up with stories on Monday.com, and most of our jobs were cancelled since the team had fresh ideas that were realised but were not publicised on Monday.com.
- When two persons were working on the same file at the same time, and the repository was merged, our code was occasionally erased. So the solution we came up with was to notify the team and alert them every time an individual commits and pushes to avoid file merging.

Who attended and who missed the meeting?

- Each and every member of the team attended the meeting. The team occasionally had conflicts and debates on a few topics, which were decided by voting after considering each team member's perspective and opinions.
- Setting a time restriction for each meeting of up to an hour or more and allowing each member 10-15 minutes to speak. If the discussion escalates, pause or stop the meeting.
- Ensuring the team follows the agenda, keeping the discussion constructive, taking notes of issues and solutions and sending out the questionnaire to remind where we stand in completion of project.

Success criteria

The success criteria for overall app we build the code, tested it multiple times, learned from the mistakes, meeting all the deliverables requirement, offering the best quality to clients, ease of the use of application and of course team cooperation.

Technical Debt:

- **Unavoidable technical debt**

We were not able to meet the requirements that we planned in the starting of this project. Since we already planned the functionality of the application and how we wanted it to work, there was no sufficient time for our plan to be executed. Henceforth, new scrums were added for the Monday scrum dashboard.

- **Unintentional technical debt**

Arctic fox compatibility issue since we updated it to the latest version of android studio. We were forced to test on physical devices for better performances than emulators.

Robolectric Unit testing caused an unknown error asking to use shadowOf and even after using those it was not working. Also tried changing the version for robolectric to compile in older versions which concluded in more unknown errors.

Areas of Refactoring:

Android Manifest:

- Removed Permissions that were not needed

Main Activity:

- Refactored code with music button for menu bar now checks network availability and only allows users to enable it when an internet connection is present.

MusicFragment:

- Changed default track to be playable offline locally from device
- Prompts users with a customized snackbar depending on what file they chose to download from the spinner list.

LightsFragment:

- Checks if an internet connection and bluetooth connection is present to enable the set button.

SettingsFragment:

Refactored entire settings fragment

- Added night mode switch
- Made Portrait mode button into a switch
- Added privacy policy activity and layout for a privacy policy button page
- Added about us activity and layout for a about us button page

Areas of Refactoring Con't:

ReviewFragment:

- Removed read button
- Changed output for device model number to screen and just programmatically sends it to the database along with the review
- Created a notification class to create a popup notification when a successful review has been sent to the database.
- Checks if an internet connection is present to enable the send button.

Suggestions for Instructor:

It was great having you as our professor this semester. A suggestion is to communicate more with the hardware professor as it seemed like there were less connections between both hardware and software professors. Another suggestion is to give extensions to students if required because some deliverables felt like it needed more time to work then the usual given time depending on the requirements of the deliverable.