How to Use this Template

1. Make a copy [File → Make a copy...]
2. Rename this file: “**Capstone_Stage1**”
3. Replace the text in green

Submission Instructions

1. After you’ve completed all the sections, download this document as a PDF [File → Download as PDF]
2. Create a new GitHub repo for the capstone. Name it “**Capstone Project**”
3. Add this document to your repo. Make sure it’s named “**Capstone_Stage1.pdf**”

GitHub Username: sDurgam

Android Challenge Tracker

Description

This app is targeted for users interested in learning Android development. The app lists some java and android exercises for users to solve. This app also allows users to add new questions which will be reviewed by other users and can be added to the challenge once reviewed and approved by more than 3 people.

Intended User

Students or professionals who are interested in learning Android development and know how to set up Android Studio

Features

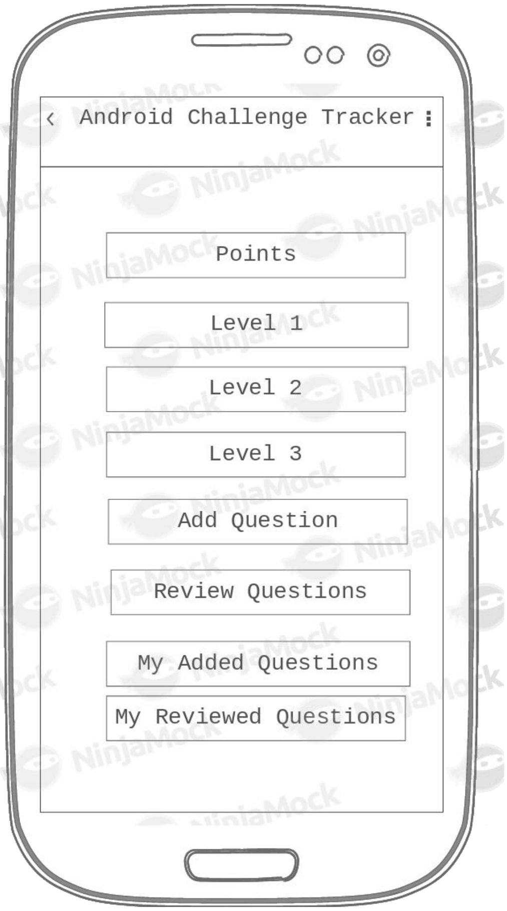
- Tracker to track Android development progress
- Learn Android development by finishing small tasks and mark them as complete once you finish the task
- Add new Android questions for other users. Also review questions posted by other users

User Interface Mocks

These can be created by hand (take a photo of your drawings and insert them in this flow), or using a program like Photoshop or Balsamiq.

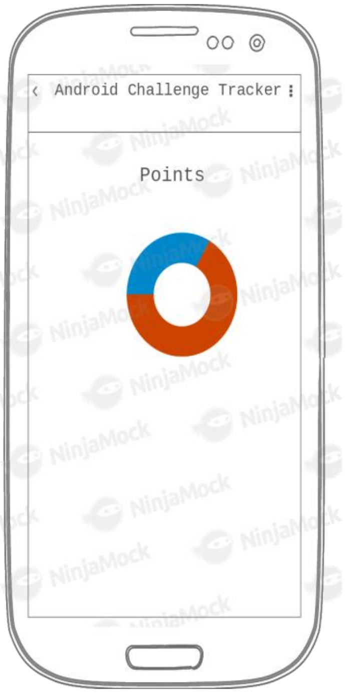
Screens 1 – 11 are for mobile
Screens 12 – 17 are for tablets

Screen 1



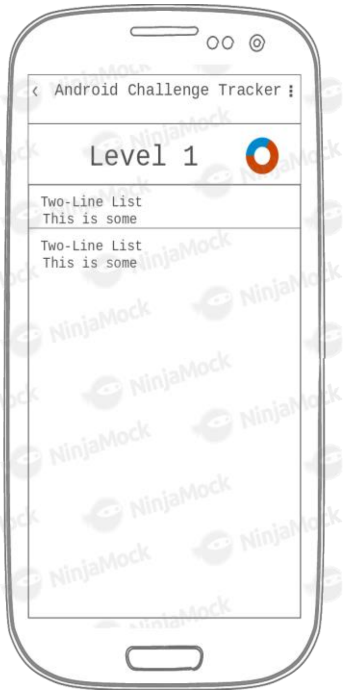
The above screen will be displayed in navigation drawer on mobile. I will attach separate design for tablets.

Screen 2



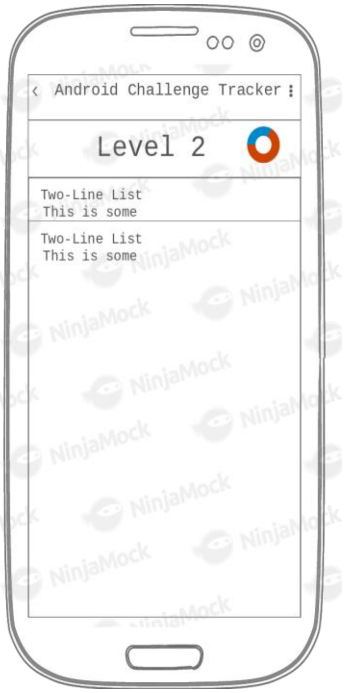
This is the first screen displayed to the user on mobile along with navigation drawer. This screen displays the progress of the user in this challenge.

Screen 3



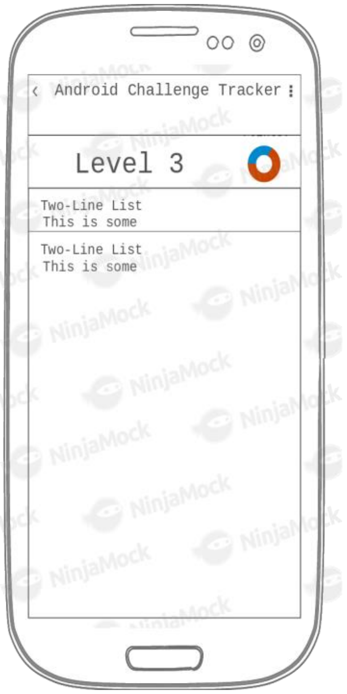
This screen is displayed when user clicks on Level 1 button displayed within navigation drawer. This screen displays questions to the user in Level 1.

Screen 4



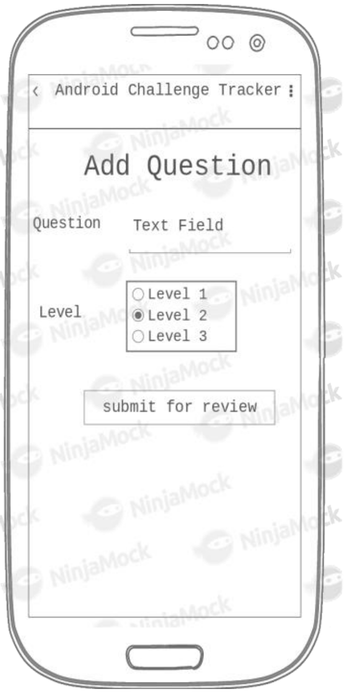
This screen is displayed when user clicks on Level 2 button displayed within navigation drawer. This screen displays questions to the user in Level 2.

Screen 5



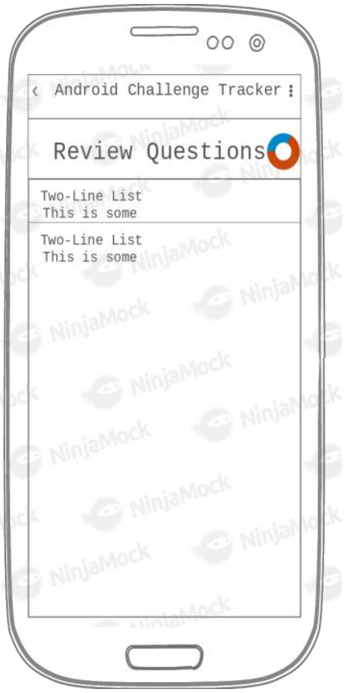
This screen is displayed when user clicks on Level 3 button displayed within navigation drawer. This screen displays questions to the user in Level 3.

Screen 6



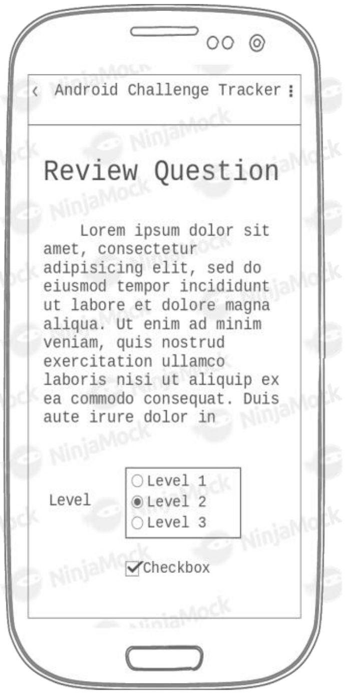
This screen is displayed when user clicks on ‘Add Question’ button displayed within navigation drawer. The user can add a new question to the tracker to any level. It will be displayed to all the users using this app once this question is reviewed by some other user. User gains 10 points for adding level 1 question, 20 points for adding level 2 question and 30 points for adding level 3 questions once the questions is approved. A question is displayed in the tracker once it is approved by at least 3 reviewers.

Screen 7



This screen is displayed when user clicks on ‘Review Questions’ button displayed within navigation drawer. The user can review questions added by some other user to the tracker. User gains 2 points for reviewing level 1 question, 3 points for reviewing level 2 question and 5 points for reviewing level 3 questions.

Screen 8



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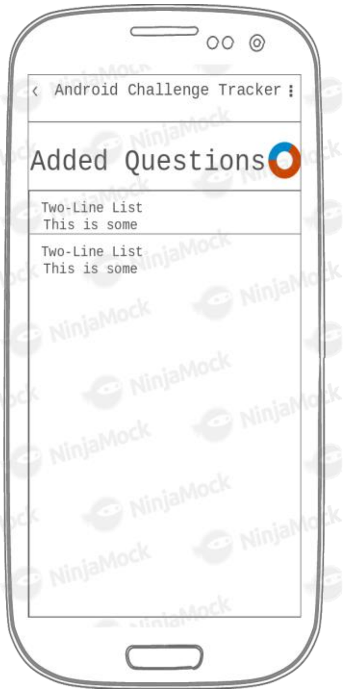
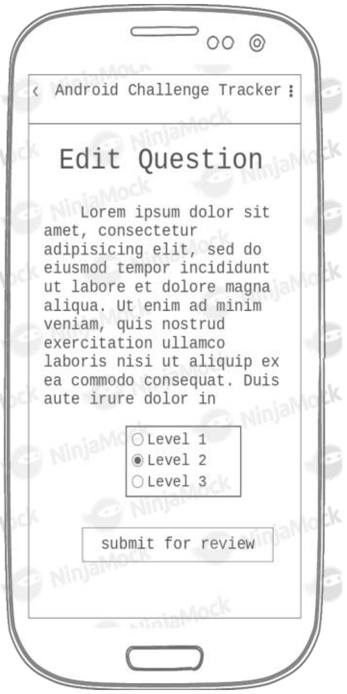
This screen is displayed to the user when user clicks on any question displayed in 'Review Questions' screen (screen 7). User has an option to approve or not approve the question.

Screen 9



This screen is displayed to the user when user clicks on 'Added Questions' option displayed in the navigation drawer. This screen lists all the questions added by the user to this tracker.

Screen 10



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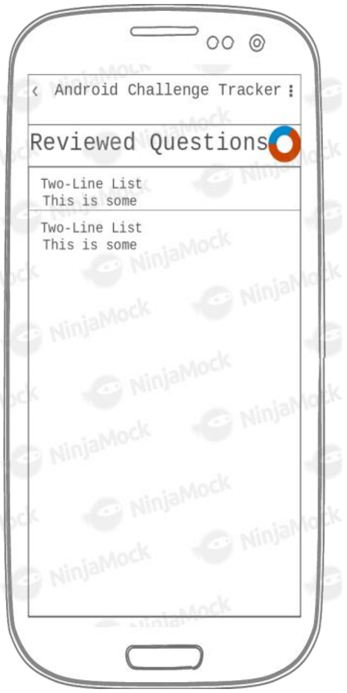
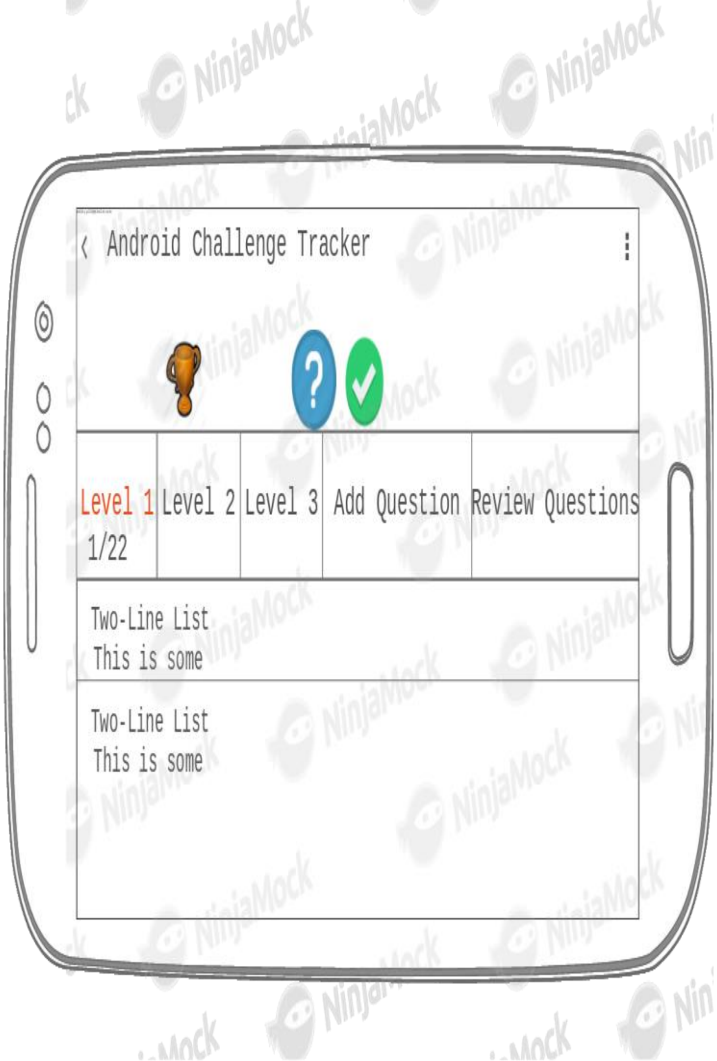
This screen is displayed to the user when user clicks on any any question listed in the ‘Added Questions’ screen (screen 9 above). The user can edit this question. This edited question is again subject to review.

Screen 11



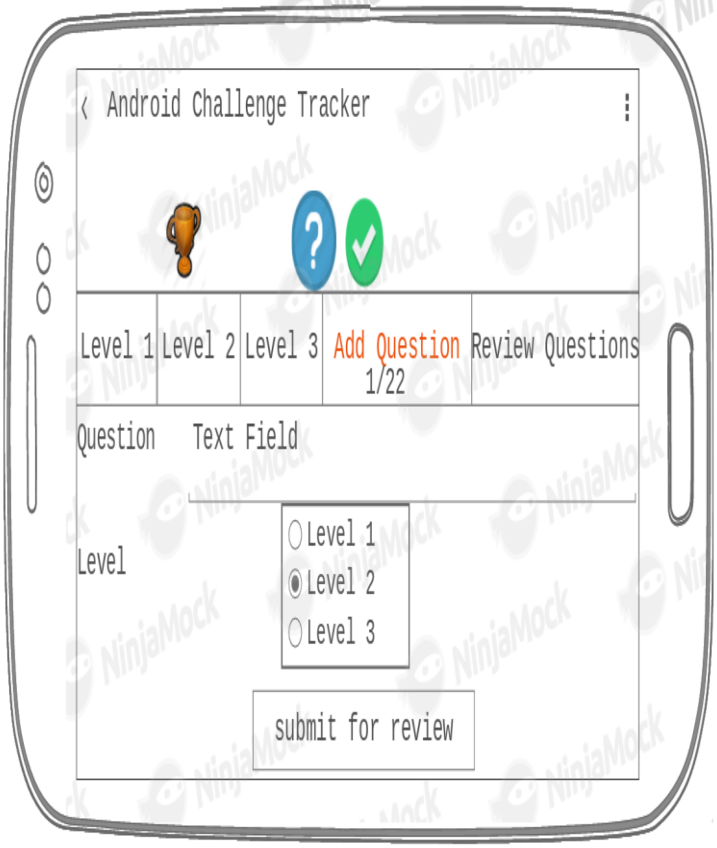
This screen is displays list of questions reviewed by the user when user clicks on Reviewed Questions button displayed in the navigation drawer in screen 1.When clicked on any question in this section the user will see the same screen screen8.

Screen 12



This is the home screen for tablets. Level1,Level2,Level3,Add Question and Review Question are the titles of a tab layout. Three icons are displayed in the toolbar – Points, My Added Questions and My Reviewed Questions

Screen 13

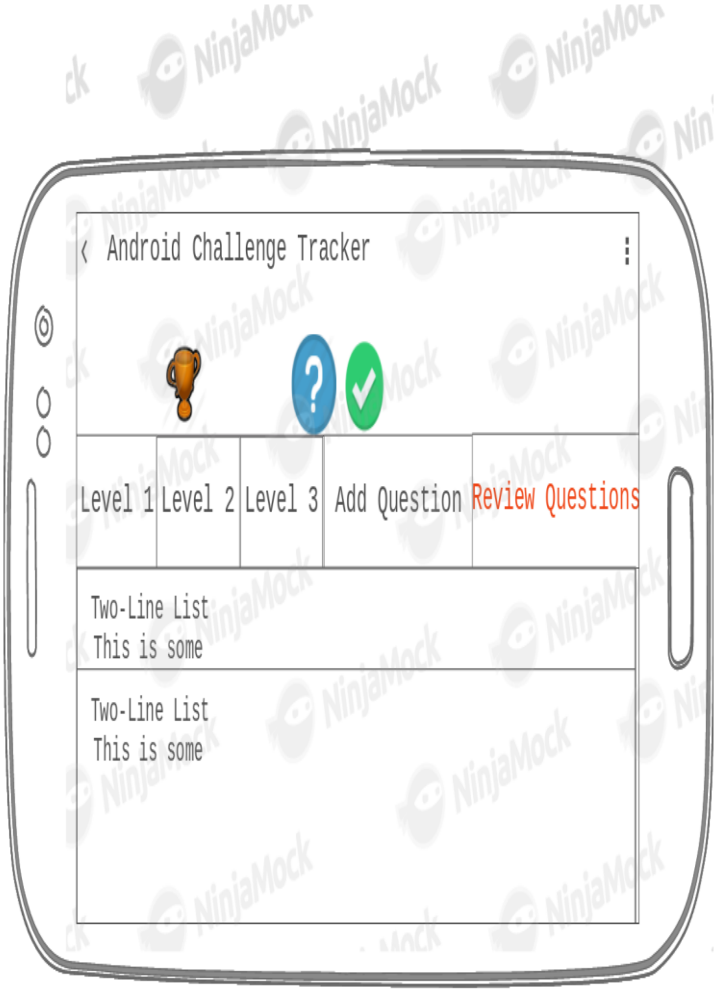


Question Text Field

Level
○ Level 1
● Level 2
○ Level 3

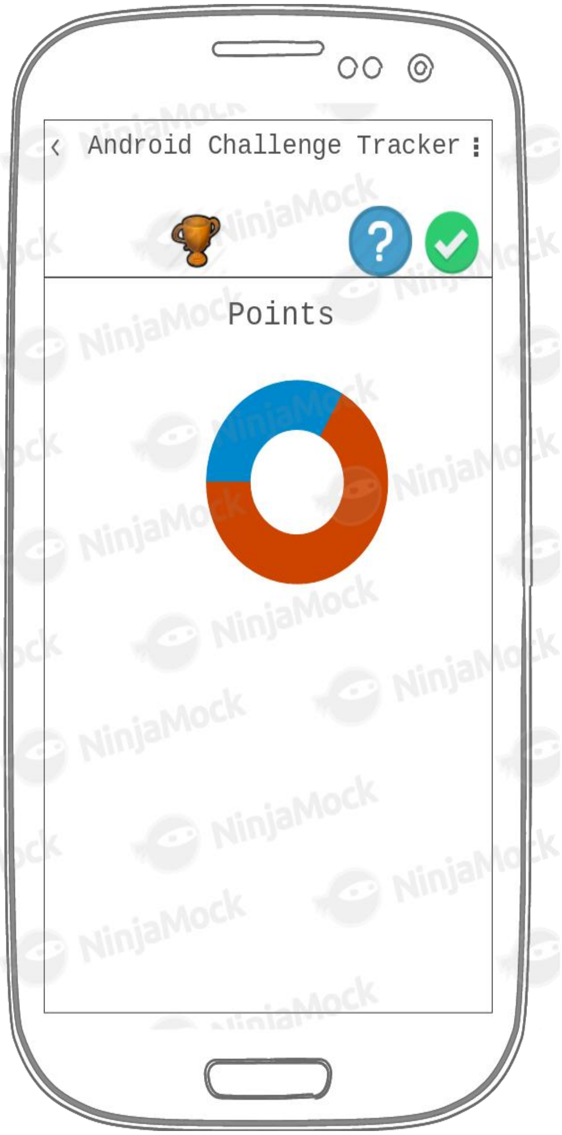
When clicked on any title displayed in the tab layout the respective screen is displayed to the user. In this screen, user is displayed a screen where user can add a new question to the tracker.

Screen 14



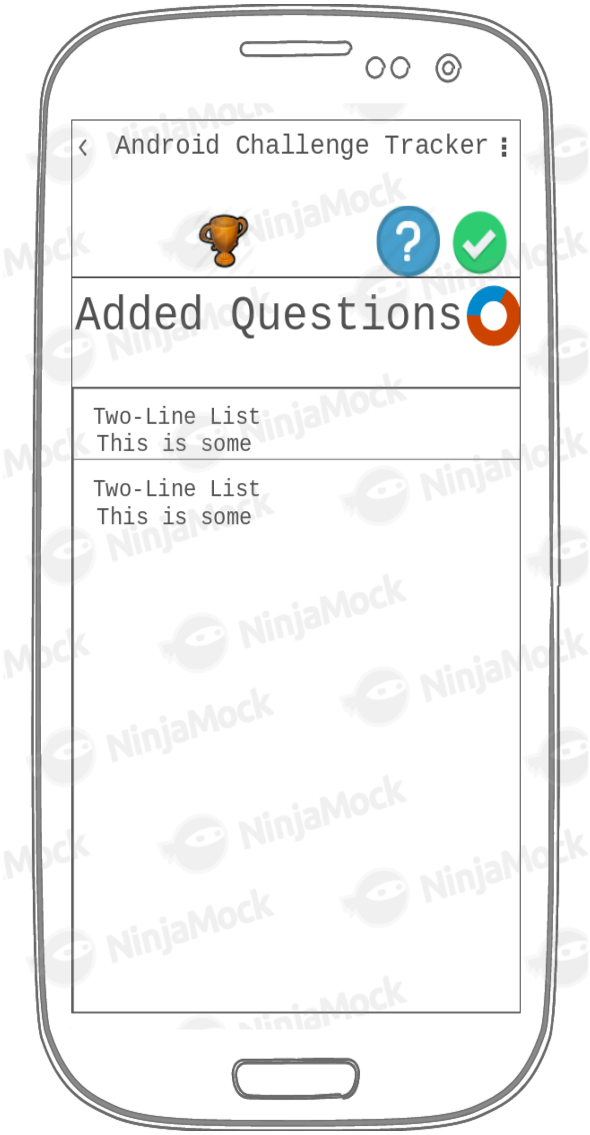
In this screen, user is displayed a screen where user can see a list of questions available for review.

Screen 15



The user is displayed ‘Points’ screen when clicked on this icon on tablets.

Screen 16



Android Challenge Tracker ⋮

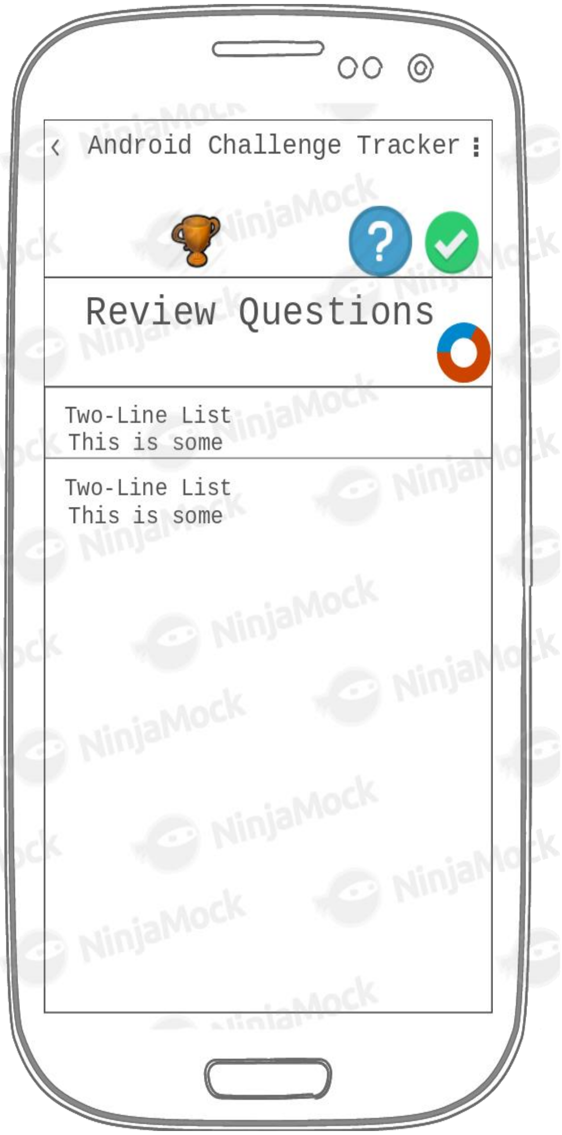
Added Questions

Two-Line List
This is some

Two-Line List
This is some

The user is displayed ‘Points’ screen when clicked on this icon on tablets.

Screen 17



‹ Android Challenge Tracker ⋮

Review Questions

Two-Line List
This is some

Two-Line List
This is some

The user is displayed ‘Points’ screen when clicked on this icon ✓ on tablets.

Add as many screens as you need to portray your app’s UI flow.

Key Considerations

•How will your app handle data persistence?

I will build a Content Provider that automatically gets synced when new questions are added to the tracker. I will keep latest 100 questions for each level in local data base using content provider.

•Describe any corner cases in the UX.

- Display appropriate error messages or off line messages to the user in Snackbar
- On phone user can use navigation drawer displayed in screen 1 to navigate through different options listed in the drawer. Back button by default takes to the home screen except for two cases
  case 1 : when user clicks back button on 'Edit Question' section it will take them to 'Added Questions'
  case 2: when user clicks back button on 'Review Question' section it will take them to 'Review Questions' section

•Describe any libraries you'll be using and share your reasoning for including them.

•I will use Butterknife library for readability, to reduce the number of lines to code
•I will use retrofit for making api calls to fetch latest questions in each category. I will primarily use retrofit for the following:

- To fetch latest questions and update the content provider automatically.
- To fetch new questions as user scrolls through the list of questions for any level.

•Describe how you will implement Google Play Services.

Firebase UI for Authentication, Firebase Database to store questions and analytics to track users

Next Steps: Required Tasks

This is the section where you can take the main features of your app (declared above) and decompose them into tangible technical tasks that you can complete incrementally until you have a finished app.

Task 1: Project Setup

- Create Android project
- Add firebase and retrofit dependencies
- Add Butterknife framework to the project
- Add framework for content provider, syncadapter and loaders within the project

Task 2: Implement UI for Each Activity and Fragment

- Build UI for HomeActivity
- HomeActivity will have navigation drawer and points screen for mobiles
- HomeActivity will be a tab layout with Level1 as the first tab

- Build Level1Fragment, Level2Fragment, Level3Fragment, PointsFragment, AddQuestionFragment, ReviewQuestionFragment, MyAddedQuestionsFragment, MyReviewedQuestionsFragment
- Add unit test cases to the project

Task 3: Design database schema

- Design database schema for the app
- Design the required tables, attributes and relationships between tables for the database

Task 4: Set up database and login using Firebase

- Set up firebase database for the app
- Set up firebase login for the app
- Integrate firebase in the project
- Add unit test cases to the project

Task 5: Integrate Firebase within the application

- Add Firebase dependencies
- Add api calls to make calls to fetch relevant data from firebase db
- Add unit test cases to the project

Task 6: Add communication between content provider and Firebase

- Add communication between content provider and Firebase
- Add communication between syncadapter and content provider
- Display relevant data to the user using loader
- Add unit test cases to the project

Task 7: Test app for mobile device

Task 8: Test app for tablets

Task 8(optional): Add instrumentation test cases to the project

Add as many tasks as you need to complete your app.

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