

Application Report

Android mobile application development for Quizmoo survey platform

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1. Need Analysis

In order to offer more flexibility of using the Quizmoo survey platform, Disyscs decided to develop an Android mobile application based on REST¹ architecture, for that I'm charged to develop the software that allows Android Quizmoo users to:

- Login and manage session via an access token.
- Access and preview all user's surveys made on www.quizmoo.com, sorted by category and state.
- Send answers for surveys.
- Pin surveys for offline consulting.
- Share surveys in social and professional networks.

The application should handle an offline mode to answers surveys out of internet connection, all responses will be synchronized with server when internet connection is available.

The application should be adapted to various screen sizes, and work for both android mobile and tablet devices.

The Quizmoo developers' team has already prepared an API to expose the website database information. I will detail all API resources in the contract in the next chapter before defining the REST architecture and Quizmoo survey platform.

2. Quizmoo

Quizmoo is a Disyscs project, it consists of a free survey platform that offers the ability to create and deploy particular or companies questionnaires. Quizmoo can:

- Provide detailed analyses for responses

¹ Representational State Transfer

- Transform survey data into resume in Excel format
- Send surveys via mailing list or over social and professional networks
- Draw graphic charts for answers results

I. Android Development

1. Introduction

Developing a successful software for mobile is a challenge for developers due to the screen size constraints and the variety of types of users. To impress the audience by the application, mobile developer should adapt a good design offering the comfort and simplicity to the user experience, which will make customer decide to reuse the application or to put the painful work in the trash.

2. Graphic Design

a. Graphic Scheme

Colors

I choose to use the below color palette to distinguish surveys categories, I applied those colors along all application views.

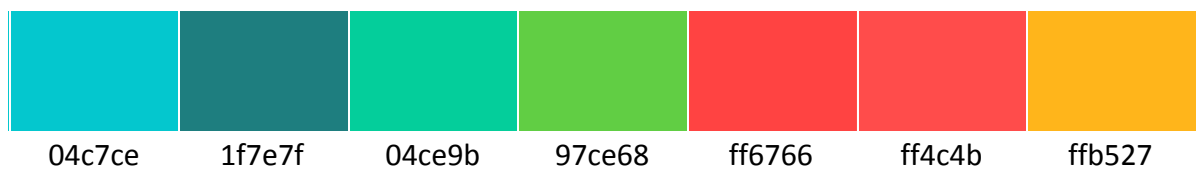


Figure 1 Android Color Scheme

Styles

I have developed a set of XML style files to add a unique style for the application with rounded corners shapes. Example of buttons with rounded corners and shadow:



Figure 2 Android Buttons Sample

Fonts

I have defined 4 font sizes using the Montserrat Regular font:

BIG TITLE **BIG TEXT** **NORMAL TEXT** **SMALL TEXT**

Figure 3 Android Text Sample

Icons Set

I duplicated all icons used in divers screen sizes, Android will choose the best screen fit icon size while runtime. Icons are downloaded from www.developers.android.com/design/

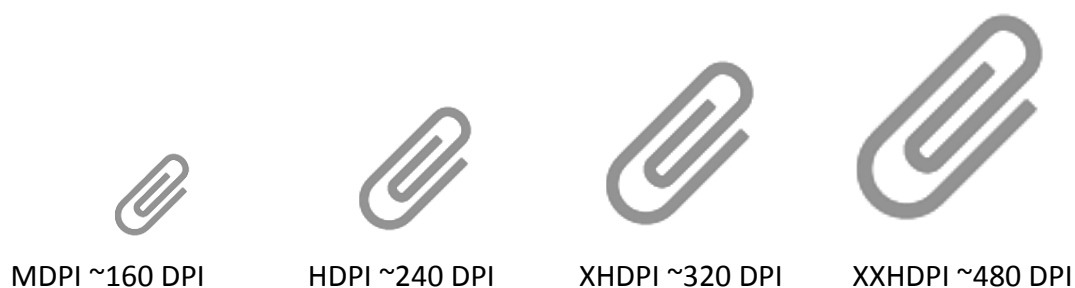


Figure 4 Different sizes icon

b. Application Structure Design

Action Bar

The action bar is a window feature that identifies the user location, and provides user actions and navigation modes. Using the action bar offers users a familiar interface across applications that the system gracefully adapts for different screen configurations.

In the first view after login I combined the fixed tabs view with the action bar to allow more screen space when it is possible



Figure 5 Action bar from the survey detail view

Fixed Tabs

Fixed tabs display top-level views concurrently and make it easy to explore and switch between them. They are always visible on the screen, and can't be moved out of the way like scrollable tabs. Fixed tabs should always allow the user to navigate between the views by swiping left or right on the content area. I used fixed tabs to sort downloaded user surveys under its three possible states: ongoing, closed, and draft.

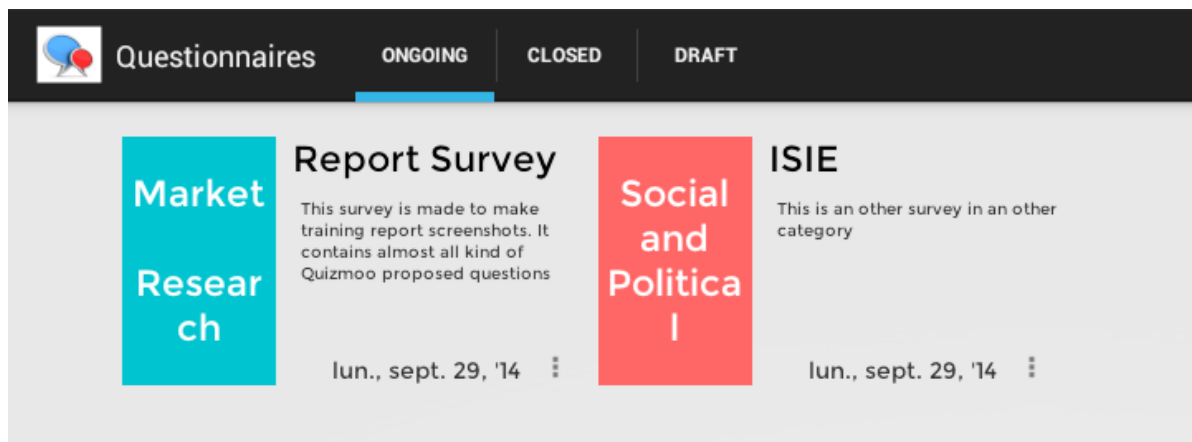


Figure 6 Tab view combined with action bar

Popup Menu

A Popup Menu displays a Menu in a modal popup window anchored to the survey item. The popup will appear below the anchor view if there is room, or above it if there is not. If the menu launcher is visible the popup will not overlap it until it is touched. Touching outside of the popup will dismiss it.

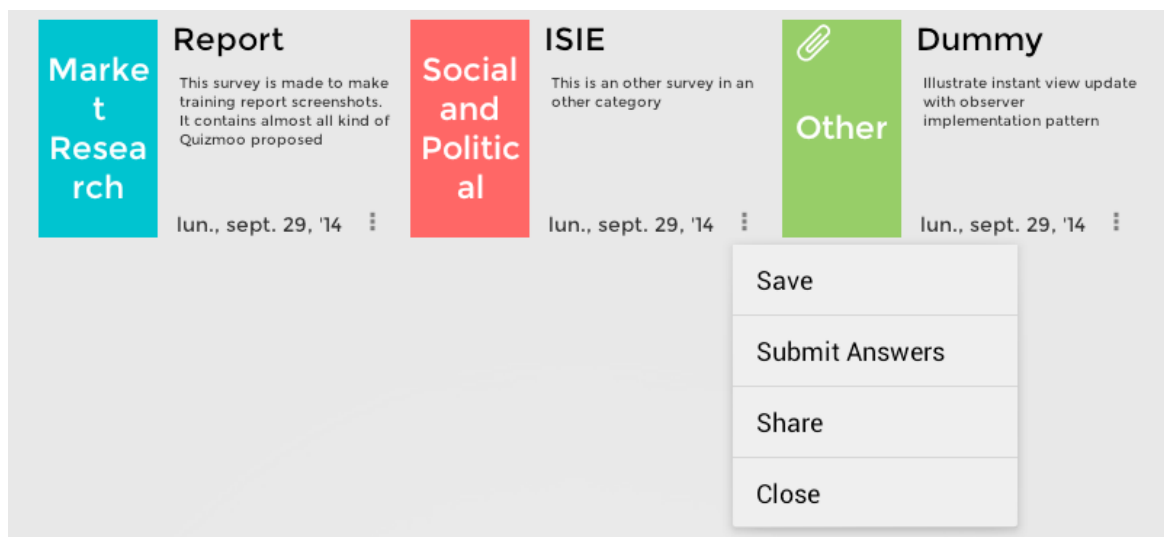


Figure 7 Popup menu command for survey

Navigation drawer and view pager linking

I used the navigation drawer which is a slide-out menu that allows users to switch between views of survey's questions. It can hold a large number of questions and is accessible from any view in the application. Navigation drawers show the application top-level views, but can also provide navigation to lower-level screens, I linked the navigation drawer with a view pager to allow user to swipe by sliding between questions, and I integrated a smooth animation to make the user feel as if it is reading a book.

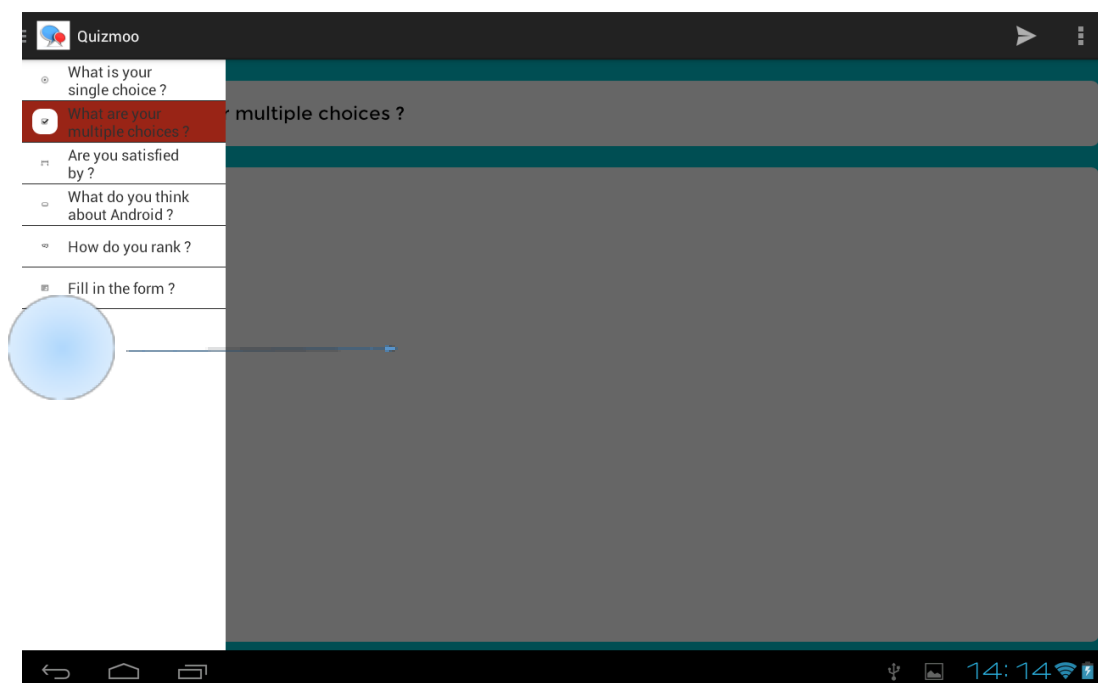


Figure 8 Navigation drawer and view pager

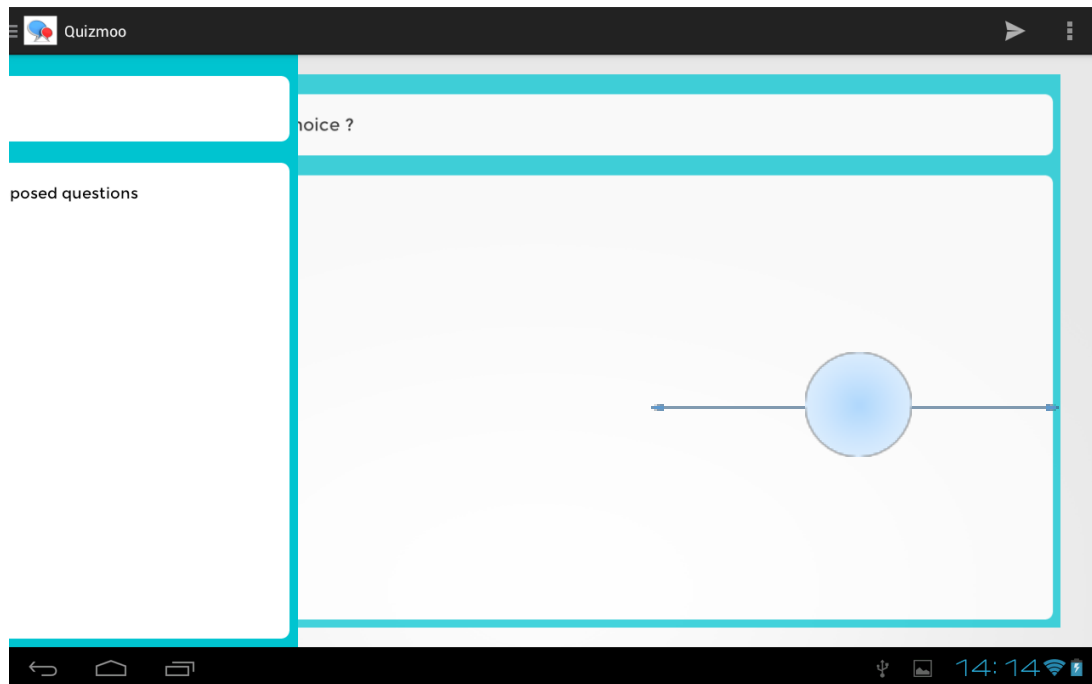


Figure 9 View Pager Smooth Sliding Animation

Question UI Building

After receiving questions list in JSON format and creating adequate instance of question from model by the QuestionFactory, each question type is assigned to a fragment that holds the specified view.

Quizmoo platform suggest many types of questions:

- Multiple choices question

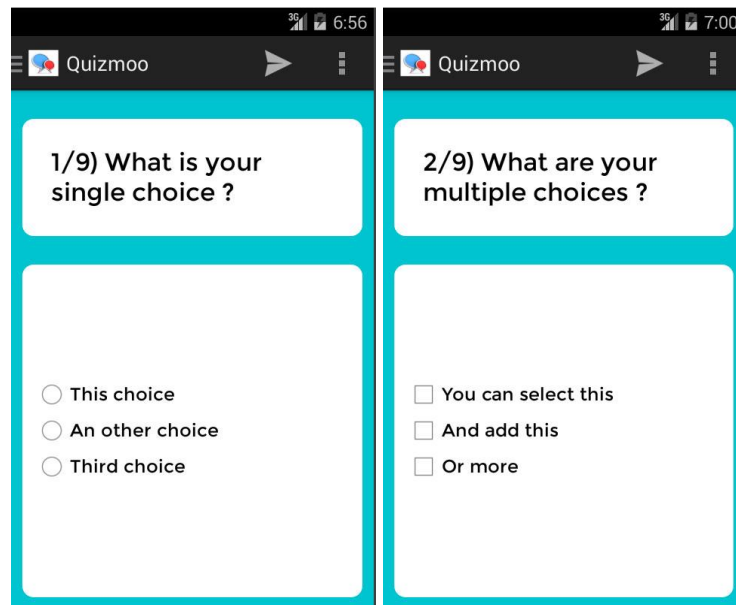


Figure 14 multiple choice with single and multiple answer

- Select field question

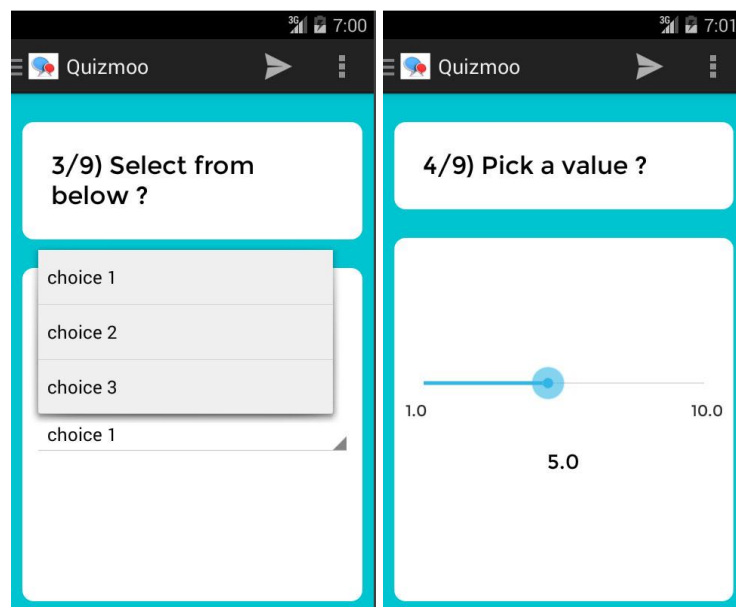


Figure 15 select field question list and numeric type

- Rating scale question

5/9) Are you satisfied by ?

Design ☐ ☐ ☐ ☒ ☐

Features ☐ ☐ ☐ ☒ ☐

Quizmoo ☐ ☐ ☐ ☐ ☒

Not satisfied at all Meh Almost satisfied Very satisfied

Figure 16 rating scale question

- Text box question

6/9) What do you think about Android ?

Write your answer here

9/9) Fill in the form ?

First name :

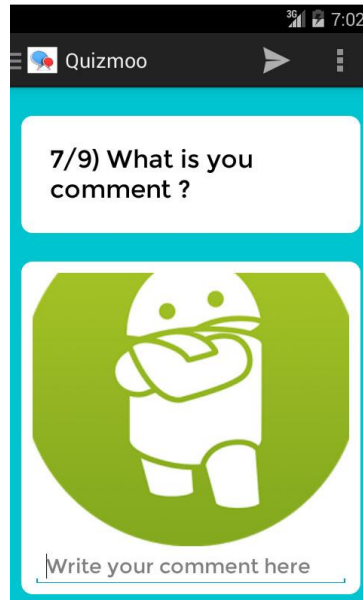
Last name :

Age :

Profession:

Figure 17 Text box in single and multiple mode

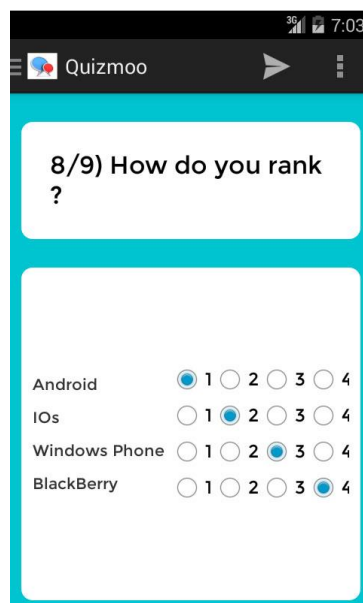
- Picture comment question



The screenshot shows a mobile app interface with a black header bar containing the 'Quizmoo' logo and a right arrow. Below the header, a white box contains the question '7/9) What is you comment ?'. Underneath the question is a large green circle containing a white cartoon character of a person with their hand on their chin, appearing to be in deep thought. At the bottom of the green circle is a white text input field with the placeholder text 'Write your comment here'.

Figure 18 pictorial question

- Ranking question



The screenshot shows a mobile app interface with a black header bar containing the 'Quizmoo' logo and a right arrow. Below the header, a white box contains the question '8/9) How do you rank ?'. Underneath the question is a white box containing a ranking question. The question lists four operating systems: Android, IOs, Windows Phone, and BlackBerry. Each operating system has a set of four radio buttons labeled 1, 2, 3, and 4. The radio buttons for Android are labeled 1, 2, 3, 4. The radio buttons for IOs are labeled 1, 2, 3, 4. The radio buttons for Windows Phone are labeled 1, 2, 3, 4. The radio buttons for BlackBerry are labeled 1, 2, 3, 4. The radio button for '1' under Android is selected. The radio button for '2' under IOs is selected. The radio button for '3' under Windows Phone is selected. The radio button for '4' under BlackBerry is selected.

Figure 19 ranking question

