

Mobile Application Development – Assignment: Travel Guide Mobile Application

Introduction:

Your coursework assignment is to design then develop a travel guide application. In the first (design) part, you will design the user interfaces of your application, which is worth 30% of the overall mark. In the second (development) part, you will create a working mobile application that corresponds to your designs. You need to submit a native Android app.

Design Part

Firstly, find and read a selection of at least 5 sources relevant to mobile user interface design and create an annotated bibliography: this is simply a list of useful sources you found where each has an associated paragraph summarizing why the source is useful i.e. what information it provides that can help you create a high-quality usable mobile interface. Try to find a range of high-quality sources such as guidelines published by reputable sources, research papers, journal papers, book chapters, books, etc. Use the Harvard Referencing Style for your citations and bibliography.

Secondly, create UI designs for your travel guide application. These can be hand-drawn or created electronically. Create at least 4 separate screen designs (targeting phone devices, not tablets) including the following pieces of functionality:

1. Enter countries and cities
2. Viewing a list of countries,
3. Marking/Unmarking selected countries as 'favourite' (chosen by the user).
4. Viewing details for a selected country (currencies, languages, capital city, and other cities),
5. Viewing details for a selected city (population, nearest airport, and weather),
6. Adding custom notes (i.e. plain text) for a selected country,

For each of the 4 screen designs you must provide a written description of 100-200 words justifying your work i.e. explain why you have designed the UI the way you have and how this has been informed by the literature you found.

Implementation – Android Application

In this part, you will implement your interface designs in Android and access a public web-based service.

Using your UI designs from earlier in this assignment, create a native Android application, which includes the following pieces of functionality:

1. Enter details of the countries and cities
2. Viewing a list of countries,
 - o In the same view, ability to Mark/Unmark specific countries as 'favourite',
3. Viewing a list of favourite countries,

4. Selecting and viewing a country (to see currencies, languages, capital city, and other cities),
5. Viewing a list of cities (also include the name of the corresponding country for each city),
6. Selecting and viewing a city, displaying information (population, nearest airport) and live weather information accessed from a web service,
 - o In the same view, links to the city's Wikipedia page and links to the city's airport info.

You may create a standalone application with a database created inside but to achieve the highest marks in this part your application should connect to a public, web-based service (see marking scheme below) to retrieve live weather information for a given city to display.

Aim to use an actual Android phone for development if possible. You can alternatively use an emulator/AVD but note that these could slow down your development.

Advanced Solution

An advanced solution would support adding custom notes (i.e. plain text) for a selected country, and show careful consideration of the screen layout and UI layout, and make effective use of the Android UI components to produce a simple and intuitive application.

For retrieving live weather data, you can use any open, web-based weather service you want (as long as it can be used for the demo and marking). For instance, you can try '*openweathermap.org*'. Its usage is as follows: <http://api.openweathermap.org/data/2.5/weather?q=Beijing&appid=<your-id-here>> where the parameter 'q=a-city-name' (after the question mark) indicates the desired city and the 'appid' is used to identify the developer (you can get your own *appid* by registering for free at: http://home.openweathermap.org/users/sign_up).

You can find more details about how to use a live web service (such as the Open Weather Map) and how to parse JSON data in the corresponding worksheet.

Submission

You need to submit the following through the portal

- 1) Android Studio project folder in a .zip archive
- 2) User interface design research documentation
- 3) User interface designs

You will be assessed through a presentation of your designs and demonstration of your mobile implementation.

Assessment Criteria

To attain a given level, you should normally have achieved all the preceding levels. The variation in the mark for a level will depend on how well you have done things (e.g. the quality of the user interface, evidence of bugs/problems during the demo).

Design Part Criteria	Max
<ul style="list-style-type: none"> Created at least four designs conforming to the assignment specification each with an associated written description and presentation given. 	0-10%
<ul style="list-style-type: none"> Included appropriate description of 100-200 words for each design and relevant discussed in presentation, annotated bibliography with 5 appropriate sources created. 	11-20%
<ul style="list-style-type: none"> Considered usability issues in the designs and referred to the 5 relevant sources from the annotated bibliography in the design presentation. 	21-30%
<ul style="list-style-type: none"> Created highly usable designs informed by relevant academic literature sources, mature consideration of sources in annotated bibliography, articulate and objective presentation given. 	31-40%

Android Implementation Criteria	Max
<ul style="list-style-type: none"> Native Android app with at least 4 layouts implemented, working correctly and demonstrated. Correspondence between designs and implementation discussed. During the demonstration the app runs successfully without any serious bugs. 	0-10%
<ul style="list-style-type: none"> App allows viewing of a list of 10 countries and 5 cities for each country. App allows viewing a selected country or city, with all the details included in the database (including list of cities for country, and corresponding country for city). While viewing a city, a button is provided to link directly to the city's Wikipedia page and its airport's map. Runs successfully without any serious bugs. Implementation details discussed. Navigation within the app's activities is according to the guidelines. 	11-20%
<ul style="list-style-type: none"> App allows setting of 'favourite' countries (implemented using a custom ListView or similar), which must be consistent every time the app runs and makes use of multiple Activities (e.g. one for <u>all</u> countries and one for <u>favourite only</u>). Implementation shows appropriate use and organization of UI components. 	21-30%
<ul style="list-style-type: none"> High levels of usability for a mobile phone device provided—e.g. lists shows up sorted by country name or area or population etc., the soft keyboard opens up when it is needed and closes automatically when it is not, etc. App connects to an online weather service (such as openweathermap.org) and retrieves live data, which is displayed for the selected city. Implementation details discussed competently. 	31-40%
<ul style="list-style-type: none"> Weather data displayed for selected city includes graphics (e.g. an umbrella for rainy weather, a sun for sunny weather etc.) Created an Android application, which is of high, professional-grade quality, with advanced features implemented to a high standard. 	41-50%

Individual Evaluation	Max
▪ Demonstrating the i=understanding the complete application design and implantation	0-10%