UI

function

5COSC005W MOBILE APPLICATION DEVELOPMENT - Assignment 2

Description

You are required to implement an Android application described by the speciﬁcations below.

You are not allowed to use any third-party libraries with the only exception of the IBM Watson Cloud classes services mentioned in this document. The only other libraries that you can use are the standard Android API libraries found in the following URL:

https://developer.android.com/reference/

It is important to follow exactly the speciﬁcations and your implementation must conform to these:

The application developed will help the user learn and practice diﬀerent foreign languages.

1. When the application starts, it presents the user with 5 buttons labelled Add Phrases, Display Phrases, Edit Phrases, Language Subscription, and Translate. (3 marks)

2. Clicking on the Add Phrases button, it should display to the user a page where the user can create and save English words and phrases. The page should contain 1 textbox which can be used to enter a single word (or a single phrase). For example, the user can enter the following: “Good morning” or “university”. The page should also contain a Save button which when pressed saves the word (phrase) entered in an SQLite database local to the mobile device. (12 marks)

3. Clicking on the Display Phrases button displays to the user a list of all the saved words and phrases sorted in alphabetical order (one per line) The displayed words and phrases should come from the database and they should correspond to the ones which the user created using the Add Phrases functionality in this instance of running the application or a previous instance that the application was run (i.e. the application should NOT delete any saved words/phrases when it exits and all data are persisted in the database).

If the list of words/phrases is more than one page long, it should provide scrollbars that the user can use to see all of them. (10 marks)

4. Pressing the Edit Phrases button the application should display to the user a list of all previously saved words and phrases (one per line). Next to each of them there is a radio button which the user can use to select only one word (or phrase), i.e. only one selection can be active at any point in time. A button titled Edit and a button titled Save are also present in the page together with a textbox which is initially empty. The user can select a single word (phrase) by ticking one of the radio buttons and subsequently pressing the Edit button. Once the Edit button is pressed, the selected word appears in the textbox and the user can use the textbox to change (edit) the contents of the word/phrase. If a diﬀerent radio button is selected before pressing the Save button, the contents of the textbox are updated with the newly selected word (phrase). Once the user ﬁnishes editing the contents of the textbox, he/she can press the Save button and the newly entered information will replace the selected word/phrase in the database. At the same time the current page will be updated (refresh) with the new information available in the database. (15 marks)

5. Clicking on the Language Subscription button the list of all available foreign languages found in the following web page will appear: https://cloud.ibm.com/docs/language-translator?topic=language-translator-identiﬁable-languages A tickbox next to each foreign language is also displayed (the tickboxes should initially be blank, i.e. not ticked the ﬁrst time that this application is ever run). The displayed languages should come from the database and each tickbox should only be checked if the the user has previously subscribed to the corresponding foreign language using the Language Subscription functionality. The user can check or uncheck the tickboxes and then click on a button titled Update which is also present in the page in order to subscribe or unsubscribe to the corresponding foreign language respectively. Once the button is clicked, the application updates the database with the list of foreign languages subscribed by the user. (15 marks)

6. Pressing the Translate button the user is presented with the list of words/phrases saved before in the database together with a dropdown menu and a Translate button. The dropdown menu contains the list of foreign languages that the user has previously subscribed to. After the user selects a foreign language he/she can click on a word/phrase to select it (this could be possibly indicated with a diﬀerent background/font) and subsequently click on the Translate button. The translated word/phrase should appear somewhere in the page. The translation should be made by using the IBM Cloud Watson Translator Web service as covered in the tutorials (a free account should be created ﬁrst to obtain a unique API key and a unique URL for the service): https://cloud.ibm.com/docs/services/language-translator?topic=language-translator-gettingstarted (13 marks)

7. Extend the previous (Translate) task by adding a Pronounce button in the page. Once a translation is made, the Pronounce button can be clicked and the application should speak and pronounce the translated foreign word (phrase) by using the IBM Cloud Watson TextToSpeech Web service covered in the tutorials: https://cloud.ibm.com/docs/services/text-to-speech (12 marks)

8. Optional: Extend the application so that the user can translate all the saved English phrases in a foreign language of his/her choice and save the translations in the database. Following that, the user should have an option where he/she can see all the phrases and the corresponding translations, e.g. selecting “French” displays all the saved phrases and the corresponding saved translations in French (the translations should come from the database not the Web Service so that the user can use this functionality while the device is oﬄine). The user should be able to do the same for multiple foreign languages, i.e. the application should be able to save the words/phrases stored in the database in more than one foreign languages. This option will be useful for the user to revise all of the phrases learned in a speciﬁc foreign language. (10 marks)