Homework 7

Basic Instructions:

1. In every file submitted you should place the following comments:
   a. Assignment #.
   b. File Name.
   c. Full name of all students in your group.
2. Each group should submit only one assignment. Only the group leader is supposed to submit the assignment on behalf of all the other group members.
3. Your assignment will be graded for functional requirements and efficiency of your submitted solution. You will loose points if your code is not efficient, does unnecessary processing or blocks the UI thread.
4. Please download the support files provided with this assignment and use them when implementing your project.
5. Export your Android project and create a zip file which includes all the project folder and any required libraries.
6. Submission details:
   a. Only a single group member is required to submit on moodle for each group.
   b. The file name is very important and should follow the following format:
      ## Group#_HW07.zip
   c. You should submit the assignment through Moodle: Submit the zip file.
**7. Failure to follow the above instructions will result in point deductions.**

Homework 7 (100 Points)

In this assignment you will build a simple Contacts entry app using Cordova library & Framework7. The app will enable users enter contact details and save them into Device Contacts database. In this assignment you will learn how to create and build a Cordova based app on Android, in addition to using Framework7 for the setting UI.

Important App Requirements:
1. Android SDK should be installed, the following paths should be added to you environment variable $PATH: adt-bundle/sdk/platform-tools and adt-bundle/sdk/tools.
2. Cordova library should be installed. Installation Guide (http://docs.phonegap.com/en/edge/guide_cli_index.md.html#The%20Command-Line%20Interface)
3. Install npm (sudo npm install npm -g). Note: This is a requirement for Cordova and Framework7.
4. Install gulp (`sudo npm install –g gulp` or `npm install –g —save-dev gulp`). Note: This is a requirement for Framework7.

App Description: This is a simple add to contacts app built using standard web technology (html, javascript and css). The app enables users to enter contacts details. The contact includes name, mobile number, work number, home number, birthdate, email, URL and photo. The app should be able to access mobile native features like Contacts database. This web-based app will wrapped in an Android project to enable the app access device features. You are asked to perform the steps of building an Android project to host this app. For UI, Framework7 standard library will be used. We will use one of the templates provided by
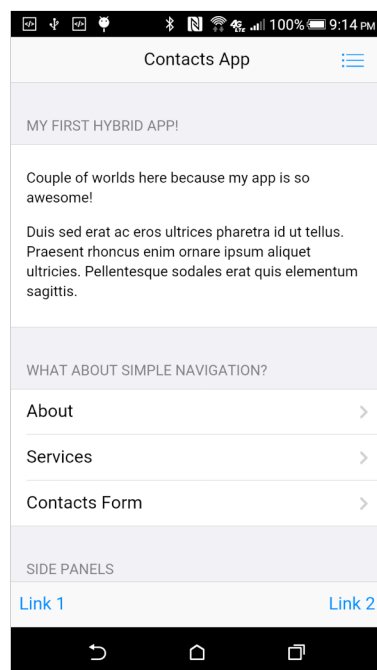
(a) Home View
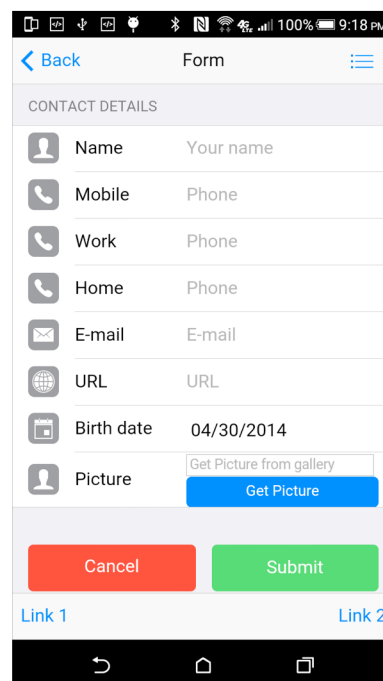
(b) Contacts Form

Figure 1: App Main Views

Framework7. The template provides many views (pages), however we will focus on 2 main views.

Home View

The initial view of the app will contain will basically contain main navigation items to different views. See Figure-1(a)

Contacts Form

As you can see in Figure-1(b), the Contact Form contains the following elements:
1. Name : Contact Display Name.
2. Mobile : Contact mobile number.
3. Work : Work telephone number.
4. Home : Home telephone number.
5. Email : contact email address
6. URL: contact homepage.
7. Picture: contact picture
8. Get Picture Button: Tapping this button will get the URI of the image saved in the gallery and places the URI in the text box as shown in the Figure 2. Please use the camera Cordova plugin to access the gallery.
   Note: To access the gallery you need to specify the the source type to be: `navigator.camera.PictureSourceType.PHOTOLIBRARY` in the `camera.getPicture()` method. To read about the camera plugin: http://docs.phonegap.com/en/edge/cordova_camera_camera.md.html#Camera
9. "Submit" Button: Tapping this button will save all the details entered by the user into Contacts database. If details were saved successfully an Alert dialog should appear indicating the result. see Figure 3(b).
   To read about contacts plugin : https://www.npmjs.com/package/cordova-plugin-contacts
10. Cancel : Returns back to the home view.
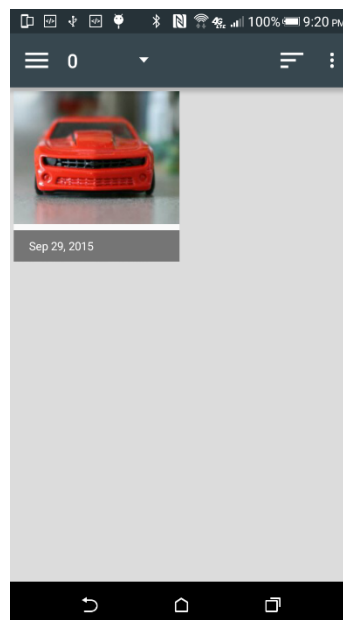
| (a) Click on Get picture | (b) Get a picture from gallery | (c) Get the URI saved in the text box |

Figure2: Saving Contact

(a) Data Entry   **(b) Saved Successfully**   **(c) Device Contacts**
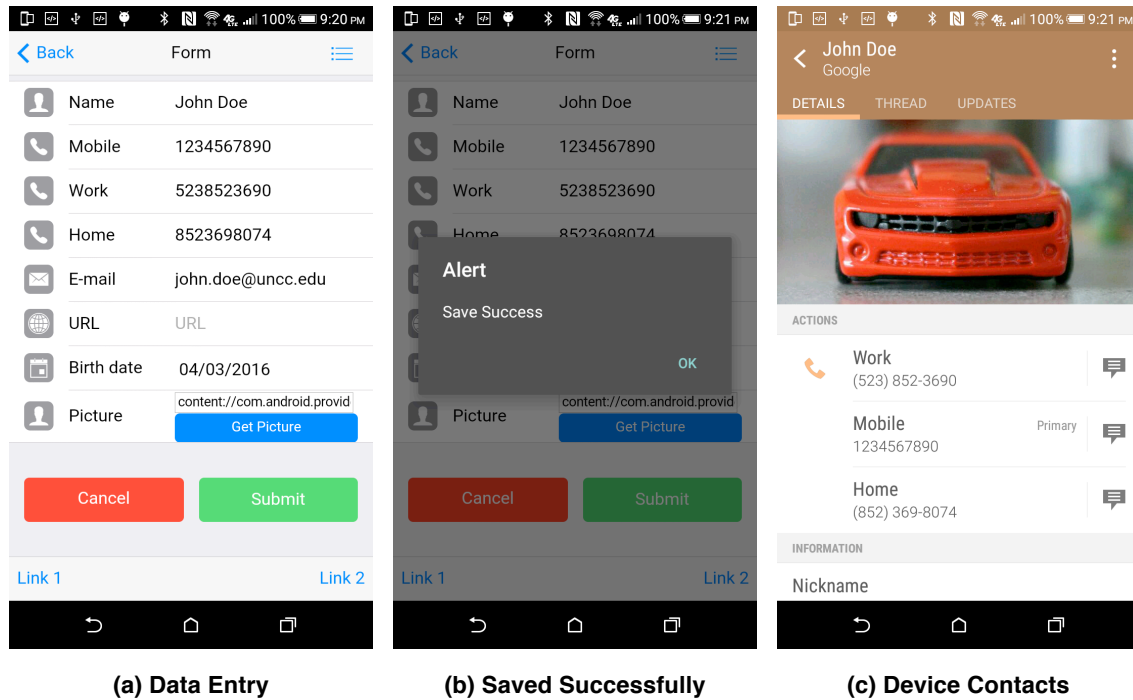
Figure 3: Save Contact workflow

Follows instructions on how to setup a Framework7 & Cordova based project.

Steps to setup UI using Framework7:
1. Download Framework-7 library :
   https://github.com/nolimits4web/Framework7/
2. In the downloaded package we need files from the dist/ folder.
3. create folder named "HybridApp"
4. Inside previous folder create folder "Framework7"
5. copy all contents from downloaded folder to "Framework7"

```
$ gulp build && gulp server
```

6. In terminal/ command line ,navigate to folder and type:
7. By default you will be redirected to http://localhost:3000/kitchen-sink/. This is the kitchen sink, consists of all the components that comes along with Framework7

Steps to create Cordova project using FW7 UI:

1. Create Project: In the same directory : /HybridApp/Framework7 ,run a

```
$ cordova create ContactsApp com.example.contactsAdd ContactsApp
```

    command such as the following:

The first argument *ContactsApp* specifies a directory to be generated for your project. The second argument *com.example.contactsAdd* provides your project with a reverse domain-style identifier. The third argument ContactsApp provides the application's display title.

2. Add Android platform : All subsequent commands need to be run within the

```
$ cd ContactsApp
```

    project's directory, or any subdirectories within its scope:

```
$ cordova platform add android
```

Now you need to add the platform, in our case Android.

3. Add needed plugins: This app will need to access native mobile features like Camera and contacts. To add this feature to the app

```
cordova plugin add cordova-plugin-camera
```

```
$ cordova plugin add cordova-plugin-contacts
```

4. copy www folder to app folder : You will be provided with www folder that contains the needed (html, javascript, css) to implement this app. copy the folder into /diary/www/.

5. Build Project : Now that you have added the platform and the www source code, build the project. This generates platform-specific code within the project's platforms subdirectory. In our case, it will build an Android project structure.

```
$ cordova build
```

6. Run Android Project : At this point, The project is ready to run as an Android app. Have your device connected or your genymotion emulator running and run the following:

```
$ cordova run
```

7. Now, the cordova project is ready and running with default web content that comes automatically with any cordova like project. To add our own web-content, we will use FW7 templates.
8. Delete the following from ContactsApp/www:
    *   css folder
    *   js folder
    *   img folder
    *   index.html
9. Copy "dist/" contents into "ContactsApp/www", make sure to keep config.xml file intact.
10. Open index.html and add the following line :

    <script type="text/javascript" src="cordova.js"></script>

11. Now your project is setup as an Android hybrid app. You can customize the template files provided and write Cordova logic to fit the App description above.
12. Note that FW7 has customized events and event handler to deal with pages:
    http://www.idangero.us/framework7/docs/pages.html#.VIIbgoSDuhI