ITIS/ITCS 5180 Mobile Application Development
Mock-up Final Exam

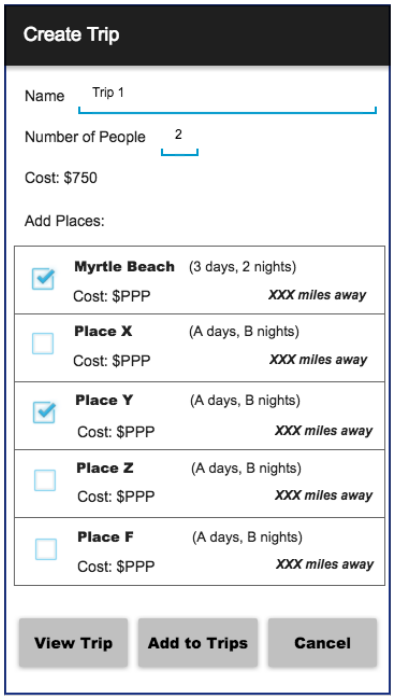
Basic Instructions:

1. In every file submitted you MUST place the following comments:
   a. Your Full Name.
   b. Your 800 number.
2. This is an individual effort. Each student is responsible for her/his own assignment and its submission.
3. Please download the support files provided and use them when implementing your project.
4. 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.
5. Export your Android project and create a zip file which includes all the project folder and any required libraries. The file name is very important and should follow the following format: **800#.zip.** Submit the exported file using the provided canvas submission link.
6. **Failure to do the above instructions will result in loss of points.**

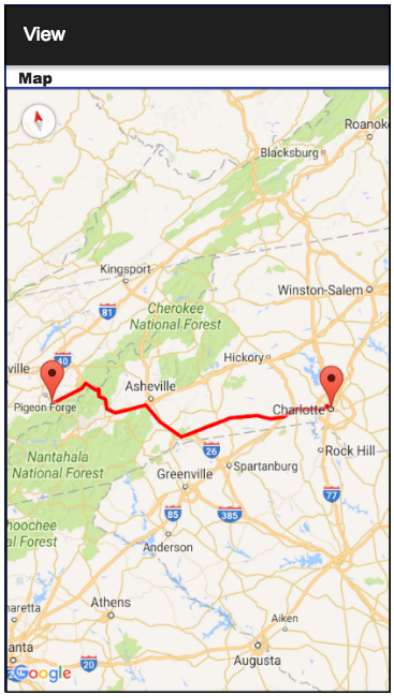
In Class 13 (100 points)

In this assignment, you will be building a Trip planner application. Please see the screen

(a) Main Screen



(b) Create Trip Screen



(c) Map to display the Trip

shots.

Setup:

1. Upload JSON file to Firebase:
   - Download Resources.zip, extract it, and find the JSON file from there.
   - Create a New Application in Firebase. Import the JSON file to the project. This will be your database to read and use.
   - Firebase contains two types of elements:
     - Deals
       - Cost
       - Duraton
       - Location: Lat & Lon
       - Place
2. Setup Firebase to store data for the app.

Screens and Functionalities:

Use Activities or Fragments to implement the screens.

1. Main screen: you need to implement the following (See figure 1 (a)):
    a. Add Action button to add a new trip. Clicking on the button should open the Create Trip screen.
    b. Sort DropDown options: Cost Low to Higher and, Cost High to Low.
    c. Each element has the Trip Name, Cost, and three icons- **map, edit, delete.**
    d. Map icon should display the roundtrip for the trip.
    e. The user should be able to edit the trip.
    f. The user should be able to delete the trip.
2. Create Trip screen: Apart from the deals, a user can create his/her own trip using the list of places in the database.
    a. Name: takes input the name of the trip.
    b. Number of people: user can decide how many people will join in the trip.
    c. Cost: dynamically calculated, the default is 0.
    d. **Cost calculation:**
        i. Find the distance from Charlotte to a selected place in miles using distanceTo(), or distanceBetween() [if using Google Map API] functions.
        ii. For each mile add USD 0.2 as the average cost per person.
        iii. Formula to calculate cost for each place: **(Cost of the deal x number of persons)**.
        iv. Add the costs of all selected places and display it in cost.
    e. List of Places: list retrieved from the database. Each element has a CheckBox, Name of the Place and calculated Distance from Charlotte.
    f. Three buttons:
        i. View Trip: It will open a screen with google map, displaying the roundtrip route for the selected places. For example, if the user selects two places, such as Asheville and Gatlinburg, the route should display: Charlotte -> Asheville -> Gatlinburg -> Charlotte.
        ii. Add to Trips: Clicking on the button should add the created trip to the Trips list.
        iii. Cancel: Cancel button returns the user to the main screen.
3. Toasts:
    a. For adding to and deleting from Trips and Wishlist.
    b. Switching between List Layout and Grid Layout.
    c. Refreshing the list in the Deals screen.
    d. Updating any item in Trip list and Wishlist.

Rubrics:

Graphical User Interface	10
Uploading JSON	5
Firebase Setup	10
RecyclerView/CardView	15
View Maps (2 screens)	25

Create Trip Screen Functions	15
Main Screen Functions	15
Toasts	5
Total	**100 points**