

mConference Framework

BuildmLearn – GSoC 2016

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1. Project Introduction

The project I wish to work on is '*mConference Framework*'. This project aims at developing an Android Framework which allows organizers to create apps for conferences and events. Using this framework, the organizers can create apps for any event, conference or meetup by creating and adding data in the configuration file (XML) from a static webpage.

2. Project Goals

➤ UI Design

- UI Design will adhere to the latest Android Material Design Guidelines by Google.
- User interfaces are designed for the different screen sizes (phone, tablet/landscape resolutions) which enables accessibility through all kinds of devices different resolutions.

➤ Web page

- A static web page will be developed where the organizer can customize content (Text, Images, Schedule of Talks, Registration Google Form Link, etc).

➤ XML Configuration file

- Modules for creating XML DOM elements from the static web page will be developed. I will be using *Vanilla JS* for creating and populating DOM elements in XML config file.

- Modules for reading and parsing the XML config file from assets folder will be developed.
- Parsing of XML file will be done asynchronously using **AsyncTask** which is an android class .

➤ Caching images and webpage

- Web links for all images that will be used in the android application will be provided by the organizers in the XML file. I will be using [Picasso](#) for downloading and cache the images.
- Sponsors web page will be cached (in case sponsor's web page link is provided).

➤ Search

- Searching of talks/events will be implemented in Schedule.

3. Implementation

➤ Web Page

- The web page will be divided into two sections :
 - Left : Complete details about conference except the talks.
 - Right : Talks details
- The details entered will be populated corresponding to the tags in XML configuration file.

mConference Framework

Conference Name

Logo

Image Link

Venue

Time

Start Time

End Time

Splash Background

Image

Details about Conference

Registration Link

Sponsors

☒ Individual Images
 ☐ Web page

Web link

Sponsor #1

Sponsor #1 Logo link

Sponsor #2

Sponsor #2 Logo link

Add more

Talk #1

Description

Start Time

End Time

Image Link

Talk #2

Description

Start Time

End Time

Image Link

Add more

Left Section

Conference Name	
Logo	Image Link
Venue	
Time	Start Time  End Time 
Splash Background	Image 
Details about Conference	▲ ▼
Registration Link	
Sponsors	☒ Individual Images ☐ Web page Web link Sponsor #1 Sponsor #1 Logo link Sponsor #2 Sponsor #2 Logo link Add more

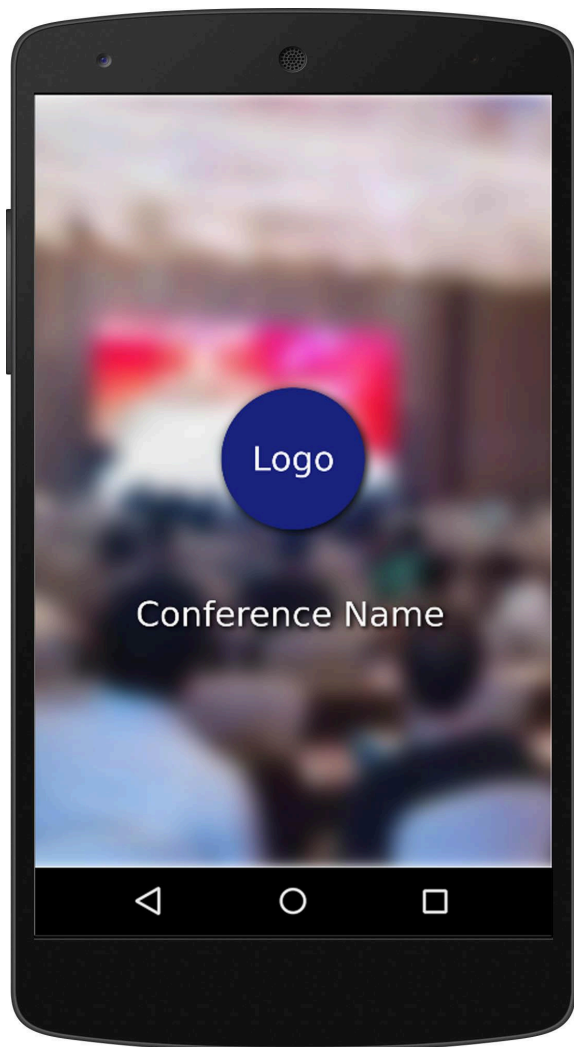
Right Section

Talk #1	Description Start Time  End Time  Image Link ▲ ▼
Talk #2	Description Start Time  End Time  Image Link ▲ ▼
 Add more	

➤ Android Application

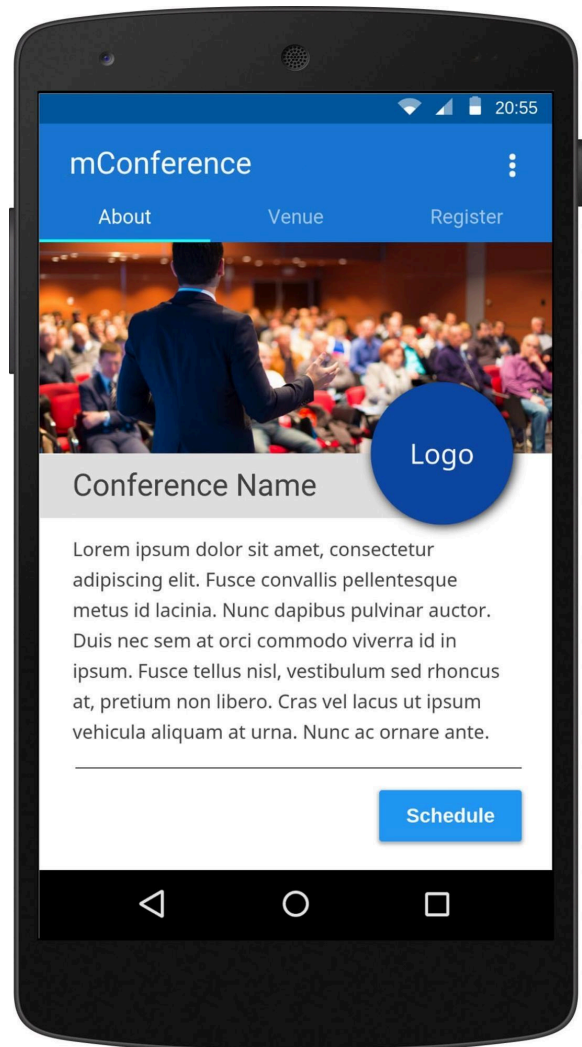
The android application will have following Activities/Fragments :

Splash Screen



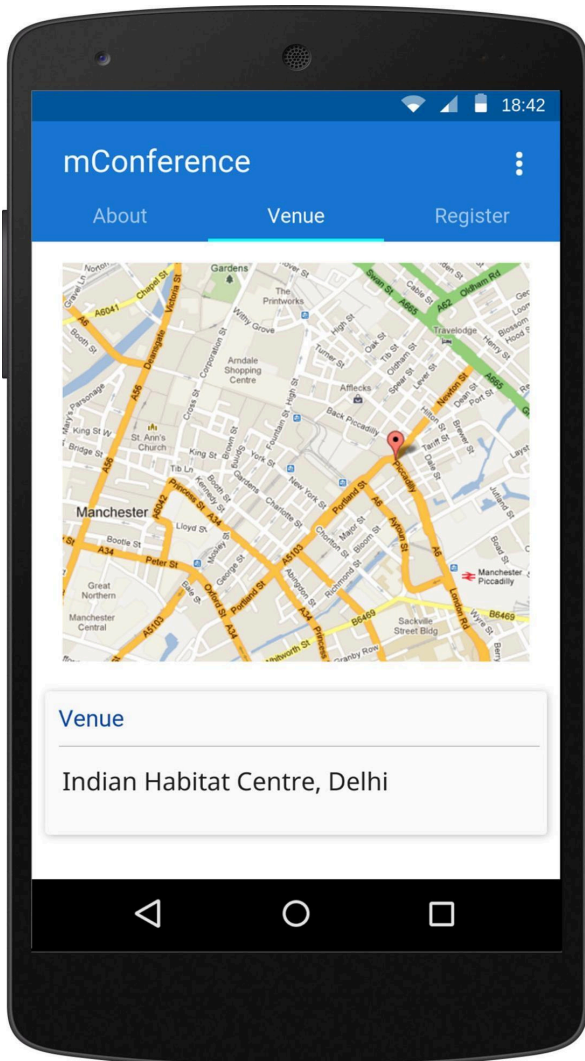
Logo and Conference name will be provided by the organizer. Splash background can be a image, color or none (White) as entered in the webpage.

About Fragment



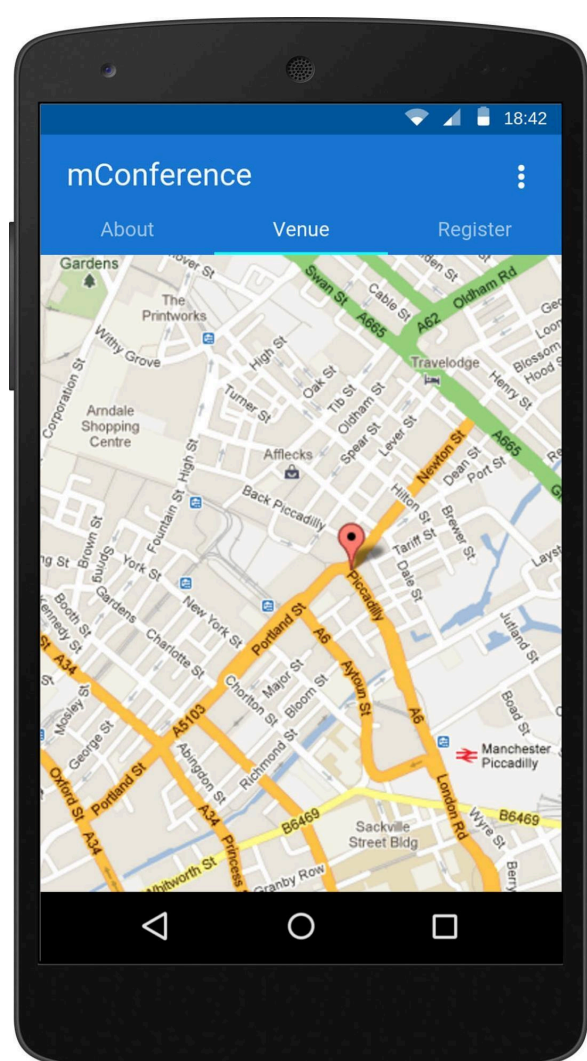
It will contain description of conference and *Schedule* button. Logo will be implemented as a non - clickable *floating button* to get the desired effect.

Venue Fragment



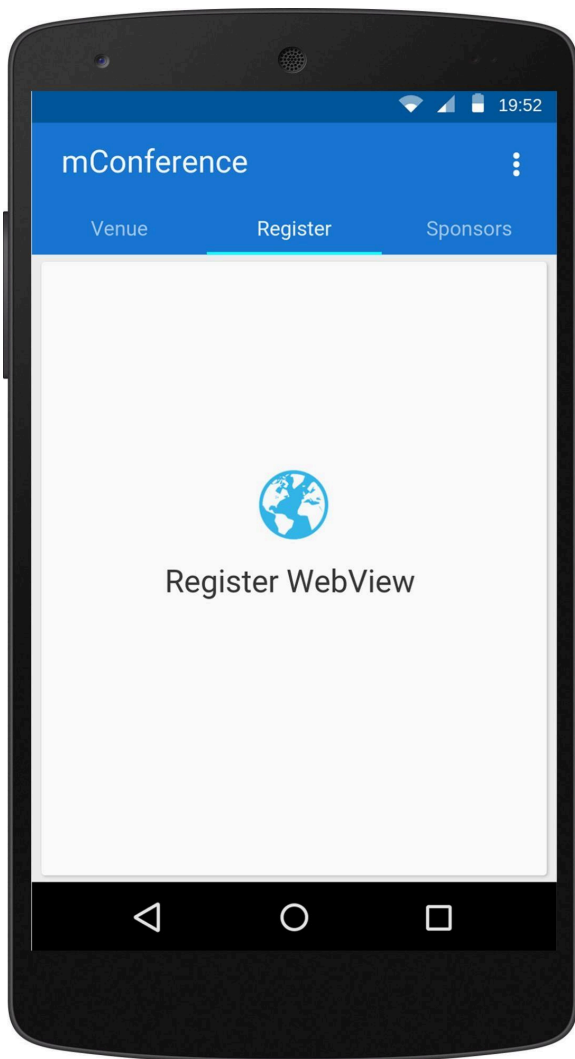
Venue fragment will have a map fragment inside it. Along with a cardview displaying venue text is placed. Organizer will enter the venue and Google geocoding API will translate it into latitude and longitude.

Venue Fragment : API level < 17



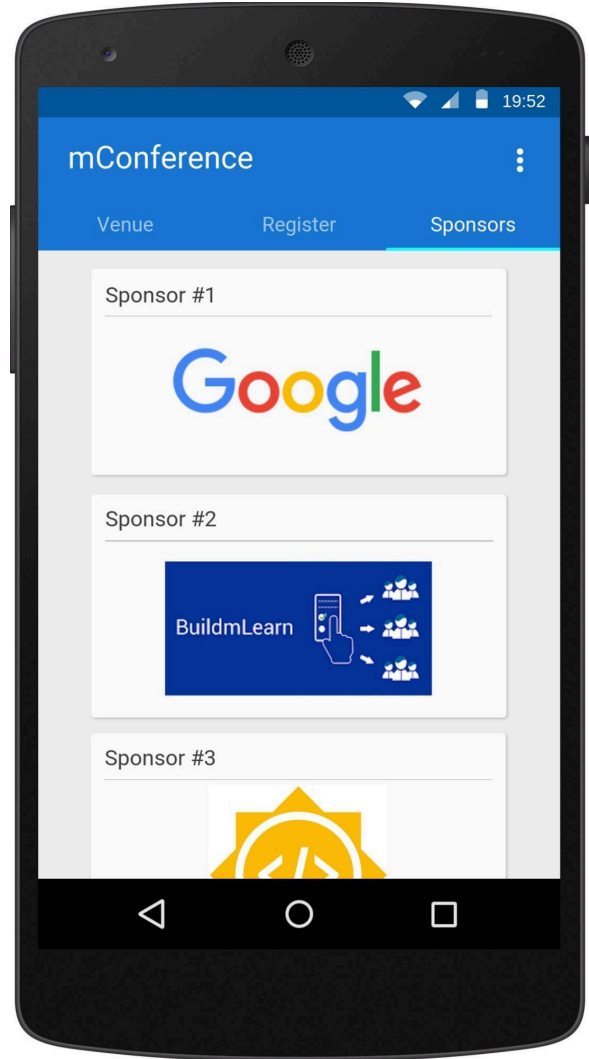
Nested fragments are not supported in Android API level less than 17 (Android 4.2). So a full google map view will be there.

Register Fragment



Register fragment will load the web link for registration provided by the organizer of the conference in a *WebView*.

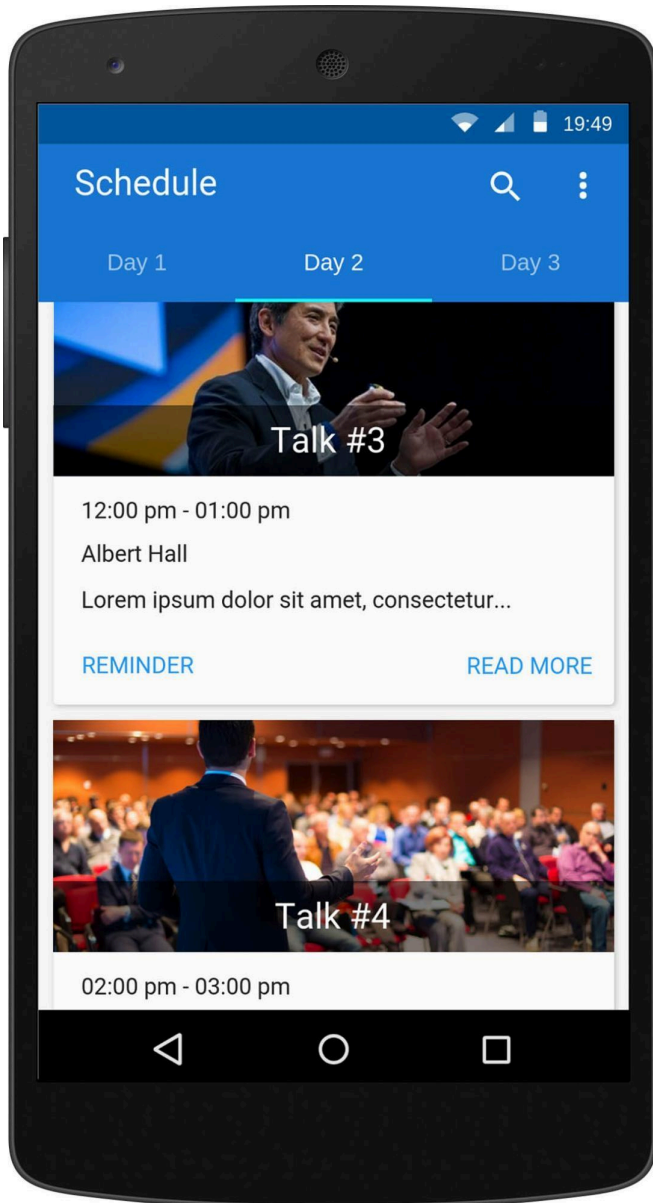
Sponsors Fragment



Sponsors fragment will have either of the two layouts as chosen by the organizer during generation of XML file :

- *WebView* if case of a web link
- Custom *CardView* (as shown above) in case of explicit entry of sponsors' details

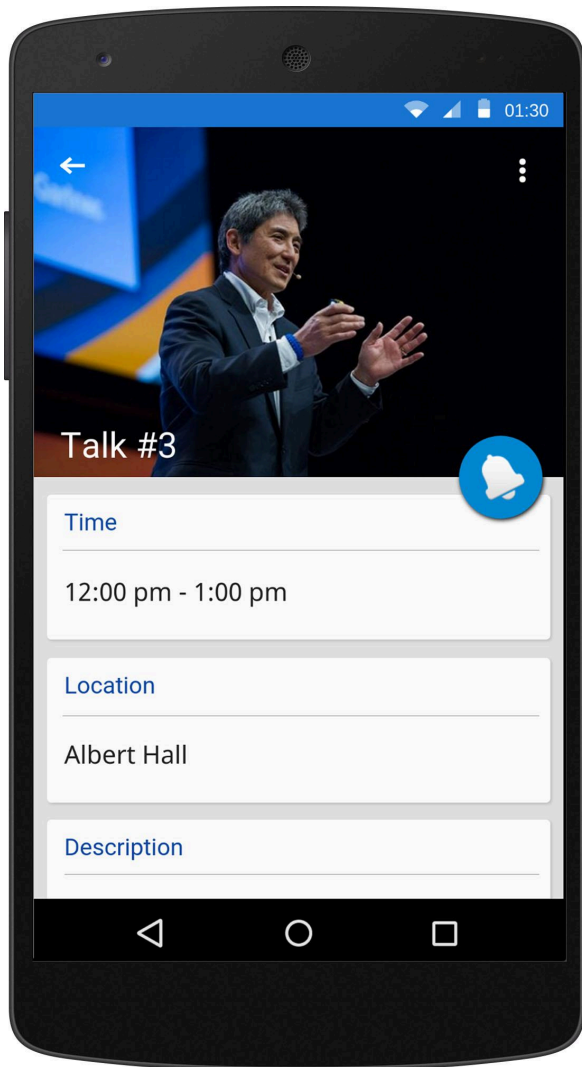
Schedule Activity



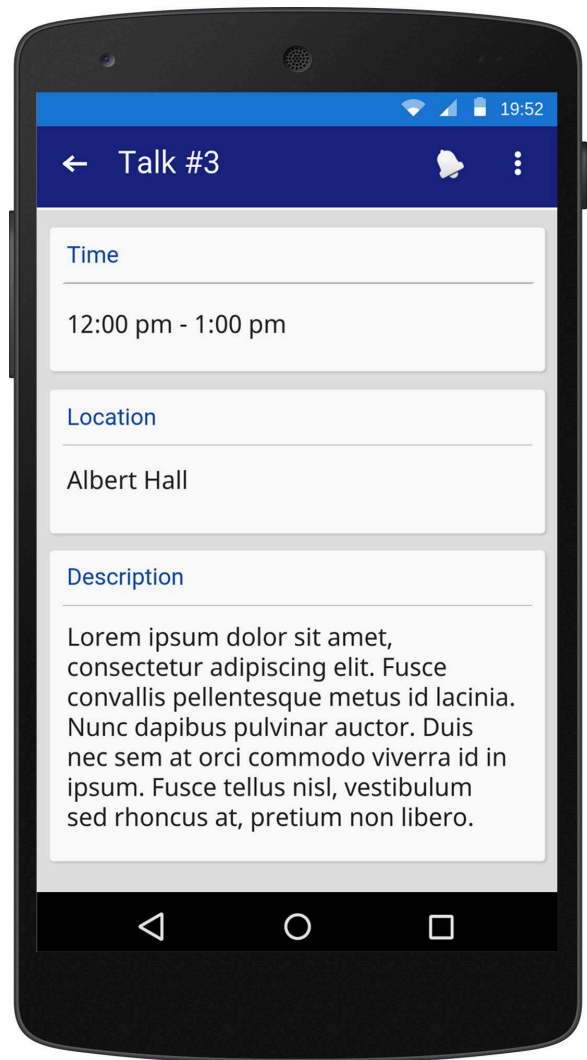
Schedule will be a separate activity.

- Swipe views for different days.
- Talks will be displayed in *CardView*
- Each card will have the Talk image
- Each card display basic info such as time, location and excerpt of description
- *Reminder* and *Read More* flat buttons.

Talk Activity



Talk Activity : Collapsed

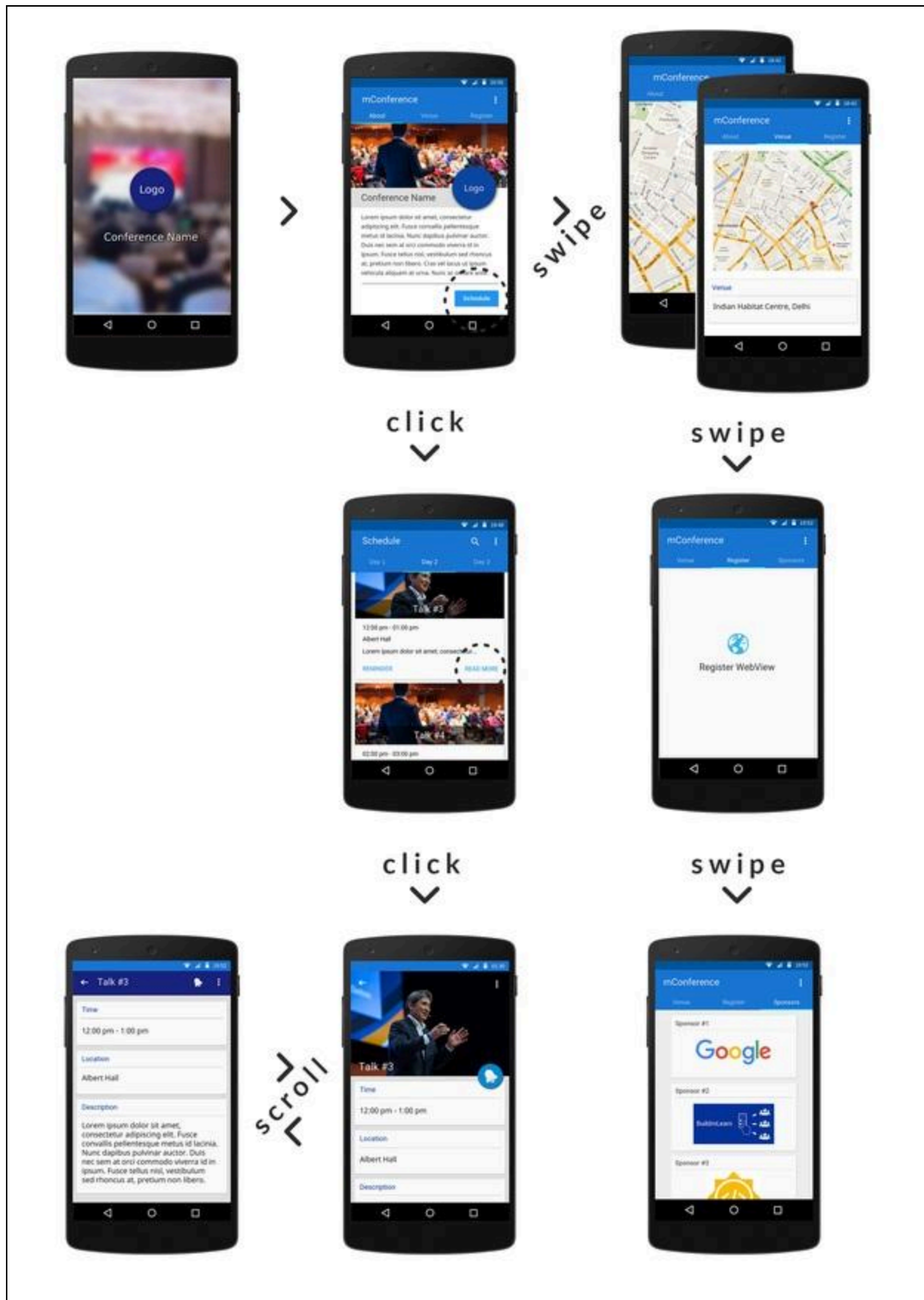


Talk Activity will have *Collapsible Toolbar* and a *Reminder floating button (FAB)* . Details of the talk will be displayed in *Cards*. Clicking on reminder will call the android *Calendar Intent*.

➤ Sample XML Schema

```
<name> Conference Name </name>
<logo> http://www.example.com/logo.png </logo>
<venue> Indian Habitat Centre, Delhi </venue>
<time>
  <start> 1457802640000 </start> <!-- Stored in milliseconds -->
  <end> 1457893800000 </end> <!-- Stored in milliseconds -->
</time>
<splashbg type="image"> http://www.example.com/background.jpg </splashbg> <!-- Splash Background
-->
<aboutbg> http://www.example.com/image.jpg </aboutbg> <!-- Background in About Fragment -->
<details> Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt
ut labore et dolore magna aliqua. </details> <!-- Conference Details-->
<reglink> https://www.google.com/forms </reglink> <!-- Registration Web Link -->
<sponsors type="individual"> <!-- Sponsors -->
  <item id="1">
    <desc> Sponsor #1 </desc>
    <link> https://www.google.com/images/branding/googlelogo/1x/googlelogo_color_272x92dp.png
  </link>
  </item>
  <item id="2">
    <desc> Sponsor #2 </desc>
    <link> http://buildmlearn.org/logo.png </link>
  </item>
</sponsors>
<talks> <!-- Talks -->
  <item id="1">
    <desc> Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor
    incididunt ut labore et dolore magna aliqua. </desc>
    <start> 1457802640000 </start> <!-- Stored in milliseconds -->
    <end> 1457806240000 </end> <!-- Stored in milliseconds -->
    <image> http://www.example.com/talk1.jpg </image>
  </item>
  <item id="2">
    <desc> Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor
    incididunt ut labore et dolore magna aliqua. </desc>
    <start> 1457806240000 </start> <!-- Stored in milliseconds -->
    <end> 1457809840000 </end> <!-- Stored in milliseconds -->
    <image> http://www.example.com/talk2.jpg </image>
  </item>
</talks>
```

➤ Application Flow



4. Timeline

➤ **Community Bonding Period (4 weeks) :**

- Get to know the community and the mentors.
- Discuss any modifications on existing features
- Improve existing XML Schema and create a detail sample data accordingly.
- Discuss new features, brainstorm on different mockups and designs.
- Create a more detailed architecture for the project and get feedback on it.

➤ **Week 1 : Minimalist layouts for the Application**

I plan to spend one week to create basic layouts for all the activities and fragments, including the 2nd approach ones.

➤ **Week (½)2 : Implementing Home Activity**

Implementing Home activity will involve making of About, Venue, Register and Sponsor fragments.

➤ **Week (½) 2 and 3 : Implementing Schedule Activity**

Implementing Schedule Activity will involve making the logic of different fragments for talks on different days, the Talk Activity, and Reminder (notification) intents and notifications. Search feature will also be added along with the aforementioned features.

➤ **Week 4 : Creating and integrating XML parsing modules**

During this week, I will be creating different XML modules for parsing the XML configuration file in the assets folder. 3-4 days will be spent on integrating the modules created with different activities and fragments. Data will be populated accordingly.

➤ **Week 5 : Testing app functionality and bug fixing**

This week will be spent on testing the application and bug fixing. By this week, the first version of the application will be available for mid-term evaluations.

➤ **Mid-term Evaluations**

By this time, most of the functionality demanded by the project idea is implemented with minimalist UI. The first version of the application will be released and made available to limited users and developer community to get some feedback.

➤ **Week 6 : Implementing changes according to feedback**

As this is a new framework, feedback from others is very important. During this week, I will be focusing on implementing changes in the application according to the feedback.

➤ **Week 7 : Framework Web page**

During this week, the static web page will be developed which acts as an interface for organizers of the conference to create XML config file. Javascript modules will be developed for creating desired XML file.

➤ **Week 8 : Material Layouts**

Minimalist layouts will be given Material look and will strongly adhere to Android Material Design Guidelines by Google. Support for landscape orientation will also be added. Layouts of the second approach will also be added.

➤ **Week 9 : Handling exceptions**

All the exception handling like network connectivity, wrong input entries in web page etc. will be done during this week.

➤ **Week 10 : Testing on multiple devices**

This week will be spent on proper testing of application with different devices with different screen resolutions. Bug fixing will be done if any defects found.

➤ **Week 11 : Feedback and enhancement**

After implementing almost all features, the framework will be provided to users and mentors for testing and getting feedback. Enhancement and fine tuning will be done according to the feedback.

➤ **Week 12 and 13 : Documentation**

Last two weeks will be spent on completing the documentation of the framework and compensate for the elongated goals.

5. About Me

My name is **Jai Agarwal**. I'm pursuing my undergraduation in M.Sc. Mathematics + B.E. Computer Science (Dual Degree) in Birla Institute of Technology and Science, Pilani Campus. Currently, I'm in my fourth semester. I'm a avid and enthusiastic programmer with a strong experience in Java and Android. I also have experience in Ruby on Rails and Front-end (HTML5 / CSS / Javascript) development. My ultimate aim is to become a fully fledged full-stack developer and have my own successful startup.

➤ General Information

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➤ Projects And Experience

- **Oasis 2015** : Oasis is the annual cultural fest of BITS Pilani, Pilani Campus. Oasis 2015 was the official app for it. The app had features such as About the fest, Schedule, Events Now, Reminders, Special UI for major events, Updates, etc. The app is available on the play store and already has 1900+ downloads and can be found here: [Play Store](#) . The repository of the app can be found on github : [Github link](#).
- **ReviewMiner** : It is a cross platform review miner app. It scrapes reviews from amazon and flipkart for a product and does Sentiment Analysis on all reviews. It also extracts top features of the product from reviews using Natural Language Processing. All the data is then populated nicely on different graphs. This app was the **winner** of 24 hour **Microsoft code.fun.do** hackathon. Github link for the app : [Github link](#).
- **Apogee 2016 ad BOSM 2015** : Developed apps for Apogee (Technical fest of BITS pilani) 2016 ([Play Store](#)) and BOSM 2015 (Sports Fest of BITS Pilani) ([Play Store](#)). BOSM 2015 has almost 900 downloads whereas Apogee 2016 has almost 500 downloads.

- **Android Workshop** : Took android workshop of 40+ students from different colleges during APOGEE 2016. Total duration was 20 hours.

➤ **Why are you the right person for this task? Have you worked with us before?**

I am an enthusiastic programmer and I think I've enough experience in Android development so as to develop this framework and deliver it on time. Also, I've developed event android applications before and had decent downloads for getting feedbacks which gives me an upper hand on this project. I also have experience in Javascript which will help me in creating JS modules for the framework.

No, I haven't worked with BuildmLearn before.

➤ **How many hours are you going to work on this a week?**

During my summers I have no other commitments and hence, I will only be dedicated to this project. I can give 45+ hours weekly to this project.

➤ **Are you comfortable working independently under a supervisor or mentor who is just available virtually?**

Yes, I am totally comfortable working independently under a supervisor or mentor who is just available virtually. I've done freelancing before and have some experience working for people who are available virtually.

➤ **Are you submitting proposals for any other organisations except us? If yes, which orgs have you applied for?**

No, this is the only organization for which I am submitting proposal for GSoC.

➤ **Have you participated in any previous GSoC programs? If yes, tell us about your experience briefly and if you completed successfully?**

No, this is the first time I am applying for GSoC.

➤ **What is your primary motivation to submit a proposal for this project? Are you interested because you get a stipend as a part of GSoC or would you be interested to develop this project for us even outside GSoC?**

I am always interested and attracted to field of Automation. Though I've created events applications before but I chose this project as it will automate the process of building Event/Conference apps and thus, will be a great utility framework and can be used by people who does not have any Android development background.