

# GSoC 2016 Proposal to Kivy (Python Software Foundation)

## Project: Plyer

### Sub-organization information

Sub-organization with whom you hope to work: **Kivy**

### Mentors

Akshay Arora, Ryan Pessa

### Student Information

Name: Kuldeep Singh

Alternate name: Kuldeep Grewal

Email: [kuldeepbb.grewal@gmail.com](mailto:kuldeepbb.grewal@gmail.com)

Telephone: +917727935906/ +918398988656

Time Zone: Jaipur, India UTC+5:30

IRC: [kiok46@irc.freenode.net](irc://kiok46@irc.freenode.net)

Source Control Username: <http://www.github.com/kiok46>

Skype: kuldeep grewal

Facebook: <https://www.facebook.com/kuldeep.grewal.125>

Blogs: <http://kiok46blog.wordpress.com>

### University Information

University: The LNM Institute of Information Technology, Jaipur

Major: Computer Science and Engineering

Current Year: 3rd Year

Expected Graduation date: In June 2017

Degree: B-Tech

### Project Proposal Information

**Proposal Title:** Kivy: Plyer

**Proposal Abstract:** This Proposal is based on description of Plyer project in the [ideas page](#) provided by Kivy Organization. The goal of the project will be to provide stable and platform independent APIs to the users for accessing features of their desktop and mobile devices.

#### Project Description:

- The table below shows the **currently available and expected features** in plyer. They are marked as "X" if implemented and left blank if not. I have divided the features in 3 different categories E (Easy), M (Medium) and H (Hard) and categorized on the basis of time consumption and expected efforts to be put on them. **My goal would be to fill the table with**

**as many “X” as possible.** This table could never be complete as there is always a possibility for some new entry.

<b>Platforms</b>	<b>Android</b>	<b>iOS</b>	<b>Windows</b>	<b>OS X</b>	<b>Linux</b>	<b>Difficulty (E/M/H)</b>
<i>Accelerometer</i>	X	X		X	X	M
<i>Audio Recording</i>	X					E
<i>Barcode and QR scanner</i>						H
<i>Barometer</i>						E
<i>Battery</i>	X	X	X	X	X	-
<i>Bluetooth</i>						H
<i>Call</i>	X					E
<i>Camera (capture video)</i>						E
<i>Camera display</i>						E
<i>Camera (taking pictures)</i>	X	X				E
<i>Contacts</i>						M
<i>Compass</i>	X	X				-
<i>Email (Open mail client)</i>	X	X	X	X	X	-
<i>Finger Print Scanner</i>						H
<i>Flash</i>	X	X				-
<i>Gallery</i>						M

<i>GPS</i>	X	X				-
<i>Gyroscope</i>	X	X				-
<i>In-app Billing</i>						H
<i>In-app Browser</i>						M
<i>Internationalization</i>						M
<i>Native File Chooser</i>			X	X	X	-
<i>Network Information</i>						M
<i>NFC</i>						M
<i>Notifications</i>	X		X	X	X	M
<i>Notification (Interaction)</i>						M
<i>Orientation</i>	X					E
<i>Proximity</i>						E
<i>Sharing (Images)</i>						M
<i>Sharing (Text)</i>						E
<i>Sms (Sending Messages)</i>	X					E
<i>Sms (Receiving Messages)</i>						E
<i>Speech Recognition</i>						M
<i>Status bar</i>						E
<i>Text to Speech</i>	X	X	X	X	X	-
<i>Unique ID</i>	X	X	X	X	X	-
<i>Vibrator</i>	X	X				-
<i>Wi-Fi</i>						M

- **Access to required hardware:**
  - I personally own Linux, Windows, Android, iOS systems and plan to buy OS X system before the GSoC period starts.
- **Moving code from [p4a](#) and [kivy-ios](#) to [plyer](#):**
  - There are some modules that are required to be moved to [plyer](#). (Explained in Timeline)
- **Dividing the work flow:**

My summer vacations will start from mid-May and will be ending in mid-July, So I have planned my workflow accordingly. I will take more load in the starting by implementing the easy features as quickly as possible and quickly jump to the next part as explained in the timeline, I will be dividing my work in 4 phases.

  - Phase-1: Work on features in easy category. (Explained in timeline)
  - Phase-2: Moving code from [p4a](#) and [kivy-ios](#) to [plyer](#). (Explained in timeline)
  - Phase-3: Work on features in medium category. (Explained in timeline)
  - Phase-4: Work on features in hard category. (Explained in timeline)

## Timeline:

<b>Up to 23<sup>rd</sup> May</b>	<p>For android I need to access Java cases for which I will be using PyJNIus, for iOS and OS X, I need Objective-C for which I will be using PyOBJus, for Windows and Linux I will be using commonly found libraries like ctypes for windows and (dbus and gtk3+) for Linux.</p> <p>I will be reading about the implementation for these features, gain more knowledge of PyJNIus, PyOBJus and kivy-ios and p4a and will go through required documentations (Mentioned in “Related work” below). I will be in touch with my mentors and take suggestions.</p> <p>During this time, if my mentor thinks that I am ready to start programming then I will start working on my Phase-1.</p>
<b>23<sup>rd</sup> May – 17<sup>th</sup> June</b>	<p><b>Phase-1 (Week 1 - 4)</b></p> <ul style="list-style-type: none"> <li>• During this phase I will be working on features in easy category.</li> <li>• Documenting and examples will be done along with feature implementation.</li> </ul> <p><b>23<sup>rd</sup> May – 3<sup>rd</sup> June (Week 1 &amp; 2)</b></p> <p>There are some features that are straight forward to implement and won't take much of the time. I will be working on features like: Calling, Sending and Receiving Sms, Status bar, Text sharing, this should not take more that 10-12 days to implement.</p> <p><b>4<sup>th</sup> June – 5<sup>th</sup> June Week-2 (Weekend)</b></p>

**18<sup>th</sup> June – 7<sup>th</sup> July**

Writing examples and documenting the implemented features.

**6<sup>th</sup> June – 17<sup>th</sup> June (Week 3 & 4)**

Barometer, Camera display, orientation and other features under easy category would be implemented in this time period.

**Phase-2 (Week 5,6 & 7)**

- Will implement features from easy category (if any).
- Documenting and examples will be done along with feature implementation.

**18<sup>th</sup> June – 24<sup>th</sup> June (Week-5)**

During this time, I will be working on moving modules/ features from recipe for iOS from Kivy-ios which includes [mailing](#) and [browser](#) to Plyer.

**From 20<sup>th</sup> June – 27<sup>th</sup> June (Side by Side)**

**Mid-Term Evaluation (5<sup>th</sup> Week)**

- Make Preparation for the mid-term evaluation.
- Seek feedback and make revisions based on that.
- Submit the evaluations before 27<sup>th</sup> June.

**28<sup>th</sup> June – 7<sup>th</sup> July (Week 6 & 7)**

- Will take the feedback from the evaluation and make changes (if required).
- Continue with the previous task. If done, then move to next step.

During this time, I will be working on moving modules/ features from recipe for android from p4a which includes [Mixer](#) (Chanel, Sound, Music), [broadcast receiver](#), [runnable](#), [listener](#) to common module in Plyer/android, [web browser](#), [services](#) etc. to Plyer.

- If completed before time, then jump to Phase-3

**08<sup>th</sup> July – 31<sup>st</sup> July**

**Phase-3 Week (8, 9 & 10)**

- During this period, I will be working on features in medium category.
- Documenting and examples will be done along with feature implementation.

**08<sup>th</sup> July – 19<sup>th</sup> July Week (8 & 9(1/2))**

During this period, I will be working on features like, Internationalization, Network Information, Accelerometer etc. under medium category.

**20<sup>th</sup> July – 31<sup>st</sup> July Week (9(1/2) & 10)**

	<p>Features like Speech Recognition, Gallery, NFC and Wi-Fi etc. will be implemented.</p> <ul style="list-style-type: none"> <li>• If completed before time, then jump to Phase-4</li> </ul>
<b>1<sup>st</sup> August – 23<sup>rd</sup> August</b>	<p><b>Phase-4 Week (11, 12 &amp; 13)</b></p> <ul style="list-style-type: none"> <li>• During this phase, I will be working on features in the hard category.</li> <li>• Documenting and examples will be done along with feature implementation.</li> </ul> <p><b>1<sup>st</sup> August – 18<sup>th</sup> August</b></p> <p>Hard to implement or Big features like Barcode and QR scanning, Bluetooth, fingerprint scanning and In-app billing will be my main focus during this phase.</p>
<b>19<sup>th</sup> August – 23<sup>rd</sup> August</b>	<ul style="list-style-type: none"> <li>• Continue to Implement features from hard category (if left).</li> <li>• Complete any missing documentations.</li> <li>• Complete evaluations and send them before 23<sup>rd</sup> August.</li> </ul>
<b>Onwards</b>	<p>Keep contributing to Kivy and its sister projects and make use of these features.</p>

- **Link to a patch/code sample, preferably one you have submitted to your sub-org (\*):**  
I have implemented the following for pleyer:
  1. [Calling feature](#) for android. (Merged)
  2. [Calling feature](#) for iOS. (Waiting for approval)
  3. [Bluetooth feature](#) for android. (Waiting for approval)
  4. Added [Notification Ticker functionality to Notification, updated GPS example and added a Battery example](#). (Merged)
  5. [Text Sharing](#) for android. (Waiting for approval)

**Other contributions:**

1. [Kivy Designer](#).
2. [Kivy-garden](#).

- **Related Work:**
  - ◆ [PyJNIus](#): A Python module to access Java classes as Python classes using JNI.
  - ◆ [PyOBJus](#): A Python module to access Objective-C classes as Python classes using Objective-C runtime reflection.
  - ◆ [P4a/ Python for android](#): It is a project to create your own Python distribution including the modules you want, create an apk including python, libs, and your application.
  - ◆ [Kivy-ios](#): It is designed to compile the necessary libraries for iOS to run the application and manage the creation of the Xcode project.
  - ◆ [Android Documentation](#), [iOS Developer Library](#), [ctypes](#), [Dbus](#).

## Other Commitments:

- Have you applied to any other organization? No.
- Do you have any other commitments during the main GSoC time period? No.
- Do you have exams or classes that overlap with this period?
  - I have 2 exams in first week of June and 2 in first week of July. (But not a big issue). I can commit more than 6 hours from Monday to Friday and every alternate weekend. My next semester will start from mid-July, So I will not be able to work full time except for the weekends. As it will be my 4<sup>th</sup> year, so work load from academic side will be less.

## Why am I apt. for this project:

Familiarity with Plyer and its coding style. I love to code and have been doing it for past 2 years with principle language Python, Java and C. I have been contributing to Kivy and its sister projects for past 6-7 months(mainly [Kivy-Designer](#) and [Kivy-Garden](#)). I have done [java project](#) at my college and some python projects in Kivy, pygame, PyQt some of them could be found at my GitHub profile. One 2K+ code project in Kivy could be found [here](#). After some years when millions of people would be using Plyer's API, I want to be remembered as the guy who made them.

## Other Schedule Information:

None.