GSoC 2016 Proposal to Kivy (Python Software Foundation)
Project: Plyer

Sub-organization information

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

Student Information

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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 current available and expected features in plyer. They are marked as “X” if implemented and left blank if not. 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.

Platforms	Android	iOS	Windows	OS X	Linux
Accelerometer	X	X		X	X
Audio Recording	X				
Barcode and QR scanner					
Barometer					
Battery	X	X	X	X	X
Bluetooth Low Energy					
Call	X				
Camera (capture video)					
Camera display					
Camera (taking pictures)	X	X			
Compass	X	X			
Contacts					
Email (Open mail client)	X	X	X	X	X
Finger Print Scanner					
Flash	X	X			
Gallery					
GPS	X	X			
Gyroscope	X	X			
In-app Browser					

In-app Billing					
Internationalization					
Native File Chooser			X	X	X
Network Information					
NFC					
Notifications	X		X	X	X
Notification (Interaction)					
Orientation	X				
Proximity					
Sharing					
Sms (Sending Messages)	X				
Sms (Receiving Messages)					
Speech Recognition					
Status bar					
Text to Speech	X	X	X	X	X
Unique ID	X	X	X	X	X
Vibrator	X	X			
Wi-Fi					

- **Testing and improving already available pull requests:**
  - There are currently 29 Pull requests waiting to be approved and merged in the master branch.
- **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.
- **Dividing the work flow:**
  I will be dividing my work in 4 phases and the features in 3 categories (Easy, Medium, Hard).
  - Phase-1: Work on features, pull requests in easy category.
  - Phase-2: Moving code from p4a and kivy-ios to plyer.
  - Phase-3: Work on features, pull requests in medium category.
  - Phase-4: Work on features, pull requests in hard category.

Timeline:

Up to 23rd May	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. I will be reading about the implementation for these features, gain more knowledge of Pyjnius, Pyobjus and kivy-ios and p4a. I will be in touch with my mentors and take suggestions. I will discuss with my mentor and divide the entire table along with the available pull requests into the Easy, Medium and Hard category and each would be implemented at its respective phase. I will be dividing my workflow in such a way that at any phase, I will be working on implementing some new feature as well as on some pull request. During this time, if my mentor thinks that I am ready to start programming then I will start working on my Phase-1.
23rd May – 17th June	**Phase-1** • During this phase I will be working on features and pull requests in easy category. • Documenting and examples will be done along with feature implementation. **23rd May – 3rd June** 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. **4th June – 5th June (Weekend)**

	Writing examples and documenting the implemented features. **6th May – 17th June** Proximity, Camera display, Notification interaction and other features under easy category would be implemented in this time period.
18th June – 7th July	**Phase-2** • Will implement features from easy category (if any). • Documenting and examples will be done along with feature implementation. **18th June – 23rd June** 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 20th June – 27th June (Side by Side)** **Mid-Term Evaluation** • Make Preparation for the mid-term evaluation. • Seek feedback and make revisions based on that. • Submit the evaluations before 27th June. **28th June – 29th June** • Will take the feedback from the evaluation and make changes (if required). • Continue with the previous task. If done, then move to next step. **30th June – 7th July** 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
08th July – 28th July	**Phase-3** • During this period, I will be working on features and pull requests in medium category. • Documenting and examples will be done along with feature implementation. **08th July – 19th July**

	During this period, I will be working on features like Speech Recognition, Internationalization, Wi-Fi, Network Information, Barometer etc. **20th July – 28th July** During this period, I will be working on features like Gallery, NFC and Camera video capture etc.
29th July – 18th August	**Phase-4** • During this phase, I will be working on features and pull requests in the hard category. • Documenting and examples will be done along with feature implementation. **29th July – 18th August** Hard to implement or Big features like Barcode and QR scanning, Bluetooth low energy, fingerprint scanning and In-app billing will be my main focus during this phase.
19th August – 23rd August	• Continue to Implement features from hard category (if left). • Complete any missing documentations. • Complete evaluations and send them before 23rd August.
Onwards	Keep contributing to Kivy and its sister projects and make use of these features.

- **Link to a patch/code sample, preferably one you have submitted to your sub-org (*):**
  I have implemented the following for plyer:
  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)**

- **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.

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.

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). 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.