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Processable Data Making in the Remote Server Sent by Android Phone as a GIS Data Collecting Tool

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Mobile technologies are improving and getting cheaper everyday. Not only smart phones are improved much but also new types of mobile applications and sensors come with the smart phone together. Maps and navigation applications one of the most popular types of applications on these types. Most of these applications uses location services including GNSS, Wi Fi, cellular data and beacon services. Although these coordinate precision not very high, it is appropriate for many applications to utilize.

Android is a mobile operating system based on Linux Kernel. It is compatible for varies mobile devices like smart phones, tablets, smart TV's, wearable technologies etc. Android has large capability for application development by using the open source libraries and device sensors like gyroscope, GNSS etc.

Android Studio is the most popular integrated development environment (IDE) for Android devices, mainly developing by Google. It had been announced on May 16, 2013 at Google I/O conference. Android Studio is built upon Gradle architecture which is written in Java language.

SQLite is a relational database operating system which has so common usage for mobile devices. It developed by using C programming library. It is mostly used via embedding into a software or application. It supports many operating systems including Android.

Remote servers can be in several forms from high complexity to simplicity. For this project we will use a open source quad core board computer named Raspberry Pi 2. This device includes 900 MHz ARMv7 compatible quad core CPU, VideoCore IV GPU and 1 GB RAM. Although Raspberry Pi 2's main operating system is Raspbian, we use Debian which are both Linux based operating systems. Raspberry is compatible for many programming language, however some languages are optimized for this device. These are Python, Java, C, C++, Ruby, Perl and Squeak Smalltalk.

In this paper, a mobile application will be developed to send coordinate and string data to a SQL database embedded to a remote server. The application will run on Android Operating System running mobile phone. The application will get the location information from the GNSS and cellular data. The user will enter the other information individually. These information will send by clicking a button to remote server which runs SQLite. All these informations will be convertible to any type of measure like type of coordinates could be converted from WGS 84 to ITRF.