

Android Mobile Apps to Supplement Web Content

India has the fastest growing telecom network in the world credited to its high population and development potential. The total number of telephones in the country stands at 957.61 million, while the overall tele-density has increased to 76.75% as of 30th September 2014. The total number of mobile phone subscribers has reached 930.20 million during the same period. With growing emphasis on providing online Government services through web based interface on 24x7 basis, the need to provide these services on the smart phones has increased. Since Android OS based smart phones are the most popular phones in India, NIC Himachal Pradesh has developed multiple mobile apps for citizens, employees, pensioners, press and Government officials, which are easy to use on mobile devices.



AJAY SINGH CHAHAL
Senior Technical Director
ajay.chahal@nic.in



AMIT KANOJIA
Scientific Officer/Engineer "SB"
amit.kanojia@nic.in

Edited by
VIVEK VERMA

The idea behind coming up with mobile apps is to supplement the existing information available on various websites to the stakeholders on their hand-held devices in such a manner that any novice can easily make use of this important information.

ANDROID APPS

All the apps, developed by NIC Himachal Pradesh, can be downloaded through the official website of the Himachal Pradesh Government at <http://himachal.nic.in> (Mobile Apps section) from the Google Play Store.

The objective of all these apps is to enable wider reach and easy accessibility of Government information and service. As smart phones are normally available with citizens and employees, with these apps they don't have to depend upon others or costly PC/laptops for accessing such important information. An important feature of all these apps



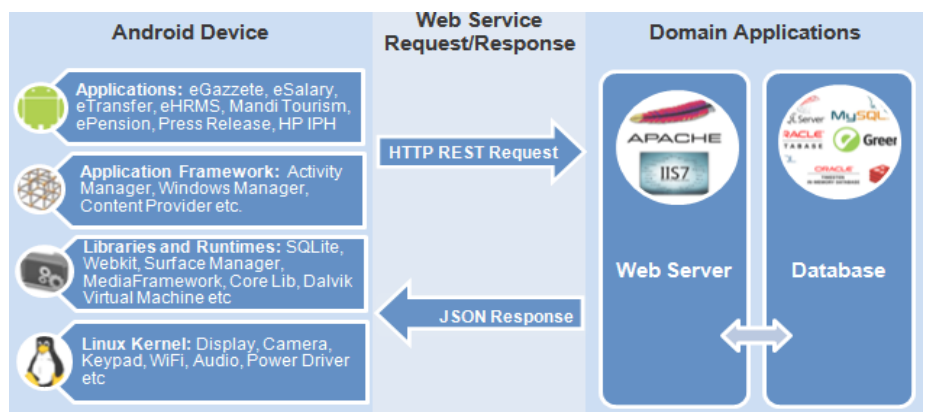
“ Mobile devices are used by majority of students, citizens and employees due to their ease of handling and accessing relevant information. The mobile apps developed by NIC Himachal Pradesh for citizens will add a new dimension to citizen service delivery and will be useful for officers for monitoring the quality and delivery time of such services. ”











P. MITRA, IAS
Chief Secretary, Himachal Pradesh

is that they enable offline browsing in almost all cases. Users can download the updated content whenever Internet connectivity is available for viewing at later stages.

TECHNOLOGY

Developing mobile apps is a time



Logo	Name	Category	Description
	HPTDC	G2C, G2G	Tourism App for HPTDC covering all Hotels, Reservation Status, photos
	eChallan	G2C, G2G	All Government receipts, taxes paid by individuals, transporters, businessmen in Treasuries are stored in searchable format. Bar code reader embedded in the App to directly read from printed challan
	HP Phones	G2C, G2E, G2G	State Government Telephone Directory with free/reverse search criteria and auto-dialing
	X.10 Card	G2C	Employment Exchange Registrant mobile application showing registration details, renewal alerts, sponsoring and vacancy information
	ePension	G2C	Year wise, monthly Pension details of retired State Government employees
	IPR HP	G2C	Latest press releases, including news photographs being released in Hindi and English languages (bilingual)
	eGazette	G2C, G2G	Online eGazette index, showing notifications published in the daily Gazette
	eSalary	G2E	Financial year-wise salary details and current GPF/CPF balance
	eHRMS	G2E	Complete eService book of employees covering service history, training, leave, orders, nomination, current month salary information and updated GPF/CPF balance is made available to employees. It is linked to Biometric Attendance System.
	eTransfers	G2E, G2C	Transfers orders of IAS/HAS, Departments issuing online orders like Health, Education, Revenue, IPH

consuming and storing the data within app to provide information even in offline mode is a challenging task. It is planned to provide these apps on all platforms namely Windows and iOS in addition to Android. The apps are developed in JAVA (android SDK) using Eclipse IDE with android virtual device plugin. The database being used for offline storage of data is SQLite. Its main components are:

• Applications

It is the top most layer and all the applications are to be installed on this layer only. Application components are the essential building blocks of an Android App. These components are loosely coupled by the Application

Manifest File, AndroidManifest.xml, which describes each component of the application and how they interact.

• Application Framework

Application Frameworks are the blocks that the mobile apps directly interact with. These programs manage the basic functions of a phone like resource management, voice call management etc. These are the basic tools with which the developers build their applications. Important blocks of Application Framework are Activity Manager, Content Providers, Telephony Manager, Location Manager, Resource Manager, etc.

• Libraries and Runtime

This is the layer that enables mobile

devices to handle different types of data. These libraries are written in C or C++ language and are specific for a particular hardware. Important blocks of this layer are Surface Manager, Media Framework, SQLite, WebKit and OpenGL. Android Runtime consists of Dalvik Virtual Machine and Core Java libraries.

• Linux kernel

The Linux kernel provides basic system functionality of process management, memory management, device management for camera, keypad, display etc. The kernel also handles all the things that Linux is really good at such as networking and a vast array of device drivers, which take the pain out of interfacing to peripheral hardware.

WAY FORWARD

Presently, the apps are available for Android platform but iOS and Windows Apps are under development to expand the user base. The new apps planned include:

- Land Records, Record of Rights (Jamabandi) and Shajra Nasb based on Tehsil, Village, Khasra/Khatouni and Khewat
- Circle Rates App for registration fee/stamp duty calculation
- Municipal Corporation Shimla-Citizen Services
- MyDiarY App for important administrative contacts at Head Office and filed level and departmental engagements of officers
- Tourism App for Himachal Pradesh considering that the state has enough tourism potential
- Grievance Redressal Status/Alerts and its linking with Public Service Guarantee Act.

For further information:
AJAY SINGH CHAHAL
 Senior Technical Director & SIO
 NIC, Himachal Pradesh
 E-mail- ajay.chahal@nic.in