Tutorial on "Mobile applications for g-governance"

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Abstract

The technological advancements in geospatial domain are directly influenced by the developments in information and communication technologies (ICT). Integration of GIS and mobile technology offers great possibilities, such as the interactive access to geospatial data, real time data integration, streaming and transmission, enhancement of the capabilities of geographic information, and the access to platform independent GIS analysis tools using portable devices. In many GIS based decision making and planning applications, the integration of real time field data into the system is very important and plays a critical role in process of decision making. The field data collection in geospatial domain is required for various reasons like ground validation, collection of Ground Control Points (GCP), field data collection, etc. The mobile based software applications in geospatial domain are becoming one of the important tools for data creation and collection. These software applications are also allowing user's participation in geospatial data creation and analysis. The mobile based solutions are becoming one of the important medium of public participation or crowdsourcing in geospatial domain.

This tutorial will focus on various technological aspects of mobile applications for geo-enabled governance. Android based platform will be used for design and development of mobile based real time data collection and integration system for geospatial applications. During the tutorial, the mobile server configurations (local and cloud platform), client-application customization, designing of field data collection forms in multi-lingual environment, server application for data management and data import and export utilities will be demonstrated. The Open Data Kit (ODK), GeoODK APIs and its components will be used for this purpose. The tutorial will also include a full technological demonstration on geospatial data access and visualization in mobile platform using Android SDK.

Outlines of the Tutorial

Coordinator: Dr. Harish Chandra Karnatak **Speakers/ Resource Persons:** Dr. Harish C. Karnatak, Mr. A.K. Jha and Mr. Kamal Pandey
Client-server architecture for Mobile Application - Overview of client-server architecture - GIS software applications using client-server architecture - Mobile application development Framework
Concept of Crowdsourcing and Participatory GIS - Introduction to Participatory GIS and crowdsourcing

- Framework for crowdsourcing
- Introduction to Open Data Kit (ODK) and its components
Practical Demonstrations on ODK
- Server configuration- Local and Cloud
- Client-customization
- Form creation and management
Geospatial data access and visualization in mobile platform
- Introduction to Android SDK
- Accessing geospatial data using Android SDK
- Overview of Geo-ODK and its components
Summary and Discussion

Organizer and Speakers

	Dr. Harish Karnatak He is Scientist SF and Head, GIT & DL Department at IIRS. He has done his Doctorate in Computer Science with specialization in Geoinformatics. The area of specializations also includes Web Based GIS, Spatial DBMS, and Mobile GIS & LBS. He is also specialized in e-learning based capacity building using LMS and other contemporary technologies. Dr. Karnatak has published more than 50 research papers in peer reviewed journals and conferences/seminars. He has also designed & developed more than 18 scientific/technical geo-portals. He is recipient of ISRO team excellence award- 2009, ISRO-ASI team achievement award- 2009 and two national awards for excellence in training by DoPt, Govt. of India and UNDP- 2015.
	Mr. A.K Jha He is working as Scientist SD, Geoinformatics Department at IIRS. He has done his M. Tech. in Remote Sensing and B.Tech. in Computer Science and Engineering. His area of specialization includes 3D GIS, spatial data analysis & modelling, IT security implementation and geostatistics.
	Mr. Kamal Pandey He is working as Scientist/Engineer SD, GIT & DL department at IIRS. He has done his Master's degree in computer applications. His area of specialization includes software application development for Image processing and GIS, computer system architecture and mobile application development. Presently he is providing his expertise towards development of customised geospatial software in various training programs of IIRS. He has published more than 15 research articles in peer reviewed journals and conferences/seminars.