

Mobile App Development

Disruptive Technologies Trends

- ▶ Social Media
- ▶ Mobility
- ▶ Analytics
- ▶ Cloud Computing
- ▶ Internet of Things
- ▶ Cyber Security



Why Mobility – Hardware Features

- ▶ Touch Screen
- ▶ Media Players
- ▶ Camera
- ▶ Global Positioning System (GPS) Receivers
- ▶ Near Field Communication (NFC) hardware
- ▶ Accelerometer



Trends For Mobility

- ▶ BYOD and Information Security
- ▶ Mobile Device Management (MDM)
- ▶ Mobile App Management (MAM)
- ▶ Mobile App Development (MAD)
- ▶ Mobile Information Management (MIM)



Trends For Mobile App

- ▶ Smart Phones
- ▶ App Development Environments
- ▶ Manufacturer hosted App Stores
- ▶ Enterprise App Stores
- ▶ Ongoing trends in smartphone adoption
 - ▶ Which outnumbered the number of non-smartphones getting purchased than smart phones



Smart Phones Platform

OS	App Store
Apple iOS	Apple App Store
Android	Google Play
Blackberry OS	Blackberry App World
Windows Phone	Windows Phone Marketplace

- Apple App Store started in July'2008
 - Google Play App Store started in September' 2008
 - Blackberry App World started in April' 2009
 - Windows Phone Marketplace started in October, 2010
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Smartphone OS Market Share, 2015 Q2

Period	Android	iOS	Windows Phone	BlackBerry OS	Others
2015Q2	82.8%	13.9%	2.6%	0.3%	0.4%
2014Q2	84.8%	11.6%	2.5%	0.5%	0.7%
2013Q2	79.8%	12.9%	3.4%	2.8%	1.2%
2012Q2	69.3%	16.6%	3.1%	4.9%	6.1%

Source: IDC, Aug 2015

- Reference: <http://www.idc.com/prodserv/smartphone-os-market-share.jsp>



Smartphone Vendor Market Share, 2015 Q2

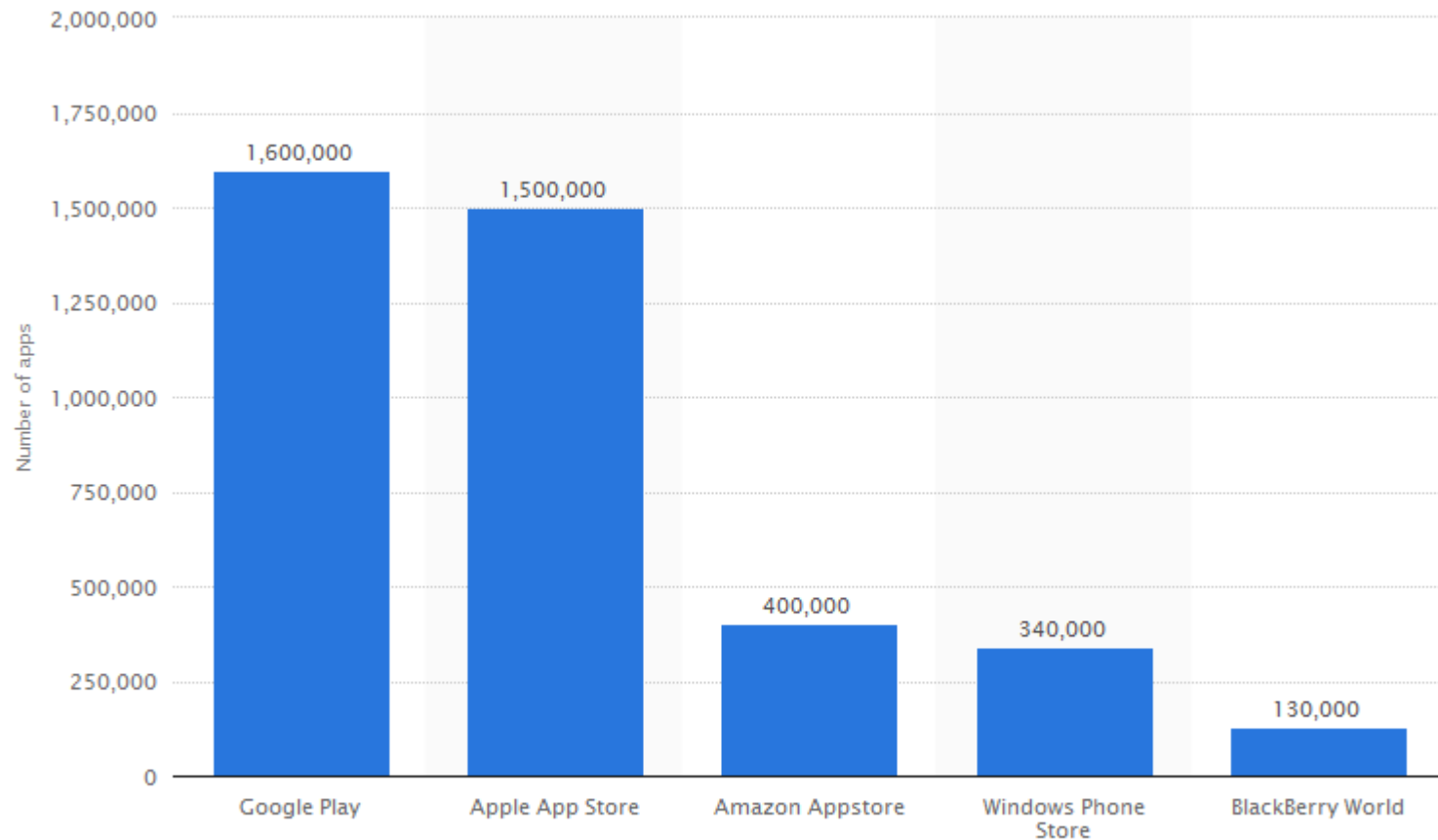
Period	Samsung	Apple	Huawei	Xiaomi	Lenovo*	Others
2015Q2	21.4%	13.9%	8.7%	5.6%	4.7%	45.7%
2014Q2	24.8%	11.6%	6.7%	4.6%	8.0%	44.3%
2013Q2	31.9%	12.9%	4.3%	1.7%	5.7%	43.6%
2012Q2	32.2%	16.6%	4.1%	1.0%	5.9%	40.2%

Source: IDC, Aug 2015

Reference: <http://www.idc.com/prodserv/smartphone-market-share.jsp>



Number of apps available in leading app stores as of July 2015



© Statista 2015

<http://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/>

App Statistics

- ▶ **Download Count**

- ▶ On Apple Store, 100 billion apps have downloaded till july 2015
- ▶ Download on Google Play Store is also in same range

- ▶ **Popular Categories**

- ▶ Games
- ▶ Education
- ▶ Lifestyle
- ▶ Entertainment
- ▶ Business



Mobile App Architecture

Native application



Web application



Hybrid application



Mobile App Architecture

There are three popular approaches today:

Mobile Web App: In this approach, the application runs on a mobile browser. The browser only hosts the application's presentation layer that is designed using HTML5. The interface typically looks and behaves like a traditional web site but is designed for the mobile device form factor.

Native App: In this approach, the mobile application is custom built for the target device operating system with a compiled programming language like Objective C and using the native SDK. This approach offers the native look and feel, the best performance, and a great user experience.

Hybrid App: This approach emerged to address the inability of the Web App approach to access device sensors (like cameras and Bluetooth) while preserving its highly desirable cross-platform support. The Hybrid App approach achieves this by building HTML5-based applications that run in the browser. But unlike in the case of the Web App approach, here the browser is embedded inside a native container app that provides a bridge for the HTML5 pages to access the low-level device functions.



Native App Development Platform

	Languages	Tools	Packaging format
Apple iOS	Objective-C	Xcode	.app
Android	Java	Android SDK	.apk
Blackberry OS	Java	BB Java Eclipse Plug-in	.cod
Windows Phone	C#, VB.NET	Visual Studio, Windows Phone development tools	.xap



Cross Platform Frameworks

	Languages
Cordova/PhoneGap	HTML, CSS, Javascript
Appcelerator Titanium	Javascript
Xamarin	C#
Intel XDK	HTML, CSS, JS

- Cross-platform software development is the need of the hour because of increasing demand for cost-efficient and short-timeline software projects. Such development process saves lots of efforts and allows writing a **single codebase** to create apps for **multiple platforms**.
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Back-end system integration

Mobile Apps may require to be integrated with Enterprise ERP or CRM platform. This is done by using http/soap protocol using Web Services.

Two types of web services are being used:

- RESTful: RESTful web service-based API's specifically designed for mobile applications are the most desirable approach as it minimises cost of mobile solutions while maximising efficiency
- SOAP: SOAP API's can sometimes be a bit heavyweight when it comes to mobile

Data may be exchanged either in JSON/XML formats.

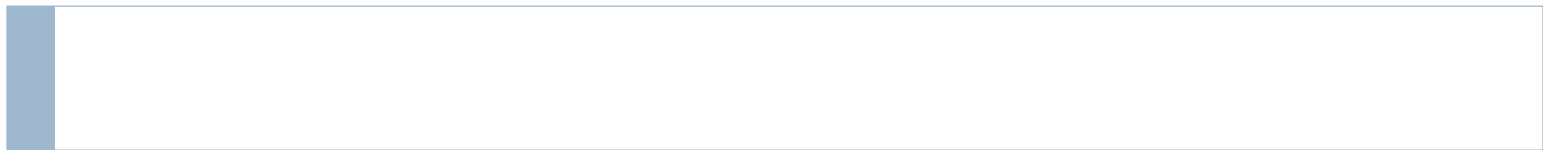


Mobile App Security Guideline

Mobile App Security will assessed on following parameters:

- V1: Architecture, Design and Threat Modelling
 - V2: Data Storage and Privacy
 - V3: Cryptography Verification
 - V4: Authentication and Session Management
 - V5: Network Communication
 - V6: Environmental Interaction
 - V7: Code Quality and Build Settings
 - V8: Resiliency Against Reverse Engineering
-
- OWASP Mobile Security App guideline/checklist is followed.







Assessment App

Online testing solution

Google Play

<https://play.google.com/store/apps/details?id=in.sisoft.assessment.android>

Google Drive

<https://drive.google.com/open?id=0B4PrtUU6L3m-VWFBZE5ONFNNclU&authuser=0>

Assessment App

Mobile Apps:

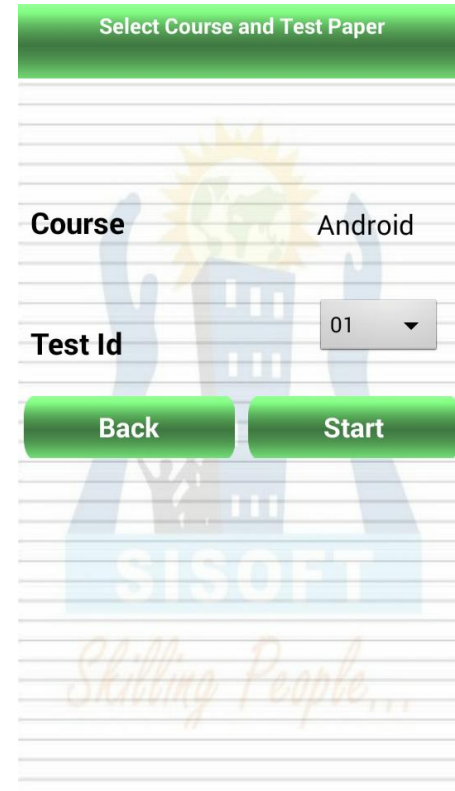
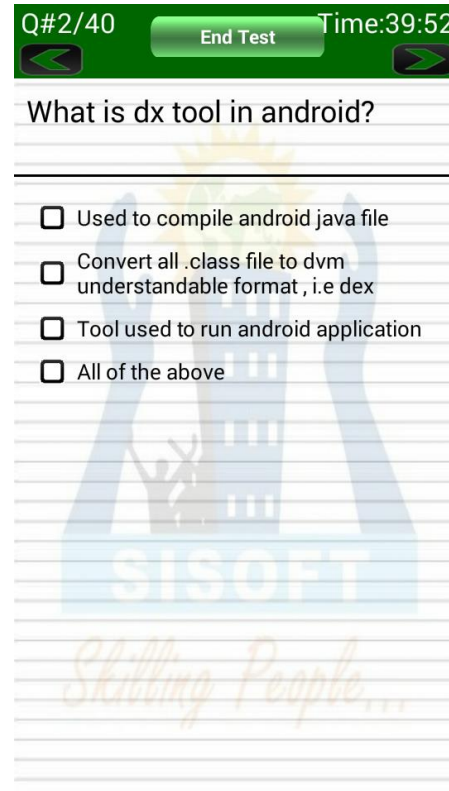
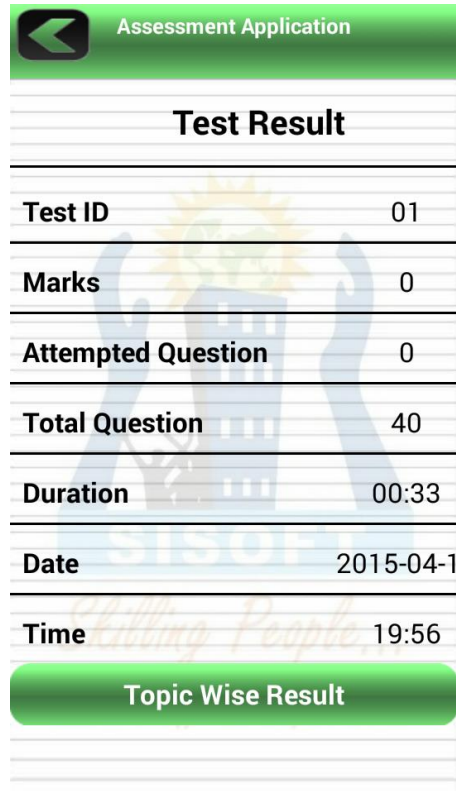
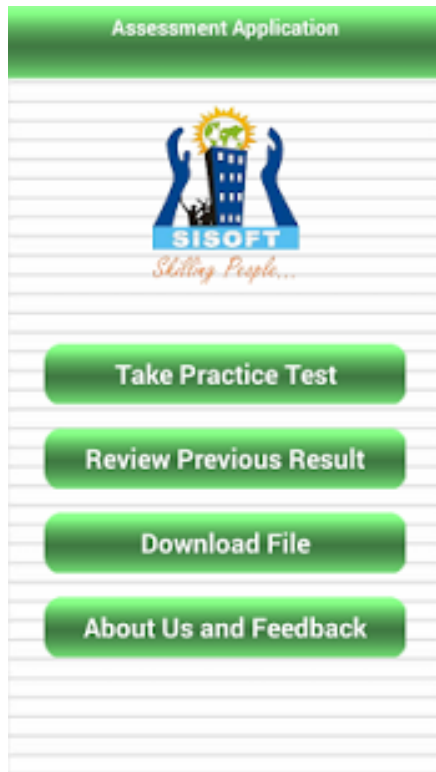
- ▶ The application simulates the online testing
- ▶ Questions papers can be pre-installed or added dynamically.
- ▶ User can select the question paper for the test from the list of available test papers
- ▶ Results and Analysis is shared instantly
- ▶ Result records are maintained and user can check it any time

Server Side Application:

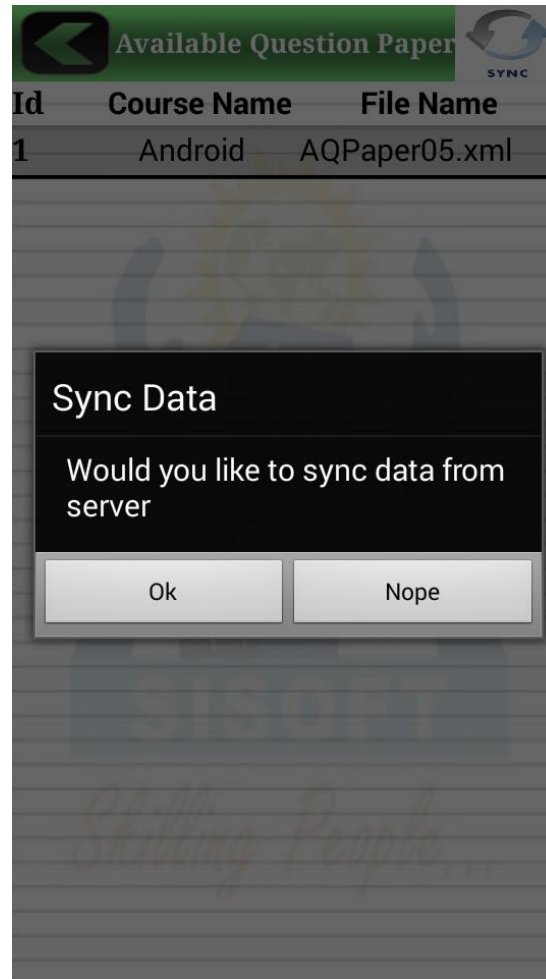
- ▶ Upload additional test papers which user can download on their mobile.
- ▶ Send notification/message to all Assessment/Mobi Test App users



Assessment App



Assessment App



Assessment App – User Options/Guide

- ➔ **First time start**, User will have to register in the App by providing Name, email ID, Phone Number, Course Name. This is one time entry and can't be changed
- ▶ User may get notification from administration.
- ▶ **Take Practice Test:**
 - ▶ Select Course and Test Paper. On Selection, user will embark on taking the practice exam.
 - ▶ User can end the test by pressing back button thrice on any one question (No result will be generated)
 - ▶ User can end the test by pressing “End Test” button and this will generate the result. Topic wise Result may be emailed & shared
- ▶ **Review Previous Result:**
 - ▶ Review all previous test exams.
 - ▶ One may review the response and the correct answer
 - ▶ One may review the Topic wise detailed result, that may be shared on Social Media and emailed
- ▶ **Download Question Paper:**
 - ▶ See all available papers for download.
 - ▶ To view new paper additions on server, use the Sync button.
 - ▶ To download the paper, select the item. It will download the paper on your device and paper will be available for practice test
- ▶ **About Us and Feedback**
 - ▶ Send feedback email to Sisoft



Coming Up...

Tutorials App

Share your course online....



Baby Immunization Tracker App

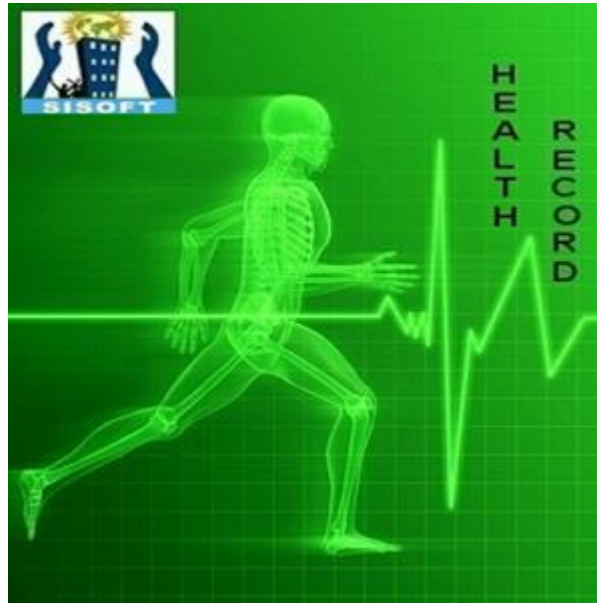
Health Solution – Baby

<https://play.google.com/store/apps/details?id=in.sisoft.babyapp>

Baby Immunization Tracker

- ▶ Generates the baby immunization calendar
- ▶ Generates reminder for baby immunization
- ▶ Records completion status
- ▶ Emails the immunization calendar
- ▶ This references Indian Academy of Pediatrics. So, should be used only for babies in India
- ▶ Provides details about vaccines
- ▶ Provides tips about the feeding the babies





Health Record App

Health Solution

<https://play.google.com/store/apps/details?id=in.sisoft.healthrecorder>

Health Record

- ▶ Maintain Height and Weight, BMI
- ▶ Maintain Blood Pressure and Pulse Rate
- ▶ Maintain Diabetes, Glucose level
- ▶ Maintain Medication, provide alarm to consume medication.
- ▶ Maintain Health Insurance Details
- ▶ Email the medication history to your health provider/doctor.





First Aid Help Line App

Health Solution

<https://play.google.com/store/apps/details?id=in.sisoft.firstAid>

First Aid Help Line

- ▶ Easy way to search your Local areas details for emergency situation.
- ▶ Eg Nearest hospital, Nearest Chemist Shop get address, Contact details and Call also as well as you will get all details about your area
- ▶ Get the tips about the first aid for health problems through this app
- ▶ You get all the details about the Medical kit .Mention all the description about the all Medical kit thing. Learn about uses the all Medical kit for emergency Situation.

