



# MOBILE APP DEVELOPMENT

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# What is mobile application?


- A mobile application, most commonly referred to as an app, is a type of application software designed to run on a mobile device, such as a smartphone or tablet computer.
- A mobile app is a software application developed specifically for use on small, wireless computing devices, such as smartphones and tablets, rather than desktop or laptop computers.
- Mobile apps are designed with consideration for the demands and constraints of the devices and also to take advantage of any specialized capabilities they have. A gaming app, for example, might take advantage of the iPhone's accelerometer.



# What is mobile Website ?

- **A simple definition could be:**

The mobile web refers to access to the world wide web, i.e. the use of browser-based Internet services, from a handheld mobile device, such as a smartphone or a feature phone, connected to a mobile network or other wireless network.



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## What's the Difference Between a Mobile Website and an App?

- A **mobile website** is similar to any other website in that it consists of browser-based HTML pages that are linked together and accessed over the Internet (for mobile typically WiFi or 3G or 4G networks). The obvious characteristic that distinguishes a mobile website from a standard website is the fact that it is designed for the smaller handheld display and touch-screen interface.
- Like any website, mobile websites can display text content, data, images and video. They can also access mobile-specific features such as click-to-call (to dial a phone number) or location-based mapping.
- **Mobile Apps** are actual applications that are downloaded and installed on your mobile device, rather than being rendered within a browser. Users visit device-specific portals such as Apple's App Store, Android Market, or Blackberry App World in order to find and download apps for a given operating system. The app may pull content and data from the Internet, in similar fashion to a website, or it may download the content so that it can be accessed without an Internet connection.



# Mobile Architecture Overview

## Objectives

- Define a mobile application.
- Understand components found in a mobile application.
- Learn the key scenarios where mobile applications would be used.
- Learn the design considerations for mobile applications.
- Identify specific scenarios for mobile applications, such as deployment, power usage, and synchronization.
- Learn the key patterns and technology considerations for designing mobile applications.



## Mobile and Smartphone Applications



### Mobile Phones

A **mobile phone** (also called **mobile**, **cellular telephone**, **cell phone**, or **hand phone** is an **electronic device** used to make

1. **Calls across a wide geographic area.**
2. **Send Text SMS**
3. Can see call records
4. Can capture image
5. Can run music
6. Can browse web etc.

To learn about mobile phones in details:

[http://en.wikipedia.org/wiki/Mobile\\_phone](http://en.wikipedia.org/wiki/Mobile_phone)

You'll get detailed history about how this technology evolved over the years



# Mobile and Smartphone Applications



## Smart Phones Platforms

Android



iPhone



BlackBerry



Palm Pre



# Why Android Platform?



- **Technical Advantages**

- Android is built upon an **open-source platform**, and most of the Android code is released under the free software/open source Apache License.
- **Rich and easy to integrate feature sets.**
- Android applications are written in **the Java programming language**, which is a powerful, mature and very widely adopted language.
- **Easy to learn** than Apple's Objective-C
- **Inter-Application communication** is easier.

- **Business Advantages**

- **Android Market** — is much more of an open marketplace than Apple's iTunes App Store.
- **No delay for approval** of submitted application. So you can reach your users fast.



## What is Android



Android is a **software stack for mobile devices** that includes an **operating system, middleware and key applications**. The Android SDK provides the tools and APIs necessary to begin developing applications on the Android platform using the Java programming language.

**Google** describes **Android** as:

The first truly **open** and **comprehensive** platform for mobile devices, all of the software to run a mobile phone but **without the proprietary obstacles that have hindered mobile innovation**.

## Android Features



### Features

1. Application framework
2. Dalvik virtual machine
3. Integrated browser
4. Optimized graphics
5. SQLite
6. Media support
7. GSM Telephony
8. Bluetooth, EDGE, 3G, and WiFi
9. Camera, GPS, compass, and accelerometer
10. Rich development environment

## Setting up Development Environment(Contd.)



To set up the development environment, we need:

1. Java Development Kit (JDK 1.5+, 1.6 is preferable)
2. Eclipse IDE
3. Android SDK



# Setting up Development Environment (Contd.)



**Eclipse IDE** Download Link: <http://eclipse.org/downloads/>

**eclipseCON™ 2011**  
March 21<sup>st</sup> - 24<sup>th</sup> Santa Clara, CA **Last week** for early registration!

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**Download the highlighted version of Eclipse IDE**

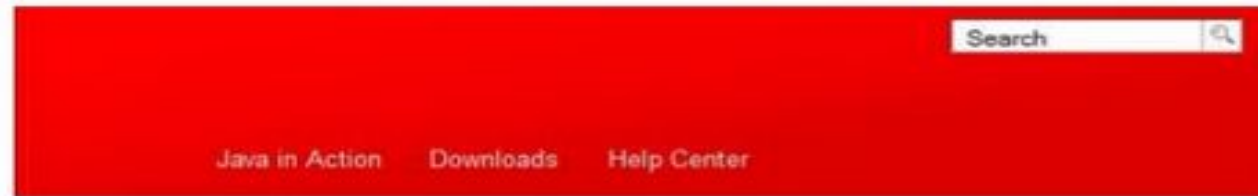


## Setting up Development Environment (Contd.)



### Java Development Kit (JDK)

Download Link: <http://www.java.com/en/download/index.jsp>



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**Download JDK from here and Install JDK**

## Setting up Development Environment (Contd.)



**Android SDK** Link: <http://developer.android.com/sdk/index.html>

android  
developers

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### Android SDK Starter Package

#### Download

Installing the SDK

#### Android 3.0 Preview

Platform Highlights new!

SDK new!

#### Downloadable SDK Components

Adding SDK Components

Android 2.3.3 Platform new!

Android 2.3 Platform

Android 2.2 Platform

Android 2.1 Platform

Android 1.6 Platform

Android 1.5 Platform

Older Platforms

SDK Tools, r9 new!

Google USB Driver, r4

ADT Plugin for Eclipse

### Download the Android SDK

Welcome Developers! If you are new to the Android SDK, please read the steps below, for an overview of how to set up the SDK.

If you're already using the Android SDK, you should update to the latest tools or platform using the *Android SDK and AVD Manager*, rather than the *Android SDK Manager*. See [Adding SDK Components](#).

Platform	Package	Size	MD5 Checksum
Windows	<a href="#">android-sdk_r09-windows.zip</a>	32779808 bytes	1a1bb8fad80bcc2dfbd00443b9a13e6b
	<a href="#">installer_r09-windows.exe</a> (Recommended)	32828818 bytes	a0185701ac0d635a4fb0169ac949a3c5b3d31e0
Mac OS X (intel)	<a href="#">android-sdk_r09-mac_x86.zip</a>	28829553 bytes	ef3102fdbbbbd9b4d9b572624aa9dc1
Linux (i386)	<a href="#">android-sdk_r09-linux_x86.tar.gz</a>	26917824 bytes	9fefac5885d329836439f6e77a78cae

Download and Install the SDK starter package from the table above  
(Highlighted)

