

MOBILE INTERNET APPLICATIONS— XML-based Languages

Lesson 01

Mobile Application Development

A MOBILE APPLICATION

- Performs computations using a programming language
- Presents messages, alerts, data objects, contents, and information across applications, clients, and servers
- Uses markup languages

MOBILE INTERNET APPLICATIONS

- Applications and application programming interfaces (APIs) for accessing Internet through mobile hand-held devices for Web applications or apps

AN APP DEVELOPER

- Creates a Web app
- Browser-supported programming language and framework
- Web app languages– HTML, cascaded style sheets (CSS), scripting languages such as JavaScript and hypertext preprocessor (PHP).

MOBILE INTERNET APPLICATIONS

- Web apps are client–server computing-based applications that run using a Web browser
- Browser functions as a client

MOBILE INTERNET APPLICATIONS

- Server has DataStore, web objects, pages, and databases.
- The server sends responses on a client request after computations using the DataStore.

APIs

- APIs software for
 - (a) programming the graphic user interfaces (GUIs),
 - (b) accessing a database,
 - (c) integrating new features into an existing plug-in API

APIs

(d) specifying interactions and sharing among the different apps and software components, and

(e) access to the hardware video card or similar devices.

STANDARD APP DEVELOPMENT FRAMEWORK

- Enables simple and automatic creation and use of GUIs
- Provides the underlying code structure of the application in advance
- Provides a standard structure for applications

STANDARD FRAMEWORK

- Customizes GUIs as per the need of the application and vision of the application developer

APP DEVELOPMENT WORKFLOW STEPS

- Selecting and using integrated development environment (IDE) or a framework for a specific platform for the APIs.
- Testing and debugging of application executables on a simulator or emulator.
- Developing GUIs, touch screen UIs, and gesture-based UIs

APP DEVELOPMENT WORKFLOW STEPS

- Users of the device and designing screen layouts for the Uis
- The GUIs of the application are written using the GUI development APIs.

PACCKAGING AND WEB HOSTING

- Packaging the app for installation on the device for a service provider or application distributor.
- Web hosting of executables at an application store or mobile app distribution platform (e.g., AppStore for iPhone, iPad, and Mac).

PACCKAGING AND WEB HOSTING

- Web hosting enables download and installation of the app at user devices.
- Deploying the app at the device (e.g., using packaging as jar file)

TECHNIQUES FOR COMPOSING APPLICATIONS USING PROGRAMS

(1) Applications (software for application) written using a set of the statements, functions, methods, threads, objects, and classes. High-level languages such as C, C++, Java, Visual Basic, Visual C++, or Python native codes are used for that purpose.

TECHNIQUES FOR COMPOSING APPLICATIONS USING APIs

(2) Applications written using APIs,
An API enables easier development of an application. The API provides the blocks for application building. These blocks are put together to write an application. All applications using a common API will have similar interfaces. This also makes it easier for users to learn writing new programs.

TECHNIQUES FOR COMPOSING APPLICATIONS USING FRAMEWORK

(3) Framework (dot Net or Qt) used for writing application software and APIs (dot.Net needs Windows as an OS-based platform. Qt is a cross-platform. The app developed using that can run on various hardware and software. The app developer needs little or no change of codebase.)

USING THE APIS PROVIDED BY A DEVELOPMENT PLATFORM

(4) Applications written using OS X used and development platform provided, such as Android and iOS.

USING PROGRAMMING LANGUAGE AND IDE

- IDE includes the simulator, emulator, and debugger
- An installer enables packaging of the application
- An app pre-installed in the mobile device, can be downloaded from an application store, or using an application distribution environment.

APPLICATION STORES

- Apple and others provide these application stores or distribution environments. The following is an example of a platform.

SUMMARY

- Application development using Programming language
- Using APIs
- Using Framework
- Using IDE
- Installing the App
- Distributing the app using application stores

... SUMMARY

- DOM model
- Hierarchical structure
- Entire document parsed first and then parsing creates hash table of keys and corresponding values for each key
- XML document data after parsing used in number of applications and databases
- Metadata also used in the applications

End of Lesson 01

Mobile Application Development