

MOBILE OSS, DEVELOPMENT ENVIRONMENTS, IOS AND ANDROID

Lesson 02

Development-Process Phases

DEVELOPMENT PROCESS

- Distinct for wireless and mobile devices and handhelds
 - (a) Takes into account issues typical to wireless environment, and limited resources and device environment which means memory, continuous network connectivity, device network protocols, and energy needs.

DEVELOPMENT PROCESS

(b) Take into account issues of (i) diversity of the devices (Apple, Microsoft–Nokia, Samsung, and others) and (ii) diversity of networks (GSM, GPRS, HSPA, CDMA, 4G and others). App development need to be on same type of machines for which it is targeted.

DEVELOPMENT PROCESS

(c) Needs appropriate UIs taking into account ease of using an app at available display area

DEVELOPMENT-PROCESS PHASES

1. Needs and Requirement analysis phase,
2. Design phase,
3. Implementation and testing phase, and
4. Deployment phase

REQUIREMENT ANALYSIS PHASE

- Functions in App
- Device type
- Device platform (Android, iOS)
- Data source (GUI, Mail)
- Data integration
- Hardware and software architectures
- Extra functional properties

DESIGN PHASE

- Abstraction
- Hardware and software architectures design
- App connectivity, synchronization, and wireless connectivity design
- User interfaces and human interactions design

DESIGN PHASE

- System-related apps of designs
- Modular design
- Mapping
- Refinements of design

IMPLEMENTATION AND TESTING PHASES

- Three categories of implementation:
 - (a) native (e.g., iOS applications for iPhone),
 - (b) cross-platform-to-native (hybrid), and
 - (c) mobile Web (app using Web to synchronize data with server, enterprise, or Cloud)

IMPLEMENTATION OPTIONS

- Mobile OS: iOS 11, Android Oreo
- Markup language for Programming :
HTML 5, HTML5/CSS3— a fast-evolving
markup

IMPLEMENTATION OPTIONS

- Scripting language: JavaScript with jQuery Mobile, ...
- Programming language: Java, C#, or Python.
- Framework DotNet, Qt

DEPLOYMENT PHASE

- Prototype tested first. Prototype product simulates the final product. Prototype need not be a complete application.
- Running an app in a device environment after the testing done on a device emulator

TESTING PHASE

- An implementation running, testing, and debugging on device emulator
- Errors found in a testing phase taken note of and corrected using an editor
- Developer compiles code again, the compiled file runs again, tested and debugged, the process iteratively repeated.

PROTOTYPE TESTING STAGE

- Whether
 - (a) security addressed in the app
 - (b) device platform (hardware and OS resources) suitable
 - (c) UI efficiency and user validation for the UIs efficiently functioning

PROTOTYPE TESTING STAGE

(d) client-side DataStore appropriate for running the app

(e) wireless connectivity and protocol use
render the server data as and when required

(f) enterprise integration as per the requirement

PROTOTYPE TESTING PHASE

(g) Easy path availability for an app upgradation, or too much efforts will be required for the next upgradation

SUMMARY

- Development process phases
- Need and Requirements analysis
- Design
- Implementation and Testing
- Prototype testing
- Iterative refinements
- Deployment

End of Lesson 02

Development-Process Phases