I. INTRODUCTION TO MOBILE ARCHITECTURE (CREDITS:6)

Section-A

Unit I: Introduction to Mobile App, Objectives of Mobile App, Considerations and Challenges for Mobile App, PC Based Applications, Web Based Applications, Evolution of Mobile Based Apps, Comparison of Mobile App with Web Application, Content and Protocol in Mobility, Trends in Mobility Space, Mobile App Platforms

Unit II: Components of a Mobile Application: Architecture of a Mobile Application, Architecture of a native Mobile App, Architecture of a hybrid Mobile App, Architecture of a Mobile Web App, Components of a Mobile Client Application, Components of Mobile Support Infrastructure, End to End Case Study of Android Mobile Architecture, Basics of Mobile Application Design: Design Considerations, User Interface Design for Mobile Apps, Deployment, Power Usage, Synchronization, Patterns and Design Elements, Security Standards and Best Practices, Mobile App Testing

Unit III: Introduction to Mobile Operating Systems: Basic Functions of an Operating System, Mobile Operating Systems: Layer 0, Layer 1, Layer 2, Architecture of Android, Knowing the Operating System of a Mobile Phone, Discontinued Mobile Operating Systems, Existing Mobile Operating Systems, Types of Mobile Operating Systems, Basics of Android: Objectives, Interface, Applications, Memory Management, Virtual Reality

Unit IV: Basics of iOS: Objectives , Accessibility, Multitasking, Siri, Setting up Siri, Launching Siri , Game Center, Basics of Windows Mobile: Evolution of Windows Phone, Features of Windows Phone, Virtual Private Networking, Windows Phone 7, Windows Phone , Windows 10 Mobile

Section-B

Unit V: Mobile Processors, ARM Processors, Features of ARM processor, ARM architecture, x86 Processors, Basic Design of x86 Processor, Instruction Execution Cycle, Differences Between x86 and ARM Processors, Memory in a Mobile Phone: Volatile Memory, Non-Volatile Memory, Memory Card, ROM, Flash Memory, Differences between NOR and NAND flash memories

Unit VI: Sensors: Gyroscope, Accelerometer, Types of Accelerometer, Specification of an Accelerometer, Output of an Accelerometer, Applications of an Accelerometer, Compass, Proximity Sensor, Input-Output: Display, Camera, Speakers, Active Speakers, Passive Speakers, Microphones, Types of Microphones, Native Development Tools: Native Development Tools: Development Tools for Android, Android Studio, Eclipse IDE, Development Tools for iOS, Xcode, Swift, Development Tools for Windows Based Mobiles, C#, XAML

Unit VII: Various Approaches for Cross Platform Mobile App Development: Web Based Cross Platform Mobile App Developm ent, Hybrid Approach for Cross Platform Mobile Ap p Development, Single Language Approach for Cross Platform Mobile App Development, Mobile Middleware Approach for Cross Platform Development, Xamarin, Xamarin.Android, Xamarin.iOS, Phone Gap, Developing an Android App in Phone Gap, Developing an iOS App in Phone Gap, Advantages and Disadvantages of Cross Platform Mobile App Development Tools

Unit VIII: Google Play Store, Prerequisites for Publishing Android Apps to Google Play Store, Apple App Store, Prerequisites for Publishing Apps to Apple App Store, Windows Store: Pre-requisites for Publishing Apps to Windows Store, Monetizing Android Apps: Freemium Distribution Model, Paid Distribution Model, Affiliate Partnership Model, Commission Model, White Labeling Model, Publishing to Amazon App Store, Monetizing iOS Apps, Monetizing Windows Apps, Choosing Right Mobile Ad Strategy, Defining the Success Metrics, Mobile Ad Selection Based on Business Strategy, Monitor Ads