Software Architecture Content in SMA

1. Abstraction that focuses on structure, uses, and issues
2. Describes Goals, Uses,Tasks, Partitions, Interactions, Events, Views, Performance
3. Application platforms have architectures. For .Net:
    a. File handling with Path and Directory packages
    b. Process handling with Process, AppDomain, and Context classes
    c. Interface construction with WinForms and Windows Presentation Foundation (WPF)
        i. WPF is a radical change from past GUI frameworks
        ii. Interesting management of dependencies and properties
        iii. Similar to Browser rendering
    d. Communication with Sockets, Remoting, and Window Communication Foundation (WCF)
        i. WCF provides a flexible channel construction mechanism with a common programming model for: named pipes, sockets, and TCP/IP
    e. Application support with:
        i. XML DOM and reader processing using XmlDocument and XmlNode classes
        ii. LINQ which uses an SQL like syntax for XML DOM processing using XDocument and XElement classes
        iii. Object-based and generic containers
4. Applications have Architectures:
    a. Client-server
        i. Web applications are an interesting example
        ii. Originally stateless document centric
        iii. Became data management and code generation on server side, interesting rendering on client browser side
        iv. Now moving toward state management shared by browser and server
    b. N-Tier
        i. Separates presentation, data management, and application logic through interfaces so each can be changed without large changes to other parts
    c. Peer-to-Peer
        i. Autonomous units that collaborate
        ii. Both send and receive messages
    d. Role-based Peer-to-Peer
        i. Servers that each manage specific set of activities
        ii. May send messages as well as respond to requests