.Net Full Stack Day Wise TOC

Abstract Methods		
Overload Methods, Override Methods		
Interfaces		
Defining Interfaces		
Inheritance of Interfaces		
Implementing interfaces		
Benefits of interfaces		
Day 4:		
Structured Exception Handling		
Exceptions		
Types Of Exceptions		
Built-In Exceptions		
User-defined Exceptions		
Try, Catch, Finally		
Throwing Exceptions		
Rethrowing an Exception		
Exception Hierarchy		
Day 5:		
Collections		
Overview of Collections		
List, Stack, Queue, Dictionary		
Custom Collections		
Algorithms		
IDisposable		
Building Disposable Objects		
ICollection, IDictionary and IList		
Using ArrayList, HashTable and SortedList		
Implementing IEnumerable and IEnumerator Interface		
Defining Custom Collections		
Working with Generic Collections in .NET		
Day 6:		
Delegates and Events, Reflection and Attributes		
Introduction		
Introduction to Delegates		
Working with Delegates		
Multicast Delegates		
Dynamic Invocation of Methods		
Reflection and Attributes		
Reflections in .Net		
The Type Class		
Loading an Assembly		
Consuming a class instance from a dynamically loaded assembly using reflection Attribute Fundamentals		
Compile-time and Runtime Attributes		
Attributes and Runtime Behavior		
Day 7:		
Streams		
Definition of Streams		
Types of Streams BufferedStream FileStream		
MemoryStream		

File and Directory Classes		
Stream Reader		
Stream Writer		
Serialization Concepts		
Day 8:		
Assemblies		
Private, Shared and Satellite Assemblies		
Strong Names		
Versioning		
Assigning Public Key to Assemblies		
Configuring Assemblies		
Benefits of Assemblies over DLL		
Day 9:		
Unit Testing with MS Test		
Introduction to unit Testing		
Test case and Test Suite		
Visual Studio and it's interface Data driven test		
Test Coverage using code coverage Creating and running test cases in VS Error levels.		
Purpose of build tool		
Project, target and tasks		
Sample project to compile Unit Test Reports		
Improving test using Stubs and Mocks		
Dummies		
Fakes		
Stubs		
Day 10:		
Threads		
Introduction to Threads		
Creating and Starting Threads UI and Background Threads		
Suspending and Resuming Threads		
Synchronization Objects		
Monitor		
Mutex		
ReaderWriterLock		
Working with ThreadPool		
Day 11,12,13:		
Data, SQL		
Entity Relationship Modelling		
Data Modelling Normalization		
ERP Database Implementation		
Data Integrity		
Relational DBMS MS SQL		
Data Types		
DQL (Data Query Language)		
DML (Data Manipulation Language)		
DDL (Data Definition Language)		
DAL (Data Administration Language)		
T-SQL		
Stored Procedures		
Functions		

Transactions – Commit and Rollback		
Exceptions and Error Handling		
Day 14,15:		
ADO.NET		
A Brief History of Data Access in Microsoft Stack		
Overview of ADO.NET		
Managed Providers		
Introduction to a provider neutral object (DataSet)		
The Connection Object		
The Command Object		
Managing Transactions The DataReader Object DataAdapters and DataSets		
Programming the DataSet Stored Procedures		
Day 15,16:		
LINQ Essentials - Linq to Object and Linq to XML		
Language Enhancements		
Implicitly typed local variables		
Anonymous types		
Extension methods		
Partial Methods		
Object Initialization Syntax		
Collection Initialization Syntax		
Lambda expressions		
Query expressions		
Expression Trees		
LINQ Fundamentals		
The Role and Scope of LINQ		
Lambda and Closure		
Use of Extension Methods / Lambdas with LINQ		
Core LINQ Assemblies / Namespaces / Project Types		
Understanding and Working with LINQ Syntax		
Examining LINQ Query Operators		
The Query Operator - LINQ type relationship		
Building LINQ Query Expressions		
LINQ Over Objects		
LINQ Over XML		
Day 17,18,19,20:		
HTML, CSS & JavaScript		
Evolution of Internet		
HTML Structure, Adding Media		
Page Layout		
BootStrap		
DOM and Compatibility		
Cascading style sheets (CSS)		
CSS3 Essentials		
JavaScript Fundamentals		
Day 21,22,23,24,25:		
ASP.NET MVC		
Introducing ASP.NET MVC		
Controllers and Actions in MVC Views in MVC		

HTML 5 Project Templates		
Working with the Razor Engine		
Model Templates in MVC		
Model Binding in MVC		
Model Validation in MVC Filters in MVC		
Razor and ASP.NET MVC Security		
Understanding ASP.Net Authentication Modes		
Working with Forms Authentication		
Using the MVC Framework Securely		
Introduction to Dependency Injection		
Day 26,27,28:		
ADO.NET Entity Framework		
Introducing the Entity Framework		
The Entity Data Model		
Creating an EDM		
Taking a Model-First Approach		
Generating a Schema and Database		
Managing Table Inheritance		
Taking a Code-Only Approach		
The Entity Data Model Inside and Out Code-Only Development		
Handling performance problems		
Using POCO Classes with the Entity Framework		
Building an N-Tier Solution by Using the Entity Framework Designing an N-Tier Solution		
Defining Operations and Implementing		
Data Transport Structures		
Protecting Data and Operations		
Day 29,30:		
Unity – Dependency Injection		
Dependency Injection – Why?		
Separation of Concerns – MVC Architecture		
Loose Coupling		
Cross Cutting Concerns		
Factory and It’s concerns		
Dependency Injection With Unity		
Types of Injection		
Property Set		
Method Call		
Lifecycle of Dependency Injection		
Register		
Resolve		
Dispose		
Run time Injection.		
Registration by Generic Types Containers – Parent and Child		
Aspect Oriented Programming		
Interception – Instance and Type Interception with Unity		
Best Practices – Real World Problem:		
Defining the contract		
Implementing the contract		
Using the implementation as a type of interface Why program to an interface		

Handling variable implementation		
Exceptions as channels of communication		
Using a factory for client maintainability		
Configuration for the factory		
Using reflection to create the instances Separation of concerns		
Discovering abstractions		
What needs to be encapsulated?		
Building the core model components		
Writing the model façade class		
Strategies for design entity classes for handling the transfer data		
Making the application multi-threaded Defining the configuration information		
Day 31,32,33,34,35:		
Web API		
Getting Started with ASP.NET Web API 2		
Your First ASP.NET Web API		
ASP.NET Web API		
Creating a Web API that Supports CRUD Operations		
List of ASP.NET Web API and HttpClient Samples		
Using Web API with ASP.NET MVC		
Calling a Web API From a .NET Client		
Day 36,37,38,39,40,41,42:		
TypeScript with Angular		
ECMA Scripting and Standards TypeScript Essentials		
Classes and Interfaces		
Objects and Arrays		
Constructors		
Modules and Namespaces		
Collections and Iterators		
Types and Generics		
TypeScript and Angular		
Angular Essentials		
Components and Binding		
Directives, Pipes and Transformation		
Routing and State Management		
Rxjx and Interaction		
Forms and Interaction		
Services and http		
Async Programming SPAs and Multi-Page Apps		
Working with Libraries		
Unit Testing with Jasmine		
Architecture and Folder Structures		
Day 43:		
DevOps with Azure		
Source Code Management		
Branching, Merging, Conflicts		
Build and Deploy Essentials		
Azure DevOps		
Master - Dev - Feature Branches		
Monitoring and Debugging App Insights and Analytics		

Day 44:		
MicroServices		
Introduction to Microservices		
Microservice Architecture		
Create a Microservice using Web API		
Day 45:		
Azure Cloud		
Introduction to Cloud Computing		
Cloud Service Models		
Cloud Deployment Models		
Cloud Service Providers		
Advantages of Cloud Computing		
Deploy an Application to Cloud		
Day 46:		
Introduction to Agile Scrum		
Scrum Framework		
Scrum vs Agile		
Scrum Principles		
Scrum Roles, Scrum Artifacts and Scrum Events		
Managing a project in Azure Devops using Agile Scrum		
Day 47,48,49,50:		
Project Competencies:		
Project Orientation and Induction		
Domain Introduction.		
Key Stakeholders, Objectives and Progress Tracker.		
Backlogs - Functional, Performance, Security Focus Areas.		
Engineering Environment.		
Agile and DevOps Essentials and Microsoft Azure DevOps		
GIT Repository - Quick Walkthrough, Deployment Environment on Azure		
Architecture Engineering		
Solution Architecture		
Tech Architecture		
Integration Services		
Design Best Practices		
Error Loggers and Analytics		
DevOps Architecture		
DB Architecture		
Performance and Security Engineering		
Project Implementation		
Project Execution		
Project Closure Project Presentation		