**FULL STACK DEVELOPMENT COURSE SYLLABUS**

**MINGGU I : INTRODUCTION TO FULL STACK DEVELOPMENT**

HARI I :

1. Introduction To What Is Full Stack Development
2. Common Role Separation on Software Development Process
   1. Project Manager
   2. System Analyst / Business Analyst
   3. UI / UX
   4. Programmers

General Software Architecture Task Separation

* Frontend Development Task (Desktop, Web Application and Mobile Application)
* Backend Development Task (Server Based Application and Service Based Application)

1. Introduction to Software Development Tools
   1. Development Language
      1. Layout and Data Language ( HTML, XML, JSON, CSV)
      2. Programming Language ( Javascript, Java, PHP, Kotlin, C#/NET/Visual Basic, Go etc)
      3. Database Engine and its Query Languange
         1. SQL Based and NoSQL Based Database Engine
         2. Query Language : SQL language and JSON Query
         3. ORM / ODM
   2. Development Tools
      1. IDE / Code Editing Tools ( Atom, Netbeans, Eclipse, Android Studio, Visual Studio Code, Notepad++ )
      2. UI Mockups Tools : Figma, Adobe XD
      3. Source Control : GIT (Gitlab, Github, Atlassian Bitbucket), SVN
      4. Testing Tools : Web Browser, Postman, Selenium etc
      5. Project Management Tools :
         1. Kanban : Trello, Github Project Kanban, Attlasian Jira,
         2. CI / CD : Jenkins

HARI II : INTRODUCTION TO SOFTWARE PROJECT MANAGEMENT PRACTICE

1. Between Waterfall and Agile Development
2. Introduction To Scrum
   1. Team Roles
   2. Scrum Activities
   3. Scrum Simulation
3. Introduction To GIT and its usage
   1. Initializing A Project ( Local or Remote ) : git init
   2. Adding, Removing, Viewing Status, View Log, Commiting Work
      1. git status,
      2. git add,
      3. git commit,
      4. git log
   3. Working with Remote Repository
      1. git remote, fork, git fetch
      2. git pull, git push, git stash
   4. Working with Branch
   5. Handling Conflict and Merging

CONCEPT REVIEW & TEST

HARI III : INTRODUCTION TO PROGRAMMING LANGUAGE CONCEPT

1. VARIABLES, DATA, DATATYPES and OPERATORS
2. STATEMENT and BLOCK STATEMENT and NESTING
3. SCOPE and CODE STRUCTURE
4. CONTROL STRUCTURES : LOGICAL BRANCHING (IF, SWITCH), LOOPS (FOR, FOREACH, WHILE)
5. FUNCTION / METHOD and PARAMETERS, BY REFERENCE and BY VAL, between return VOID and return VALUE
6. COMPLEX DATA TYPES : ARRAY and STRUCTURE
7. ADVANCE COMPLEX DATA TYPE : OBJECT and INTERFACE
8. OBJECT ORIENTED PROGRAMMING
9. ERROR HANDLING

JAVASCRIPT PROGRAMMING LANGUAGE - I

1. VARIABLES, DATA, DATATYPES and OPERATORS
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5. FUNCTION / METHOD and PARAMETERS, BY REFERENCE and BY VAL, between return VOID and return VALUE
6. COMPLEX DATA TYPES : ARRAY and STRUCTURE
7. ADVANCE COMPLEX DATA TYPE : OBJECT
   1. OBJECT Components
      1. FIELD
      2. METHOD
      3. PROPERTY
      4. EVENTS
   2. Extending OBJECT (Proxy and Reflection)

1. COMMON JAVASCRIPT OBJECT :
   1. OBJECT
   2. STRING
   3. ARRAY
   4. MATH
   5. WINDOW
   6. BROWSER
   7. CONSOLE
   8. DOCUMENT

HARI IV : CONCEPT REVIEW and TEST

HARI V : INTRODUCTION TO USER INTERFACE AND DATABASE CONCEPT

INTRODUCTION TO USER INTERFACE CONCEPT

1. LAYOUT Concept
   1. Basic Application Layout
   2. Tabular, Grid, Column Layout
2. LAYERS and POSITIONING Concept and Its Implementation
3. Common Box Model used In Layout :

Margin, Padding, Border,

INTRODUCTION TO DATABASE

1. What is Database, Types of Database, Database Engine
2. Introduction to Database Structure and Database Design
3. Object Oriented Programming in relation with Database Design
4. Working with Query Language

- Introduction To SQL

HARI VI : CONCEPT REVIEW and TEST

**MINGGU II : FRONT END DEVELOPMENT I - WEB APPLICATION**

HARI I :

1. What is XML, HTML/XHTML
2. Common XML Rules and Syntax
   1. Basic XML Structure, Nodes,
   2. TAGS and PROPERTY
   3. DOCUMENT OBJECT MODEL (DOM)
   4. DOM PATH : TAGNAME, ID, CLASS, ATTRIBUTES
3. XML as a Data Model and Introduction to JSON and other text base data model
4. Introduction HTML
   1. Basic HTML structure
   2. Common HTML Elements :
      1. HEAD element and Its children
         1. TITLE
         2. META
         3. LINK
         4. SCRIPT
      2. BODY
         1. Common HTML Object :
            1. Text and Media :

SPAN, P, STRONG, B, EM, BLOCKQUOTE,

IMG

* + - * 1. Forms :

INPUT, TEXTAREA, SELECT, FILE, FIELDSET

* + - * 1. Layout :

LIST, TABLE, LAYER

* + - * 1. Container : IFRAME
        2. Navigation : LINK and BUTTON
        3. Custom Element
      1. Common HTML Property :
         1. Element ID
         2. Element Name
         3. Element Class
         4. Element Style
         5. Custom Property

1. Introduction To Styling HTML Elements
   1. Inline Styles vs Using Files
   2. Element Styling :
      1. Working With Color : Foreground and Background
      2. Working With Fonts and Text Formatting
      3. Working With Element Boxing

HARI II : PRACTICE : BASIC XML HTML and CSS PRACTICE

HARI III : ADVANCE CSS I

CSS Metric

CSS Positioning

Viewport and Overlay

Layout : GRID, FLEXBOX

Animation and Transition

Building Responsive Website

HARI IV : PRACTICE

HARI V : ADDING INTERACTIVITY USING JAVASCRIPT AND JQUERY

INTRODUCTION to Javascript for Client

Basic Javascript

JAVASCRIPT PROGRAMMING LANGUAGE - II

Extending Object in Javascript

1. COMMON JAVASCRIPT OBJECT :
   * 1. OBJECT
     2. STRING
     3. ARRAY
     4. MATH
     5. WINDOW
     6. BROWSER
     7. CONSOLE

ADDING INTERACTIVITY USING JAVASCRIPT AND JQUERY

JQUERY OBJECT : $ / jQuery

Element Access using Javascript and JQuery

Modifying Element Property using Javascript / JQuery

Working with Browser Storage : Cookies and Local Storage

Element Access using Javascript and JQuery way

Modifying Element Property using Javascript/JQuery

Working with Browser Storage : Cookies and Local Storage

HARI VI : PRACTICE

**MINGGU III : FRONT END DEVELOPMENT I - WEB APPLICATION - CSS FRAMEWORK**

HARI I :

1. Introduction To CSS and Javascript Framework
2. Popular CSS and Javascript Framework
   1. CSS
      1. Bootstrap
      2. Bulma
      3. Foundation
      4. Ionic
   2. Javascript
      1. JQuery / Zepto
      2. Kendo UI
      3. Sencha / Ext JS
      4. Angular JS
      5. React
      6. Vue
3. Introduction To Bootstrap
4. Bootstrap Layouts
5. Bootstrap Components

HARI II : BOOTSTRAP

1. Bootstrap Layout : Container and Grid System
2. Common Bootstrap Components :
   1. LIST - LISTGROUP, DROPDOWN, NAVS
   2. BUTTONS and BUTTON GROUP
   3. ALERTS and MODALS : ALERT, TOAST, MODALS
   4. FORMS : INPUT, INPUT GROUP, SELECT, FILE
   5. CARD / PANEL

HARI III-IV : BOOTSTRAP PRACTICE

Eash student will be given at least 3 page wire frame that she/he should make using Bootstrap

HARI V : INTERACTION WITH BACKEND SERVER

Interaction WEB Application Request Model

Request Method Types

Calling Other Page using Link in HTML

Calling Other Page using Forms

Using AJAX Call and Processing

HARI VI : PRACTICE

**MINGGU IV : FRONT END DEVELOPMENT I - WEB APPLICATION - CSS FRAMEWORK**

**MINGGU V : FRONT END DEVELOPMENT I - WEB APPLICATION - REACT JS I**

**MINGGU VI : FRONT END DEVELOPMENT I - WEB APPLICATION - REACT JS II**

**MINGGU VII : FRONT END DEVELOPMENT I - WEB APPLICATION - REACT JS II**

**MINGGU VIII : BACKEND DEVELOPMENT I - WEB APPLICATION - NODE JS BASIC**

**MINGGU IX : BACKEND DEVELOPMENT I - WEB APPLICATION - NODE JS USING EXPRESS**

**MINGGU X : BACKEND DEVELOPMENT I - WEB APPLICATION - NODE JS USING SEQUELIZE AND MONGOOSE**