HTML

**Day 1**

* HTML Introduction.
* HTML Editors
* What are HTML Tags and Attributes?
* HTML tags vs Elements
* HTML Attributes
* HTML Basic Tags.
  + Defines a single line break <br>
  + Defines HTML headings <h1> - <h6>
  + Defines preformatted text <pre>
  + Horizontal rule <hr>
* Formatting Elements
  + Bold text - <b>
  + Important text - <strong>
  + Italic text - <i>
  + Marked text - <mark>
  + Deleted text - <del>
  + Subscript text - <sub>
  + Superscript text - <sup>

**Day 2**

* HTML Grouping
  + DIV tag
  + SPAN tag
* HTML Lists
  + Unordered List
  + Ordered List
* HTML Image
  + Image
  + Image mapping

**Day 3**

* HTML Table
  + Defines a table <table>
  + Defines a header cell in a table. <th>
  + Defines a row in a table. <tr>
  + Defines a cell in a table. <td>
  + Defines a table caption. <caption>
  + Specifies a group of one or more columns in a table for formatting. <colgroup>
  + Specifies column properties for each column within a <colgroup> element. <col>
  + Groups the header content in a table. <thead>
  + Groups the body content in a table. <tbody>
  + Groups the footer content in a table. <tfoot>
  + Table Colspan & Rowspan

**Day 4 and 5**

* Global Attributes (class, hidden, id, style, tabindex, title)
* Input type Attributes (accept, alt, autofocus, checked, disabled, height, list, max, maxlength, min, minlength, name, placeholder, readonly, required, src, value, width)
* HTML Forms tags
  + Display label
  + Displays a single-line text input field.
  + A multi-line text input control (text area)
  + Displays a radio button.
  + Displays a checkbox.
  + Drop Down Box.
  + Displays a submit button.
  + Displays a button.

**Day 6**

* HTML DOM Objects
  + FileUpload Object
  + Hidden Object
  + Month Object
  + Number Object
  + Password Object
  + Range Object
  + Time Object
  + Week Object

CSS

**Day 1**

* Introduction to CSS
* What is CSS?
  + CSS stands for Cascading Style Sheets
  + CSS describes how HTML elements are to be displayed on screen, paper, or in other media
  + CSS saves a lot of work. It can control the layout of multiple web pages all at once
  + External stylesheets are stored in CSS files
* Why Use CSS?
  + CSS is used to define styles for your web pages, including the design, layout and variations in display for different devices and screen sizes.
* Types of CSS
  + External CSS
  + Internal CSS
  + Inline CSS
* Selectors in CSS
  + Simple selectors
  + Combinator selectors
  + Pseudo-class selectors
  + Pseudo-elements selectors
  + Attribute selectors

**Day 2**

* Comments in CSS
* CSS Colors
  + Text Color
* CSS Backgrounds
  + background-color
  + background-image
  + background-repeat
  + background-attachment
  + background-position

**Day 3**

* Borders
  + Border Style
  + Border Width
  + Border Color
  + Individual Border
    - border-top-style
    - border-right-style
    - border-bottom-style
    - border-left-style
* Margins
  + margin-top
  + margin-right
  + margin-bottom
  + margin-left
* Padding
  + padding-top
  + padding-right
  + padding-bottom
  + padding-left

**Day 4**

* Links
  + a:link - a normal, unvisited link
  + a:visited
  + a:hover
  + a:active
* Tables
  + Table Size
  + Width and Height
* Layout
  + display: none
  + display: inline
  + display: block

JavaScript

**Day 1**

* Introduction to JavaScript
* Comparison Operators
  + ==, === , !=, !==, >, <, >=, <=
* Logical Operators
  + &&, ||, !
* Ternary Operator
  + variablename = (condition) ? value1:value2
* Variables in JavaScript (var, let, and const)
* Variable Scopes
* Statements, Operators, Comments, Expressions, and Control Structures

**Day 2 and 3**

* String Properties and Methods
  + String Length
  + Property Access[0]
  + slice()
  + substring() / substr()
  + replace()
  + toUpperCase()
  + toLowerCase()
  + concat()
  + trim()
  + trimStart()
  + trimEnd()
  + padStart()
  + padEnd()
  + charAt()
  + charCodeAt()
  + split()

**Day 4 and 5**

* Number Methods and Properties
  + toString()
* Converting Variables to Numbers
  + parseInt()
  + parseFloat()
  + Number()
* MIN\_VALUE and MAX\_VALUE
  + Number.MAX\_VALUE
  + Number.MIN\_VALUE
  + Number.isInteger(value)
* Boolean Values
  + Boolean()
    - Boolean(10 > 9)
* Date Methods
  + getFullYear()
  + getMonth()
  + getDate()
  + getHours()
  + getMinutes()
  + getSeconds()
  + getMilliseconds()
  + getDay()

**Day 6 and 7**

* What is an Array?
  + Creating an Array.
  + Creating an Array with NEW keyword.
  + Changing an Array Element.
  + Accessing the First Array Element.
  + Accessing the Last Array Element.
  + Destructuring assignment
  + Looping Array Elements.
* Array Methods
  + pop()
  + push()
  + shift()
  + unshift()
  + concat()
  + splice()
  + slice()
* Converting Arrays to Strings
  + array.toString()
* JavaScript Objects

**Day 8 and 9**

* Introduction to javascript Functions.
* Types of function
  + The function declaration
  + The function expression
  + The arrow function
* Function parameters
  + Default parameters
  + Arguments Object
  + Rest parameters
* Some Advance Array Methods
  + every()
  + some()
  + forEach()
  + filter()
  + map()
  + sort()
  + reverse()

**Day 10 and 11**

* Advance Javascript Object
* Accessing JavaScript Object Properties
* Accessing JavaScript Object Methods
* Display JavaScript Objects
* JavaScript Sets
  + Set Methods and Property
    - new Set()
    - add()
    - delete()
    - has()
    - clear()
    - size
* JavaScript Maps
  + Map Methods and Property
    - new Map()
    - set()
    - get()
    - clear()
    - delete()
    - has()
    - forEach()
    - size

**Day 12, 13 and 14**

* JavaScript - HTML DOM Methods
  + Finding HTML Elements
  + Finding HTML elements by id
  + Finding HTML elements by tag name
  + Finding HTML elements by class name
* JavaScript Form Validation
* JavaScript HTML DOM - Changing CSS
* JavaScript HTML DOM Events
  + blur
  + change
  + click
  + dblclick
  + focus
  + focusin
  + focusout
  + keydown
  + keypress
  + keyup
  + mouseover
  + mouseout
* JavaScript HTML DOM EventListener
* JavaScript HTML DOM Collections

MySQL

**Day 1**

* Introduction to SQL
* What Can SQL do?
  + SQL can execute queries against a database
  + SQL can retrieve data from a database
  + SQL can insert records in a database
  + SQL can update records in a database
  + SQL can delete records from a database
  + SQL can create new databases
  + SQL can create new tables in a database
  + SQL can create stored procedures in a database
  + SQL can create views in a database
  + SQL can set permissions on tables, procedures, and views
* What is DBMS and RDBMS?
* What is Relation and Relationship?
* File System vs DBMS
* What is database?
* relational model concepts and properties of relational table.
* What is data?
* What is an Attribute?
* Entity Relationship Diagram?
* Degrees of relationship

**Day 2**

* What is SQL?
* Types if query language
  + Data Definition Language (DDL)
  + Data Manipulation Language (DML)
  + Data Query Language (DQL)
  + Data Control Language (DCL)
  + Transaction Control Language (TCL)
* Type of object in MySQL
* Login to MySQL
* Database Commands
  + CREATE DATABASE
  + USE DATABASE
  + SHOW DATABASES
  + DROP DATABASE

**Day 3**

* DATATYPES
  + string, numeric, date and time, boolean, enum, set
* CREATE simple table
* CREATE table ( with Default, auto\_increment column, generated column, visible / invisible columns, varbinary column)
* INSERT rows (Single row and Multiple rows)
* UPDATE rows.
* DELETE rows.

**Day 4**

* Alter table
  + Add new column
  + Change column
  + Modify column
  + Drop column
  + Add constraints
  + Drop constraints
* Introduction to constraints.
* Constraints
  + Primary key
  + Foreign key
  + Unique key
  + Check
  + Not null

**Day 5**

* MySQL SELECT Statement
* Capabilities of SELECT Statement
  + Selection, Projection and Joins
* comparison functions and operator
* column - expressions
* identifiers
* control flow functions
  + IFNULL
  + IF
  + NULLIF
  + CASE

**Day 6** and **7**

* Some Built-In functions
  + Datetime functions [ now(), curdate(), curtime(), + or - operator with date, ADDDATE(), SUBDATE(), addtime(), subtime(), extract() ]
  + Datetime formats
  + String functions [ ASCII(), CHAR(), CONCAT(), ELT(), STRCMP(), LCASE(), UCASE(), LENGTH(), LPAD(), RPAD(), REPEAT(), LEFT(), RIGHT(), LTRIM(), RTRIM(), BINARY, REPLACE(), REVERSE(),... ]
  + Mathematical functions [ ABS(), CEIL(), FLOOR(), MOD(), RAND(), ROUND(), TRUNCATE() ]

**Day 8** and **9**

* SELECT Statement
* Row Limiting clause
* Order By clause
* Where clause
* is null / is not null
* In Operator
* Between Operator
* Like Operator

**Day 9** and **10**

* aggregate functions (SUM, AVG, MIN, MAX, and COUNT)
* Group By clause
* Having clause
* Window function
* user-defined variables
* Select .... for update

**Day 11** and **12**

* Introduction to Joins
  + Cartesian or Product Join – Cross Join
  + Equijoin – Inner Join
  + Natural Join
  + Simple Join
  + Outer Join – Right Outer Join, Left Outer Join
  + Self-Join

**Day 13** and **14**

* Introduction to sub-queries
  + The Subquery as Scalar Operand – SELECT clause
  + Comparisons using Subqueries – WHERE / HAVING clause (Single row subquery)
  + Subqueries in the FROM Clause – INLINE VIEWS (Derived Tables)
  + Subqueries with ALL, ANY, IN, or SOME – WHERE / HAVING clause (Multiple row subquery)
  + Subqueries with EXISTS or NOT EXISTS
* sub-queries with DDL and DML statement
  + CREATE table with SELECT Statement
  + INSERT INTO SELECT Statement
  + UPDATE with SELECT Statement
  + DELETE with SELECT Statement

**Day 15**

* Set operation in MySQL
  + Union
  + Union all
  + Intersect
  + Minus
* Create Temporary table
* Truncate table
* Rename table
* Drop table
* COMMIT and ROLLBACK

**Day 16 and 17**

* View Object
* Index Object
* JSON Object

**Day 18**

* SELECT . . . INTO var\_list
* SELECT . . . INTO OUTFILE
* SELECT . . . INTO DUMPFILE
* IMPORT .csv / .tsv file
* Introduction to DATA DICTIONARY

**Day 19** and **20**

* Introduction PL/SQL
* Need of PL/SQL
* Introduction to Procedure.
* Difference between stored procedure and function?
* DELIMITER - statement
* BEGIN ... END compound-statement
* DECLARE variables
* IF and LOOP
* Programming with PROCEDURE (IN, OUT and INOUT parameters)
  + CREATE STORED PROCEDURE
  + DROP STORED PROCEDURE
  + CALL STORED PROCEDURE
* SOURCE and CALL STORED PROCEDURE
* CURSOR
* EXCEPTION

**Day 21**

* Introduction to Function.
* Programming with FUNCTION
  + CREATE STORED FUNCTION
  + DROP STORED FUNCTION
  + INVOKING STORED FUNCTION

**Day 22**

* Introduction to Triggers
* Programming with TRIGGERS
  + What is trigger\_time and trigger\_event?
  + NEW and OLD bind variables
* CREATE TRIGGERS
* DROP TRIGGERS

**Day 23**

* Normalization

MongoDB

**Day 1**

* Introduction to NoSQL
* Why NoSQL
* When to use NoSQL
* NoSQL Categories
* SQL vs NoSQL Database
* What is MongoDB
* Install MongoDB
* MongoDB Shell
* MongoDB Data Types
* Types of Data
  + Structured, Semi-Structured, and Unstructured
* Start db server.
* Start db client.
* Database operations
  + Create Database
  + Use Database
  + Show all Databases
  + Show current Database
  + Drop Database

**Day 2** and **3**

* Comparison operator
* Logical operator
* ObjectId()
* Collection operations
  + Creating collection.
  + Display all collections.
  + Drop a collection.
  + Rename a collection.
* Insert document in a collection
  + Inserting single document
  + Inserting multiple documents
  + Inserting document using variable
  + Capped collection.
  + isCapped()

**Day 4** and **5**

* Query document from collection
  + Finding all document from collection. (Selection process)
  + Finding all document from collection. (Projection process)
  + Finding all document from collection matching to the condition.
  + Giving alias name to fields
  + Finding all document from collection with pattern matching.
  + Finding document from collection with index number.
* Sort documents
* Limit documents
* Skip documents
* Count documents
* Distinct value from fields

**Day 6**

* How to create javascript object in MongoDB
* Updating document from collection
  + Updating single document
  + Updating multiple documents
* Some update methods
  + $inc
  + $unset
  + $rename
* Deleting document from collection
  + Deleting single document
  + Deleting multiple documents

**Day 7, 8** and **9**

* aggregate()
  + $match
  + $project
  + $sample
  + $sort
  + $limit
  + $skip
* Arithmetic expression operators
  + $abs
  + $add
  + $subtract
  + $multiply
  + $divide
  + $mod
  + $round
  + $rand
* String operators
  + $ifNull
  + $toUpper
  + $toLower
  + $concat
  + $size
  + $arrayElemAt
* Date operators
  + $dayOfMonth
  + $dayOfWeek
  + $dayOfYear
  + $month
  + $week
  + $year

**Day 10**

* aggregate()
  + $group
  + $match
  + $out
* Import data
* Export data