

Web Design/Front End Developer:- HTML, CSS, Bootstrap, <u>Javascript & JQuery</u>

	<u>HTML</u>
INTRODUCTION	FORM ATTRIBUTES
 What is HTML? What is an HTML Element? Web Browsers HTML Page Structure HTML History HTML Editors Save the HTML Page 	 Autocomplete Autofocus Form, form action, form type, form method, Form validate, form target Height and width List Min and max multiple patterns (regexp)
HTML BASIC	HIDDEN FIELDS
 HTML - Elements HTML - Tags HTML - Text HTML - Formatting, Pre HTML - Attributes HTML - Font HTML - Anchor Links HTML - Comments HTML - Lists HTML - Images HTML - Tables HTML - Bg-color, Color Codes, Color Chart, Background 	 HTML - Password HTML - Reset HTML - Submit HTML - Checkboxes, Radio, Select, Hidden Fields, Upload, Textarea
SPECIAL TAGS	FORMATTING TAGS
 HTML – Body, Meta HTML – Style HTML – Div HTML – Layouts, Frames 	 HTML - Bold HTML - Paragraphs HTML - Headings HTML - Line Breaks
HTML - HORIZONTAL RULE	HTML5 SYLLABUS
HTML – Email HTML – Italic	<article></article><aside></aside><figcaption>, <figure></figure></figcaption><footer>, <header></header></footer>

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	 <mark></mark> <nav></nav> <progress></progress> <section></section> <summary></summary> <time></time>
FORM ELEMENTS	FORM INPUT TYPES
<datalist></datalist><keygen/><output></output>	 Color Date, Datetime, Datetime-local Email Month Number Range Search Tel Url Time Week
HTML FORMS	
 HTML – Forms HTML – Input HTML – Text Fields 	

<u>CSS</u>	
INTRODUCTION	CSS3
 What is CSS? Why Use CSS? CSS Syntax CSS Selectors How To Add CSS 	 Borders border-radius Border Images Backgrounds Background Size background-origin Text Effects text-shadow box-shadow Text, Fonts Text-overflow Word-wrap Word-break

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CSS BASIC	<u>TRANSFORMS</u>
 CSS Syntax CSS Selectors (ID, Class, Tags, Attributes) CSS Styling 	2D Transforms3D Transforms
CSS BOX MODEL	<u>TRANSITIONS</u>
 CSS Border CSS Outline CSS Margin CSS Padding CSS Dimension CSS Display CSS Positioning CSS Floating CSS Navigation Bar CSS Image Gallery CSS Image Opacity CSS Align 	 Transition-delay Transition-duration Transition-property, Transition-timing-function

<u>JAVASCRIPT</u>	
INTRODUCTION	HANDLING EVENTS
 Cross-checking fields Displaying more informative errors Verifying radio button selections Setting one field with another field Verifying email addresses 	 Responding to window events Responding to mouse movements Responding to mouse clicks Responding to onBlur form events Responding to onFocus form events Responding to keyboard events
WORKING WITH COOKIES	THE DOM, NODES, AND OBJECTS
 Demystifying cookies Writing a cookie Reading a cookie Displaying a cookie Counting with cookies Deleting cookies Handling multiple cookies 	 Understanding the DOM Adding nodes to the DOM Deleting nodes from the DOM Deleting specific nodes Inserting nodes into the DOM Replacing nodes in the DOM

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Cookies in action	
WORKING WITH DATES AND TIMES	REAL-WORLD APPLICATIONS OF JAVASCRIPT
 Displaying dates Displaying times Creating a countdown 	 Creating sliding menus Creating pop-up menus Creating slideshows with captions Creating a stylesheet switcher

<u>BOOTSTRAP</u>	
INTRODUCTION TO BOOTSTRAP	BOOTSTRAP GRID
 What is Bootstrap Framework Why Bootstrap History of Bootstrap Advantages of Bootstrap Framework What is Responsive web page How to remove Responsiveness Major Features of Bootstrap What is Mobile-First Strategy Setting up Environment How to apply Bootstrap to Applications 	 What is Bootstrap Grid How to apply Bootstrap Grid What is Container What is Offset Column How to Reordering Columns Advantages of Bootstrap Grid How to Display responsive Images How to change class properties How to use readymade themes How to customise Bootstrap's components, Less variables, and jQuery plug-in. What is Bootstrap Typography How to use Typography What are Bootstrap Tables What is Bootstrap Form Layout What is Bootstrap Button How to display images in different styles like Circle shape etc How to display text like muted and warning etc What are Carets Classes How to hide or show the text in Bootstrap
BOOTSTRAP COMPONENTS	BOOTSTRAP PLUG-INS
 What is Bootstrap Components Why Bootstrap Components Advantages of Bootstrap Components 	 What is Bootstrap Plug-Ins Why Bootstrap Plug-Ins How to use Bootstrap Plug-Ins What is Transition Plug-in What Modal Dialog Box

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- What are the different types of Bootstrap Components
- What is Glyphicons Component
- How to use Glyphicons Component
- What is Bootstrap Dropdown Menu Component
- What is Button Groups and Button Toolbar
- How to use Button Groups and Button Toolbar
- What are different Input Groups Components
- What is Navigation Pills & Tabs Components
- How to use Navigation Pills and Tabs Components
- What is Navbar Component
- How to build a Responsive Navbar
- How to Add Forms and other controls to Navbar
- How to Fix the position of navbar
- What is Breadcrumb Component
- What is Pagination Component
- How to apply Pagination in Application
- What is Labels / Badge Components
- Why Media Objects
 Component
- How to use Media Objects Component
- What is Bootstrap List Group Component
- What is Bootstrap Panel Component

- What are the different Properties, Methods and Events of Model Dialog Box
 - What is Scrollspy Plug-In
- What is Tab Plug-in
- How to use Tab Plug-in
- What is Drop Down Plug-in
- What is Tooltip Plug-in
- How to use Button Plug-in
- What are the different methods and events of Tooltip Plug-in
- What is Popover Plug-in
- What is alert and Button Plug-ins
- What is Collapse Plug-in
- What are different types of Properties,
 Methods and Events of Collapse Plug-in
- What is Carousel Plug-in
- What is Affix Plug-in



<u>JQUERY</u>	
INTRODUCTION	<u>TRAVERSAL</u>
 jQuery Introduction Install and Use jQuery Library Un-Obstructive JavaScript First jQuery Example jQuery Syntax How to escape a special characters 	Traversal Functions
<u>SELECTORS</u>	HTML MANIPULATION
Basic Selectors	 Getting Setting values from elements Handling attributes Inserting New elements Deleting/Removing elements CSS manipulations Dimensions Positioning
<u>EFFECTS</u>	<u>EVENTS</u>
 Showing/Hiding elements Sliding elements Fading elements Deleting animation elements Custom animation 	Working with Events
AJAX AND JSON	
 Ajax with jQuery Load method jQuery get and getJson methods jQuery POST request Retrieving js file Helper methods 	

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Back End Developer: - C, C++

	<u>C</u>
<u>C INTRODUCTION</u>	<u>'C' TOKENS</u>
 Types of Languages Evolution of 'C' Language Structure of a 'C' Program 'C' Program development life cycle Executing and Debugging a 'C' Program 	 Keywords and Identifiers Operators Constants Variables Data Types Precedence of Operators Scope and Lifetime of Variables
CONTROL STATEMENT AND EXPRESSIONS	<u>LOOPING</u>
 Decision Making using if statement Types of ifelse block Switch case Block Arithmetic Expressions Evaluation of Expressions GOTO statement 	 Concept of Loop For loop While loop Do while loop Jumping in Loop break and continue statement
ARRAYS AND STRING	<u>FUNCTIONS</u>
 Introduction of Array One - D Array Two - D Array Multidimensional Array Dynamic Arrays Implementing String Variables String handling Functions 	 Concept of Function User-defined Function System Defined Function Types of parameter passing in a function
<u>POINTERS</u>	STRUCTURE AND UNIONS
 Need of Pointers Types of Pointers Pointer Expression Arrays of Pointers Pointers and Functions 	 Need of Structure Implementing Structure Variable Arrays of Structure Structure within Structure Introduction of Unions Difference between Structure and Unions

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<u> </u>	FILE HANDLING USING 'C'	DYNAMIC MEMORY ALLOCATION
• • File	Opening and Closing File Input / Output operations on	 Concept of Dynamic Allocation Implementing Malloc and Calloc Functions
•	Random Access to Files Command Line Arguments	Releasing the free space
	STORAGE CLASSES AND PRE-PROCESSOR	
•	Introduction of Storage Class Types of Storage Classes	
Types of Storage Classes		



- Introduction of Pre-processor
- Macro Substitution
- File Inclusion

	<u>C++</u>
C++ INTRODUCTION	INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING
 What is C++? Why Use C++ Difference between C and C++ C++ Syntax 	 Concept of OOP Features of OOP Structure of 'C++' program Executing and Debugging a 'C++' Program
'C++' TOKENS AND TYPE CASTING	CLASSES & OBJECTS
 Keywords and Identifiers Operators Constants Variables Data Types Precedence of Operators Scope and Lifetime of Variables 	 Classes & Object Specifier Defining data members and member functions Array of objects Managing console I/O 'C++' stream classes Formatted and unformatted console I/O Usage of manipulators
FUNCTION IN 'C++'	CONSTRUCTORS AND DESTRUCTOR
 Call by reference, Return by reference Function overloading and default arguments Inline function Static class members Friend functions Virtual Functions 	 Concept of Constructor Types of Constructors Memory allocation (new and delete) Usage of destructor
OPERATOR OVERLOADING	INHERITANCE
 Overloading Unary and Binary operators Overloading using the friend function 	 Types of inheritance Virtual base classes and abstract base classes Constructor and destructor in derived class

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WORKING WITH FILES	EXCEPTION HANDLING
 File operations File pointer and their manipulation File updation with random access 	 Various Exception Handling classes Implementing try and catch block Use of throw keyword



Web Development/Back End Developer: PHP, Laravel & My SQL

<u>PHP</u>	
PHP INTRODUCTION	PHP BASIC
 What is PHP? What is a PHP File? What Can PHP Do? Why PHP? What's new in PHP Versions PHP Installation 	 Embedding PHP code on a page Outputting dynamic text The operational trail Inserting code comments
EXPLORING DATA TYPES	CONTROL STRUCTURES: LOGICAL EXPRESSIONS
 Variables Strings String functions Numbers Part One: Integers Numbers part two: Floating points Arrays Associative arrays Array functions Booleans NULL and empty Type juggling and casting Constants 	 If statements Else and else if statements Logical operators Switch statements
CONTROL STRUCTURES: LOOPS	USER-DEFINED FUNCTIONS
 While loops For loops Foreach loops Continue Break Understanding array pointers 	 Defining functions Function arguments Returning values from a function Multiple return values Scope and global variables Setting default argument values
<u>DEBUGGING</u>	BUILDING WEB PAGES WITH PHP
 Common problems Warnings and errors Debugging and troubleshooting 	 Links and URLs Using GET values Encoding GET values Encoding for HTML

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	 Including and requiring files Modifying headers Page redirection Output Buffering
WORKING WITH FORMS AND FORM DATA	WORKING WITH COOKIES AND SESSIONS
 Building forms Detecting form submissions Single-page form processing Validating form values Problems with validation logic Displaying validation errors Custom validation functions Single-page form with validations 	 Working with cookies Setting cookie values Reading cookie values Unsetting cookie values Working with sessions

<u>LARAVEL</u>	
INTRODUCTION TO LARAVEL	LARAVEL ROUTING AND CONTROLLERS
 What is Laravel and its features Installing Laravel and setting up the development environment Laravel project structure and directory layout Composer package manager for Laravel 	 Defining routes and route parameters Creating and organizing controllers Handling HTTP requests and responses Middleware for request processing RESTful resource controllers
LARAVEL VIEWS AND BLADE TEMPLATES	LARAVEL MODELS AND ELOQUENT ORM
 Creating and rendering views Working with Blade templates Passing data to views Layouts and master templates Blade directives and control structures 	 Defining and using Eloquent models Database migrations and schema design Querying and retrieving data with Eloquent Creating and updating records Relationships in Eloquent (one-to-many, many-to-many, etc.)
LARAVEL VALIDATION AND FORM	LARAVEL MIDDLEWARE AND

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<u>REQUESTS</u>	<u>AUTHENTICATION</u>
 Form validation in Laravel Validation rules and custom validation Creating and using form requests Handling form submission and errors AJAX form validation and submission 	 Understanding middleware in Laravel Creating custom middleware Authentication and user management Role-based access control (RBAC) Social media authentication
LARAVEL DATABASE RELATIONSHIPS	API DEVELOPMENT WITH LARAVEL
 One-to-one, one-to-many, and many-to-many relationships Eager loading and lazy loading Polymorphic relationships Querying related data Advanced relationship techniques 	 Building RESTful APIs with Laravel API authentication and token-based security API versioning and rate limiting Testing and documenting APIs Consuming external APIs in Laravel
LARAVEL MIDDLEWARE AND AUTHENTICATION	LARAVEL TESTING AND DEBUGGING
 Understanding middleware in Laravel Creating custom middleware Authentication and user management Role-based access control (RBAC) Social media authentication 	 Writing unit tests and feature tests PHP Unit integration for Laravel Test-driven development (TDD) practices Debugging techniques and tools Profiling and optimization
LARAVEL DEPLOYMENT AND SECURITY	
 Preparing Laravel applications for production Deployment strategies (e.g., shared hosting, VPS, cloud) Security best practices for Laravel Handling security vulnerabilities and attacks 	

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Backup and disaster recovery

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MYSQL	
MYSQL BASICS	USING PHP TO ACCESS MYSQL
 MySQL introduction Creating a database Creating a database table CRUD in MySQL Populating a MySQL database Relational database tables Populating the relational table 	 Database APIs in PHP Connecting to MySQL with PHP Retrieving data from MySQL Working with retrieved data Creating records with PHP Updating and deleting records with PHP SQL injection Escaping strings for MySQL Introducing prepared statements
BUILDING A CONTENT MANAGEMENT SYSTEM (CMS)	USING SITE NAVIGATION TO CHOOSE CONTENT
 Blueprinting the application Building the CMS database Establishing your work area Creating and styling the first page Making page assets reusable Connecting the application to the database 	 Adding pages to the navigation subjects Refactoring the navigation Selecting pages from the navigation Highlighting the current page Moving the navigation to a function
APPLICATION CRUD	BUILDING THE PUBLIC AREA
 Finding a subject in the database Refactoring the page selection Creating a new subject form Processing form values and adding subjects Passing data in the session Validating form values Creating an edit subject form Using single-page submission Deleting a subject Cleaning up Assignment: Pages CRUD Assignment results: Pages 	 The public appearance Using a context for conditional code Adding a default subject behaviour The public content area Protecting page visibility

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CRUD	
REGULATING PAGE ACCESS	ADVANCED PHP TECHNIQUES
 User authentication overview Admin CRUD Encrypting passwords Salting passwords Adding password encryption to CMS New PHP password functions Creating a login system Checking for authorization Creating a logout page 	 Using variable variables Applying more array functions Building dates and times: Epoch/Unix Formatting dates and times: Strings and SQL Setting server and request variables Establishing global and static variable scope Making a reference assignment Using references as function arguments Using references as function return values
INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING (OOP)	OOP IN PRACTICE
 Introducing the concept and basics of OOP Defining classes Defining class methods Instantiating a class Referencing an instance Defining class properties 	 Understanding class inheritance Setting access modifiers Using setters and getters Working with the static modifier Reviewing the scope resolution operator Referencing the Parent class Using constructors and destructors Cloning objects Comparing objects
WORKING WITH FILES AND DIRECTORIES	SENDING EMAILS
 File system basics Understanding file permissions Setting file permissions PHP permissions Accessing files Writing to files Deleting files Examining file details Working with directories Viewing directory content 	 Configuring PHP for email Sending email with mail() Using headers Reviewing SMTP Using PHPMailer

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Back End Developer:- Python, Django

PYTHON	
INTRODUCTION TO PYTHON	BEGINNING PYTHON BASICS
 What can Python do? Why Python? Good to know Python Syntax compared to other programming languages Python Install 	 The print statement, Comments Python Data Structures & Data Types String Operations in Python Simple Input & Output Simple Output Formatting Operators in python
PYTHON PROGRAM FLOW	FUNCTIONS& MODULES
 Indentation The If statement and its' related statement An example with if and it's related statement The while loop, The for loop The range statement Break & Continue Assert Examples for looping 	 Create your own functions Functions Parameters Variable Arguments Scope of a Function Function Documentations Lambda Functions & map n Exercise with functions Create a Module Standard Modules
EXCEPTIONS HANDLING	FILE HANDLING
 Errors Exception handling with try handling Multiple Exceptions Writing your own Exception 	 File handling Modes Reading Files Writing & Appending to Files Handling File Exceptions The with statement
CLASSES IN PYTHON	GENERATORS AND ITERATORS
 New Style Classes Creating Classes Instance Methods Inheritance Polymorphism Exception Classes & Custom Exceptions 	 Iterators Generators The Functions any and all With Statement Data Compression
<u>DATA STRUCTURES</u>	COLLECTIONS

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 List Comprehensions Nested List Comprehensions Dictionary Comprehensions Functions Default Parameters Variable Arguments Specialized Sorts 	 namedtuple() deque ChainMap Counter OrderedDict defaultdict UserDict UserList UserString
WRITING GUIS IN PYTHON (TKINTER)	PYTHON SQL DATABASE ACCESS
 Introduction Components and Events An Example GUI The root Component Adding a Button Entry Widgets Text Widgets Check buttons 	 Introduction,Installation DB Connection Creating DB Table INSERT, READ, UPDATE, DELETE operations COMMIT & ROLLBACK operation handling Errors
<u>NETWORK PROGRAMMING</u>	DATE AND TIME
 NETWORK PROGRAMMING Introduction A Daytime Server Clients and Servers The Client Program The Server Program 	 sleep Program execution time more methods on date/time
 Introduction A Daytime Server Clients and Servers The Client Program 	sleepProgram execution time
 Introduction A Daytime Server Clients and Servers The Client Program The Server Program 	 sleep Program execution time more methods on date/time
 Introduction A Daytime Server Clients and Servers The Client Program The Server Program FEW MORE TOPICS IN-DETAILED Filter, Map, Reduce Decorators Frozen set 	 sleep Program execution time more methods on date/time REGULAR EXPRESSION Split Working with special characters, date, emails Quantifiers Match and find all character sequence and substitute

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Treads Life cycleuse cases	
<u>DJANGO</u>	
 Django Overview Django Installation Creating a Project Usage of Project In-depth Discussion Creating an Application Understanding Folder Structure Creating a Hello World Page Database and Views Static Files and Forms API and Security 	
Count	Pute,