

Программа обучения веб-программированию

Структура курса

Краткая структура курса:

1. Введение в специальность – веб девелопмент и фронт энд разработка; понимание структуры технологического процесса веб продакшн, современный рынок веб разработки(webdev, front end, back end, full stack, web design); Обзор современного состояния WEB – ключевые понятия, технологии и инструменты. Стэк HTML/CSS/JS – контент/представление/поведение.
2. Базовые технологии.
 - HTML v5
 - CSS v3
 - Java Script
3. Дополнительные инструменты, фреймворки и библиотеки.
 - Bootstrap v4
 - JQuery
 - Node JS
 - TypeScript
4. SAP – «одностраничные приложение» - обзор технологий и инструментов.
5. ANGULAR 5 – самый востребованный фреймворк от Google.
6. Практический воркшоп – создание полноценного проекта с использованием изученных технологий и инструментов

Развернутая структура курса:

HTML

HTML is the markup language that every web developer uses in order to structure and present content in the Internet. HTML5 is the standard that is being shaped and developed currently. It extends and improves the last HTML45 standard and takes it to the next level with support multimedia, communication and more.

HTML

- Short Intro
- Web / Client / Server / HTTP

- Page Rendering
- Basic HTML
- Semantic vs Style Presentation
- DOM model
- HTML Main components
- HTML Inputs
- HTML Tables
- HTML5 New Features Video, Sound, Offline, Canvas, SVG)

CSS3

CSS is a style sheet language used to describe the presentation semantics of a document written in a markup language. CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors, and fonts.

CSS 3 builds upon the principles about styles, selectors and the cascade from earlier versions of CSS. It adds loads of new features, including new selectors, pseudo-classes and properties. Using these new features it becomes a lot easier to set up your layout.

Module 1 - Introduction

- What's new about CSS3
- CSS3 Modularity

Module 2 - CSS Review

- Units in CSS
- CSS Selectors and Relational Selectors
- Positioning

Module 3 - Advanced Selectors

- Inheritance
- Specificity
- Pseudo-classes and elements
- Combinators
- Attribute Selectors

Module 4 - Visual Effects in CSS3

- Rounded Corners
- Color and Opacity

- Text and Box Shadows
- Gradients
- Borders and backgrounds
- Reflection
- Masks

Module 5 - Layout

- Introduction to CSS Layouts
- Box Layout
- Multi-column Layout

Module 6 – Text and Web Fonts

- @font-face
- Copyright and open source fonts
- Font services and APIs
- Text manipulation

Module 7 – Responsive Design Basics

- Fluid layouts
- Media Queries
- The viewport

Module 8 - Transformations

- 2D transformations – scale, translate, skew, rotate, matrix
- 3D transformations

Module 9 - Animation

- Transitions and animation basics
- Keyframes and animation

Module 10 – Supporting multiple browsers

- Supporting multiple browsers
- Detecting browser features
- Using Modernizr library

Module 11 –CSS and beyond

- Debugging CSS in desktop and mobile browsers
- Introduction to LESS and SASS for better and faster CSS

Bootstrap 4

Bootstrap is a sleek, intuitive, and powerful, mobile first front-end framework for faster and easier web development. It uses HTML, CSS and JavaScript.

Module 1:-Introduction to Bootstrap

In this module, you will learn about Bootstrap Introduction, how to design web page look and feel good by using Bootstrap and the basics of Bootstrap Framework using which you can create web projects with ease that.

- 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

Module 2:- Bootstrap Grid

In this chapter, you will learn about the Bootstrap Grids in web design organize and structure content, makes the websites easy to scan and reduces the cognitive load on users. How to create page layouts through a series of rows and columns that house your content and how the Bootstrap grid system works that.

- 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 customize Bootstrap's components, less variables, and jQuery plug-in.
- What is Bootstrap Typography

- How to use Typography
- What is Bootstrap Tables
- What is Bootstrap Form Layout
- What is Bootstrap Button
- How display images in different styles like Circle shape etc
- How to display text like muted and warning etc
- What is Carets Classes
- How to hide or show the text in Bootstrap

Module 3:- Bootstrap Components

In this module, you will get knowledge on over a dozen reusable components built to provide iconography, dropdowns, input groups, navigation, alerts, and much more. Advantages of button groups and toolbars and how to use that

- What is Bootstrap Components
- Why Bootstrap Components
- Advantages of Bootstrap Components
- 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
- What is Jumbotron / Page Header Components
- What is Thumbnail Component
- What is Alerts & Dismissible Alerts
- How to Create Progress Bar
- What is Media Objects Component
- Why Media Objects Component
- How to use Media Objects Component

- What is Bootstrap List Group Component
- What is Bootstrap Panel Component

Module 4:- Bootstrap Plug-Ins

In this chapter, you will learn jQuery plug-ins that extend the features and can add more interaction to your site. How to access bootstrap Plug-Ins, how to use Bootstrap plug-ins with other UI frameworks and how to define custom events for most plug-ins unique actions that

- What is Bootstrap Plug-Ins.
- Why Bootstrap Plug-Ins
- How to use Bootstrap Plug-Ins
- What is Transition Plug-in
- What Modal Dialog Box
- 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

JavaScript, Advanced Java Script, jQuery

JavaScript is a loosely-typed client side scripting language that executes in the user's web browser. A web page without JavaScript is unimaginable today. There are many open source application development frameworks based on JavaScript.

JavaScript

- JavaScript history and ECMA Script
- JavaScript syntax, main commands, functions, input & outputs, strings, arrays
- JavaScript OOP: Objects, constructors, inheritance, prototype, scopes, Clojure
- JavaScript in the browser - DOM Manipulating, traversing, styles
- JavaScript DOM events

- JavaScript jQuery
- JavaScript Plugins
- JavaScript Extra: (geolocation, AJAX, Web Workers, Online/Offline, Cross Site Scripting CORS, Web Storage)
- JavaScript Frameworks: Angular 5
- Including hands-on exercises.

Module 1 – Advanced JavaScript Techniques

- Understanding functions and scopes
- Closures
- Objects, Classes and inheritance
- Shorthand coding techniques and method chaining
- Advanced event handling
- Regular expressions

Module 2 – JavaScript Design Patterns

- Observer Pattern and observable properties
- Asynchronous operations and timers based processing
- Module Patterns
- Creational Patterns

Module 3 – jQuery introduction

- Reasons for using jQuery
- jQuery load options
- Ready function

Module 4 – jQuery Selectors

- Selecting DOM nodes by class or ID
- Looping over DOM nodes
- Adding and removing nodes from DOM
- Changing nodes properties, classes and styles
- Advanced selector methods

Module 5 – jQuery Event Handling

- The benefits of using jQuery to handle DOM events
- Binding to DOM events

Module 6 – jQuery Ajax

- Introduction to ajax with jQuery
- Making GET and POST ajax calls to the server
- Handling ajax errors

Module 7 – jQuery Plugins

- What is a jQuery plugins and how to use it
- Finding jQuery plugins
- Image and presentation plugin examples
- Forms and validation plugin examples
- Miscellaneous plugins

Module 8 –Promises

- Promise design pattern
- Using promises and deferred objects with jQuery

Module 9 – JavaScript Deployment

- AMD patterns
- Using RequireJs for deployment

Module 10 – JavaScript Testing

- Principals of Unit Testing in JavaScript
- Using Jasmine library for Unit Testing

Angular 5

Angular is an advanced client-side framework based on the MVC pattern that allows developers to extend the HTML vocabulary and make the written code much more expressive and readable. With Angular, developers can create custom HTML elements with complex behaviors, two way data binding and much more. In this session we will see how to use Angular to create single page applications with ease.

Introduction to Modern Web Applications

- Single Web Applications (SPA) Vs. Web Applications
- Imperative vs Reactive programming

- MVC & MVVM Frameworks

Introduction to Angular

- What is it ?
- Benefits of Angular
- Development Environment

Angular Building Blocks

- Templates
- Expressions
- Modules
- Controllers
- Views
- Scopes
- Dependency Injection
- One-way vs Two-way Binding
- Angular 5 Components

Filters

- Filter Usages
- Built-in Filters
- Custom Filters

Services

- The \$http service

- The \$q service
- Services vs Factories
- Custom Services

Forms

- Form directives
- Submitting the form
- Built-in Validation
- Presenting the Form's State to the User
- Binding to Form and Control State
- Presenting Validation Errors
- Using CSS Classes
- Custom Validation
- Custom Form Controls

Directives

- What are Directives?
- The \$compile Service
- Creating Custom Directives
- Restricting Directive Usage
- Template-Expanding Directives

- Isolated Scope
- DOM Interactions
- Collaborating With Other Directives

Routing

- Routing In Single Page Applications
- The ngRoute Module
- Route Registration With \$routeProvider
- The ngView Directive
- Parameterized Routes
- \$routeParams Service
- Resolving Dependencies
- Angular Component Router vs Angular UI-Router

SASS and Gulp

- CSS vs SASS
- Programming with SASS
- Gulp Overview
- Integrating SASS into your workflow

Typescript

- Typescript vs JavaScript ES6 (EcmaScript2015)
- The positives and negatives of Typescript
- Typescript in Angular
- Getting started with writing in Typescript

Unit Testing vs E2E Testing

- What is Karma
- Unit tests vs evolving project requirements
- How to write tests

Animations

- CSS Transitions and Animations
- The ngAnimate Module
- Animations In Built-In Directives
- CSS-Defined Animations
- JavaScript-Defined Animations
- The \$animate Service

Form Validation Plugin (If Time Permitted)

- Custom form validation plugin that simplifies Angular's form validation process
- Useful when hand-coding multiple forms
- Able to share validation logic across applications

Web Accessibility in Angular (If Time Permitted)

- Introduce web accessibility
- Review what Angular provides for controls
- How to create reactive controls with accessibility