Programming Essentials & Introduction to the Web

Learning Objectives:

- The genesis and evolution of the world wide web, its key stakeholders, and technologies
- Fundamentals of computer programming including key concepts, architecture and more

Topics

- Fundamentals of Computers
- The World Wide Web
- People & Companies
- Fundamentals of Computer Programming

Linux Essentials

Learning Objectives:

- Working in a Linux (*nix) environment, key commands, workflows and techniques

Topics

- Introduction
- Linux Command Line
- Files & Directories
- Creating & editing Files
- User, Group and Permissions
- Other Essential Features
- Process
- Networking
- Shell Scripting Fundamentals

GIT

Learning Objectives:

- Version controlling and managing code & assets using Git & GitHub

Topics

- Introduction to version control with Git

- Git from the command line
- Everyday Git commands
- Git for collaboration

HTML5 & CSS3

Learning Objective:

- All about building responsive websites using HTML5 and CSS3

Topics

- Introduction to Web Development
- Introduction to HTML
- Forms and Inputs
- Introduction to CSS
- Advanced CSS
- Transitions and Animations
- Responsive Web design

JavaScript

Learning Objectives:

- Power up by introducing interactivity, logic, and function to your web pages by using JavaScript - one of the most popular languages in the world.

Topics

- Introduction to JavaScript
- The Absolute Fundamentals
- Variables and Values
- Conditional Execution
- Functions Essentials & more
- Loops
- Working with Arrays
- Working with Objects
- All about String
- Date and Time
- And more…

Module Bundlers and Toolchain

Learning Objectives:

- Learn all about a modern JavaScript build pipeline & toolchain including key tools such as Babel, Webpack and Parcel

Topics

- The Development Pipeline & Toolchain
- Configuring VSCode
- Modern JavaScript with Babel
- Using the Parcel Module Bundler
- Discovering Webpack

React

Learning Objectives:

- Amp up your skills by learning to build sophisticated and powerful web applications using React

Topics

- Introduction to React
- Components
- State & Props
- Rendering Lists
- Components Revisited
- Building Forms
- Render Props & Higher Order Components
- Portals
- Global & Shared Data
- And more…

Mastering Java

Learning Objectives:

- Learn and master the Java programming language

Topics

- Introduction to Java
- Java Language Features
- Basic Data Types
- Operators
- Flow Control
- Arrays
- Classes and Objects
- Methods
- Inheritance
- Packages and Interfaces
- And more…

Using Hibernate with MySQL

Learning Objectives:

- Understand and get started with one of the world's foremost RDBMS - MySQL and use with the Hibernate ORM for Java

Topics

- Introduction to Hibernate
- Hiberabte Concepts
- Hibernate with SpringBoot
- Inheritance Mapping using Hibernate
- Hibernate Mapping: Collection Element - Value
- Hibernate Mapping: Collection Element - Entity Reference
- Hibernate Queries
- A few more concepts

Basics of Spring Core and MVC

Learning Objectives:

- Leverage the power of Spring to create fully functional Spring applications.

Topics

- Introducing Spring Core

- Environment Setup
- IoC/DI, Spring Configurations
- Constructor/Setter Injection
- Lifecycle and Patterns
- Aspect-oriented Programming
- Understanding Spring MVC
- Setting Up the Environment
- Basics of Model View Controller
- Creating and Listing Records
- And more…

Mastering Spring Boot

Learning Objectives:

- Design and develop APIs and Microservices with Spring Boot and Spring Cloud.

Topics

- Introduction to Spring Boot
- Dev Tools
- Performance Monitoring with Actuators
- Profiling
- Model Design
- Introduction to the Lombok Framework
- Understanding the Controller Tier
- Introduction to Swagger API
- Advanced concept Implementation in Controller Tier
- Understanding Service Tier
- And more…

Test-Driven Development with Java

Learning Objectives:

- Master the testing frameworks used to create robust test suites for applications.
- Apply the test-driven development methodology with JUnit, Mockito, and TestNG

Topics

- Introduction to Test-driven Development

- Unit Testing
- Test-driven Development Approach
- Mock-based Testing with Mockito
- TestNG
- Developing Java-based Application
- Evaluating Tests
- Developing Web-based Application

RESTful Web Services

Learning Objectives:

- Building RESTful Web Services using Java

Topics

- Introduction and REST concepts
- REST Best Practices
- Advanced RESTful features and Swagger
- Authentication and Monitoring
- JPA

PostgreSQL

Learning Objectives:

- Equip yourself with the skills needed to create state-of-the-art apps and platforms using PostgreSQL

Topics

- Introduction to Database Systems
- Fundamentals of SQL for Postgres
- Postgres Foundations
- Advanced Query Writing
- Postgres Security
- PERN Stack Implementation
- Spring Boot Implementation
- Developing Web-Based Application

Microservices

Learning Objectives:

- Understand the need for Microservices architecture
- Learn to build Microservices
- Get introduced to Inter-service messaging

Topics

- Microservices Introduction
- Creating Microservices
- Discovering Microservices
- Managing Microservices
- Logging in Microservices

DevOps with Jenkins

Learning Objectives:

- Get introduced to Jenkins
- Get an understanding on Jenkins Pipelines
- Learn to implement an end-to-end pipeline for Java applications

Topics

- Overview of DevOps Practices
- Overview of Jenkins
- Install and Configure Jenkins using Docker/Kubernetes/Cloud
- Overview of SonarQube
- Pipeline as a Code
- Jenkins Pipeline
- Multi-branch Pipeline
- Distributed Architecture
- Realtime communication with socket.io
- Scaling node apps

Data Structures and Algorithms

Learning Objectives:

- Get on par with industry trends and get a strong base for programming
- Solve complex problems with Data Structures and Algorithms
- Master simple Data Structures like Arrays and Lists to complex ones like Trees and Graphs
- Focus on well-known algorithms like Kruskal's, Prim's and Dijkstra's

Topics

- Introduction
- Arrays
- List
- Stacks
- Queues
- Maps
- Trees
- Graphs
- Sorting Algorithms
- Search Algorithms
- And more…

Capstone Project

Learning Objectives:

- Strengthen your understanding of full stack architecture
- Visualize and deploy a realistic full stack application
- Complete all essential milestones that are encountered in a production setting
- Handle real world scenarios from the get-go

Topics

- Industry relevant capstone project guided by an experienced industry-expert mentor