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# Fundamentals Curriculum

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Build a strong foundation in front-end development and web design with HTML and CSS. Also, learn the fundamentals of programming with Python. With hands-on practice, become proficient in the syntax, structure, and usage of these technologies and develop problem-solving skills.

# Static Website Design

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This course helps you build a strong foundation on web technologies such as HTML, CSS. With this, you will create and publish simple and beautiful websites from scratch.

## Software Development Fundamentals

- Importance of Frontend
- Fundamentals
  - Syntax
  - Debugging
  - Tweaking Code

## HTML Basics

- Getting Started
- HTML Elements
- HTML Headings
- HTML Paragraphs
- HTML Button
- HTML Attributes
- HTML Images
- HTML Hyperlinks
- HTML Containers
- HTML Lists

## CSS Basics

- CSS Rulesets
- CSS Units
- CSS Paddings
- CSS Properties
- CSS Box Model
- CSS Borders
- CSS Colors
- CSS Margins

## Bootstrap Components

- Carousel
- Embedding Videos



### Course Project

Tourism Website

Build your Tourism Website by using  
HTML5, CSS3 and Bootstrap

# Responsive Website Design

This course helps you build a strong foundation on web technologies such as HTML, CSS, Media Queries, and Flexbox. With this, you can create a responsive web application which runs smoothly across all the devices like desktop, tablet, and mobile.

## Intermediate CSS

- Block vs inline elements
- CSS Selectors
  - Class Selector
  - Id Selector
  - Type Selector
  - CSS Specificity
  - CSS Inheritance
  - CSS Cascading



### Course Project

#### Food Munch

Build a responsive Food Munch website using HTML5, CSS3 and Bootstrap Grid System.

## Bootstrap

- Bootstrap Grid System
  - Container
  - Row
  - Column
- Bootstrap Utilities
  - Display Utilities
  - Flex Utilities
  - Sizing Utilities
  - Spacing Utilities

- Navbar
- Buttons
- Colors



## **Course Project**

### **Ecommerce Website**

Build a responsive Ecommerce website using HTML5, CSS3 and Bootstrap Grid System

# Programming Foundations with Python

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You will learn the fundamental concepts of programming and gain the confidence to code in Python. You will learn to write programs and use the right data structures to solve problems and build modular software with Object-Oriented Principles.

## Fundamentals of Programming

- Operators, Datatypes & Variables
- Strings & Numbers
- Conditional Statements
- Loops
- String Methods
- Functions

# Introduction to Databases

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Learn about the incredibly prevalent databases today. Through this course, you'll develop strong fundamentals and be proficient in concepts related to Databases and DBMS. Most importantly, you'll also be able to perform powerful queries on databases using SQL.

## Relational Databases

- Introduction
- SQL
- Aggregation, Relationships, Join
- Normalisation & Advanced SQL
- Querying
- ACID Properties





# Java Full Stack

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Build a strong understanding of Java programming and web development technologies to become a Full-Stack Java Developer. Get hands-on experience with various Java frameworks for developing web applications. Create a portfolio of projects by developing end-to-end web applications using emerging frameworks.

# Programming with Python

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You will learn the fundamental concepts of programming and gain the confidence to code in Python. You will learn to write programs and use the right data structures to solve problems and build modular software with Object-Oriented Principles

## Functions & Data Structures

- Recursion
- Lists and List Methods
- Tuples & Sequences
- Sets & Dictionaries

## Object-Oriented Programming

- Classes & Objects in Python
- Attributes & Methods
- Inheritance & Polymorphism

## Working with Python Standard Library

# Developer Fundamentals

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You will learn the essentials of Operating Systems, Networks and use some essential developer tools like Command-Line and Git. You'll learn to version your software with Git and push your code to GitHub

## Introduction to OS & Networks

- Overview of OS Concepts
- Networks & Internet
- Network Layer
- Application Layer
- Web Servers

## Working with Command Line

- Files & File System
- Managing System Packages
- Environment Variables
- Network & SSH

## Collaborating with Git

- VCS & Git Repositories
- Staging Area & Commits
- Working with Branches
- Issues & Pull Requests

# Java Full Stack

## Java Fundamentals

- Data Types, Variables & Operators
- Reading Input & Formatting Output
- Conditions & Loops
- Arrays
- Java Collections

## OOP with Java

- Classes & Objects
- Attributes & Methods (Instance, Static, Class)
- Abstraction
- Inheritance
- Public, Private, Protected Scopes
- Encapsulation
- Method Overloading & Overriding
- Interfaces
- Polymorphism
- Generics & Exceptions
- Multi-threading
- Important Design Patterns

## Backend with Spring Boot

- Overview of Spring Framework
- Building Java Projects with Maven/Gradle
- Building REST APIs with Spring Boot
- Consuming RESTful Web Services
- Working with Relational Data using JDBC
- JPA and Hibernate
- Uploading Files & Validating Form Inputs
- Writing Unit Tests
- Overview of Spring Batch
- Overview of Spring Integration
- Overview of Spring Cloud
- Overview of Spring AOP

# Dynamic Web Applications

## Introduction to JavaScript

- Data Types
- Variables
- Basic Operators
- Conditionals
- Loops
- Functions
- Arrays
- Objects
- Control Flow
- Comments
- Math Function

## DOM Manipulation

- The JavaScript Console
- Introduction to the DOM
- Defining the DOM
- Select and Manipulate
- Important Selector Methods
- Manipulating Style
- Manipulating Text and Content
- Manipulating Attributes
- Local Storage



### Course Project

Todos Application

Build a Todos Application using  
HTML5, CSS3 and JS

## Forms

- The form element
- The label element
- The input element
- The option element
- The optgroup element
- The button element
- The select element
- The textarea element
- Form validations and Input
- Validations

## Array Methods

- Adding & Removing Elements
- Push
- Unshift
- Splice
- Pop
- Shift
- Finding Elements
- Find
- IndexOf
- Concat

## Events, Fetch & Callbacks

- How to add Event Listeners
- Callbacks
- Schedulers
- SetTimeout
- ClearTimeout
- SetInterval
- ClearInterval
- Hypertext Transfer Protocol (HTTP)
- HTTP Requests using Fetch
- HTTP Responses
- Working with JSON data



### Course Project

Wikipedia Search  
Application

Build a Wikipedia Search Application  
using HTML5, CSS3, JS

# Intermediate JavaScript

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In this course, you will learn the concepts like Events, Scope, Hoisting, this, ES6 Classes, Error handling, More about Objects and how to handle Asynchronous JavaScript

## Rest parameters and spread syntax

- Destructuring Arrays
- Destructuring Objects

## More Objects

- Constructor Functions
- Factory Functions
- Constructor Method
- New Keyword

## This

- This In Methods
- Window Scope
- This In Function Declarations
- This In Events

## Prototypes & ES6 Classes

- Built-in Constructor Functions
- Constructor Property
- Inheritance
- This In Classes

## Asynchronous JS

- Async/Await
- Promises

# Scope & Hoisting in JavaScript

## Array Methods

- Map
- Filter
- Reduce

## String Manipulations

- Trim & Split Methods
- ToUpperCase & ToLowerCase Methods
- Includes Method



# Intermediate Responsive Web Design

This course will help you to develop responsive layouts using CSS Flexbox and CSS Media Queries

## CSS Layouting

- CSS Flexbox
  - Display
  - Ex-direction
  - Justify-content
  - Align-items
  - Ex-wrap
  - ex- ow
  - Align-content
  - Align-self
  - Ex-grow
  - Ex-shrink
  - Order
- Sizing Elements
- Over flow
- Box Sizing
  - Content Box
  - Border Box

## CSS Media Queries

- Media Query
- Media Types
- Media Features
  - Width, min-width, max-width
  - Height, min-height, max-height
  - Orientation
- Combining Multiple Media Features In A Single Media Query.
  - Logical Operators (and)
  - Logical Operators (not)
  - Logical Operators (,)

# React JS - Getting Started

In this course, you will learn how to build stateful web applications with the ReactJS library. When you finish this course, you will be comfortable creating an application in ReactJS, from scratch

## Introduction to React JS

- Why React?
- Stateful + Stateless components
- Hello World
- Introducing JSX
- Rendering Elements
- Components and Props
- State and Lifecycle
- Handling Events
- Conditional Rendering
- Lists and Keys
- Forms
- Composition vs Inheritance
- Thinking In React

## CSS in JS

- Styled Components
- Emotion

## Routing

- Query parameters
- Path parameters

## Authentication and Authorization



### Course Project

Ecommerce  
Application

Build an Ecommerce application  
using React JS

# Capstone Project - Build A Social Networking Web App

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In this project you will be developing a Social networking web app with popular features like post, comment

## Tools and Technologies used

- HTML
- CSS
- JS
- AWS
  - S3
  - Route53
  - Cloudfront
- Spring Boot
  - CRUD API
  - JPA
- Designing & Querying Relational Database

# Contact us

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