

Course: GitHub Copilot with Java

Topics	Scope/Course Coverage	Durations in hours
Eclipse	Eclipse Usage	1
VS Code	VS Code Usage	1
GIT	Git - Basic Concepts Git - Environment Setup Git - Life Cycle Git - Create Operation Git - Clone Operation Git - Perform Changes Git - Review Changes Git - Commit Changes Git - Push Operation Git - Update Operation Git - Stash Operation Git - Move Operation Git - Rename Operation Git - Delete Operation Git - Fix Mistakes Git - Tag Operation Git - Patch Operation Git - Managing Branches Git - Handling Conflicts Git - Different Platforms Git - Online Repositories	4
GITHUB	Getting started from GitHub Github Edit Code Pull from GitHub Push from GitHub GitHub Branch Pull Branch from GitHub Push Branch from GitHub GitHub Flow GitHub Pages	2
Bit Bucket	Bitbucket Get Started Bitbucket Edit Code Pull from Bitbucket Push to Bitbucket Bitbucket Branch Pull Branch from Bitbucket Push Branch to Bitbucket GitHub Flow Bitbucket Pages	2
HTML5	HTML - Overview HTML - Basic Tags HTML - Elements HTML - Attributes HTML - Formatting HTML - Phrase Tags HTML - Meta Tags HTML - Comments HTML - Images HTML - Tables HTML - Lists HTML - Text Links HTML - Image Links HTML - Email Links	4

	<ul style="list-style-type: none"> HTML - Frames HTML - Iframes HTML - Blocks HTML - Backgrounds HTML - Colors HTML - Fonts HTML - Forms HTML - Embed Multimedia HTML - Marquees HTML - Header HTML - Style Sheet HTML - Javascript HTML - Layouts 	
CSS	<ul style="list-style-type: none"> CSS - Introduction CSS - Syntax CSS - Inclusion CSS - Measurement Units CSS - Colors CSS - Backgrounds CSS - Fonts CSS - Text CSS - Images CSS - Links CSS - Tables CSS - Borders CSS - Margins CSS - Lists CSS - Padding CSS - Cursors CSS - Outlines CSS - Dimension CSS - Scrollbars CSS Advanced CSS - Visibility CSS - Positioning CSS - Layers CSS - Pseudo Classes CSS - Pseudo Elements CSS - @ Rules CSS - Text Effects CSS - Media Types CSS - Paged Media CSS - Aural Media CSS - Printing CSS - Layouts CSS - Validations CSS3 Tutorial CSS3 - Tutorial CSS3 - Rounded Corner CSS3 - Border Images CSS3 - Multi Background CSS3 - Color CSS3 - Gradients CSS3 - Shadow CSS3 - Text CSS3 - Web font CSS3 - 2d transform CSS3 - 3d transform CSS3 - Animation CSS3 - Multi columns 	4

	CSS3 - User Interface CSS3 - Box Sizing CSS Responsive CSS - Responsive Web Design	
JavaScript	Javascript - Overview Javascript - Syntax Javascript - Enabling Javascript - Placement Javascript - Variables Javascript - Operators Javascript - If...Else Javascript - Switch Case Javascript - While Loop Javascript - For Loop Javascript - For...in Javascript - Loop Control Javascript - Functions Javascript - Events Javascript - Cookies Javascript - Page Redirect Javascript - Dialog Boxes Javascript - Void Keyword Javascript - Page Printing JavaScript Objects Javascript - Objects Javascript - Number Javascript - Boolean Javascript - Strings Javascript - Arrays Javascript - Date Javascript - Math Javascript - RegExp Javascript - HTML DOM JavaScript Advanced Javascript - Error Handling Javascript - Validations Javascript - Animation Javascript - Multimedia Javascript - Debugging Javascript - Image Map Javascript - Browsers Javascript Promises, async/await. Javascript Modules	4
Bootstrap	Bootstrap - Environment Setup Bootstrap with CSS Bootstrap - Grid System Bootstrap - CSS Overview Bootstrap - Typography Bootstrap - Code Bootstrap - Tables Bootstrap - Forms Bootstrap - Buttons Bootstrap - Images Bootstrap - Helper Classes Bootstrap - Responsive utilities Bootstrap Layout Components Bootstrap - Glyphicons Bootstrap - Dropdowns Bootstrap - Button Groups Bootstrap - Button Dropdowns Bootstrap - Input Groups Bootstrap - Navigation Elements	2

	<ul style="list-style-type: none"> Bootstrap - Navbar Bootstrap - Breadcrumb Bootstrap - Pagination Bootstrap - Labels Bootstrap - Badges Bootstrap - Jumbotron Bootstrap - Page Header Bootstrap - Thumbnails Bootstrap - Alerts Bootstrap - Progress Bars Bootstrap - Media Object Bootstrap - List Group Bootstrap - Panels Bootstrap - Wells Bootstrap Plugins Bootstrap - Plugins Overview Bootstrap - Transition Plugin Bootstrap - Modal Plugin Bootstrap - Dropdown Plugin Bootstrap - Scrollspy Plugin Bootstrap - Tab Plugin Bootstrap - Tooltip Plugin Bootstrap - Popover Plugin Bootstrap - Alert Plugin Bootstrap - Button Plugin Bootstrap - Collapse Plugin Bootstrap - Carousel Plugin Bootstrap - Affix Plugin 	
Angular (TypeScript)	<ul style="list-style-type: none"> Angular Introduction Angular Features Angular Installation Angular First App Angular Apps Loading Angular Architecture Angular Directives Angular ngIf Directive Angular ngFor Directive Angular ngSwitch Directive Angular Data Binding Angular Property Binding Angular String Interpolation Angular Event Binding Two way Data Binding Angular Forms 	10
ReactJS	<ul style="list-style-type: none"> ReactJS - Introduction ReactJS - Installation ReactJS - Architecture ReactJS - Creating a React Application ReactJS - JSX ReactJS - Components ReactJS - Styling ReactJS - Properties (props) ReactJS - Event management ReactJS - State Management ReactJS - Http client programming ReactJS - Form programming ReactJS - Routing ReactJS - Redux ReactJS - Animation ReactJS - Testing ReactJS - CLI Commands ReactJS - Building and Deployment React ES6 React Render HTML React Class React Events 	10

	<p style="text-align: center;">React Conditionals React Lists React Forms React Memo React Sass Styling</p>	
RDBMS	<p style="text-align: center;">Introduction to Databases and RDBMSs Relational Data Model and the CREATE TABLE Statement Basic Query Formulation with SQL Extended Query Formulation with SQL Notation for Entity Relationship Diagrams ERD Rules and Problem Solving Developing Business Data Models Data Modeling Problems and Completion of an ERD Schema Conversion Normalization Concepts and Practice</p>	2
Oracle	<p style="text-align: center;">Introduction to SQL Restricting and Sorting Data Single Row Functions Displaying Data From Multiple Tables Aggregating Data using Group Functions Sub Queries Manipulating Data Creating and Managing Tables Including Constarints Views Other Database Objects Index Set Operators</p>	8
Core Java	<p style="text-align: center;">Overview about OOPs Concepts Java - Overview, History Basic Environment Setup with an example Basic Syntax, Object & Classes, Constructors Basic Datatypes, Variable Types, Java Modifier Operators, Loop Control, Decision Making Numbers, Characters Java Strings Java Arrays Java Date & Time Java Regular Expressions, Methods Files and I/O Exception Handling Inner classes Java Packages Java Data Structures Java Collections Java Generics Java Serialization Java Networking Java - Multithreading JDBC Concepts</p>	26
Servlets	<p style="text-align: center;">Introduction to Java Servlets ,Environment Setup Servlets Life Cycle with Examples Servlets Form Data handling Servlets Client Request, Server Response, Http Codes Servlets Writing Filters Servlets Exceptions and Cookies Handling Servlets Session Tracking Servlets Database Access Servlets File Uploading Servlets Date Handling Date and Page Redirect Servlets Hits Counter and Auto Refresh Servlets Sending Email Servlets Packaging Servlets Debugging</p>	4

	<p>Servlets Pros and Cons</p> <p>Servlets Real Time Examples</p>	
JSP	<p>Introduction to JSP and Environment Setup</p> <p>JSP Architecture , Lifecycle of JSP</p> <p>JSP Syntax, Directives, Actions, Implicit Objects</p> <p>JSP Client Request , Server Response , Http Status Codes</p> <p>JSP Form Processing</p> <p>JSP Writing Filters, Cookies Handling</p> <p>JSP Session Tracking</p> <p>JSP File Uploading</p> <p>JSP Handling Date</p> <p>JSP Page Redirect</p> <p>JSP Hits Counter</p> <p>JSP Auto Refresh</p> <p>JSP Sending Email</p> <p>JSP Standard Tag Library</p> <p>JSP Database Access</p> <p>JSP XML Data</p> <p>JSP Java Beans</p> <p>JSP Custom Tags</p> <p>JSP Expression Language</p> <p>JSP Exception Handling</p> <p>JSP Debugging</p> <p>JSP Security</p> <p>JSP Internationalization</p>	2
Spring	<p>Spring - Overview</p> <p>Spring - Architecture</p> <p>Spring - Environment Setup</p> <p>Spring - Hello World Example</p> <p>Spring - IoC Containers</p> <p>Spring - Bean Definition</p> <p>Spring - Bean Scopes</p> <p>Spring - Bean Life Cycle</p> <p>Spring - Bean Post Processors</p> <p>Spring - Bean Definition Inheritance</p> <p>Spring - Dependency Injection</p> <p>Spring - Injecting Inner Beans</p> <p>Spring - Injecting Collection</p> <p>Spring - Beans Auto-Wiring</p> <p>Annotation Based Configuration</p> <p>Spring - Java Based Configuration</p> <p>Spring - Event Handling in Spring</p> <p>Spring - Custom Events in Spring</p> <p>Spring - AOP with Spring Framework</p> <p>Spring - JDBC Framework</p> <p>Spring - Transaction Management</p> <p>Spring - Web MVC Framework</p> <p>Spring - Logging with Log4J</p>	10
Hibernate(Basics)	<p>ORM - Overview</p> <p>Hibernate - Overview</p> <p>Hibernate - Architecture</p> <p>Hibernate - Environment</p> <p>Hibernate - Configuration</p> <p>Hibernate - Sessions</p> <p>Hibernate - Persistent Class</p> <p>Hibernate - Mapping Files</p> <p>Hibernate - Mapping Types</p> <p>Hibernate - Examples</p> <p>Hibernate - O/R Mappings</p> <p>Hibernate - Annotations</p> <p>Hibernate - Query Language</p> <p>Hibernate - Criteria Queries</p> <p>Hibernate - Native SQL</p> <p>Hibernate - Caching</p>	8

	<p>Hibernate - Batch Processing Hibernate - Interceptors</p>	
Spring Boot	<p>Spring Boot - Introduction Spring Boot - Bootstrapping Spring Boot - Tomcat Deployment Spring Boot - Build Systems Spring Boot - Code Structure Spring Beans & Dependency Injection Spring Boot - Runners Spring Boot - Application Properties Spring Boot - Logging Building RESTful Web Services Spring Boot - Exception Handling Spring Boot - Interceptor Spring Boot - Servlet Filter Spring Boot - Tomcat Port Number Spring Boot - Rest Template Spring Boot - File Handling Spring Boot - Service Components Spring Boot - Thymeleaf Consuming RESTful Web Services Spring Boot - CORS Support Spring Boot - Internationalization Spring Boot - Scheduling Spring Boot - Enabling HTTPS Spring Boot - Eureka Server Service Registration with Eureka Zuul Proxy Server and Routing Spring Cloud Configuration Server Spring Cloud Configuration Client Spring Boot - Actuator Spring Boot - Admin Server Spring Boot - Admin Client Spring Boot - Enabling Swagger2 Spring Boot - Creating Docker Image Tracing Micro Service Logs Spring Boot - Flyway Database Spring Boot - Sending Email Spring Boot - Hystrix Spring Boot - Web Socket Spring Boot - Batch Service Spring Boot - Apache Kafka Spring Boot - Twilio Spring Boot - Unit Test Cases Rest Controller Unit Test Spring Boot - Database Handling Securing Web Applications Spring Boot - OAuth2 with JWT Spring Boot - Google Cloud Platform Spring Boot - Google OAuth2 Sign-In</p>	8
Microservices	<p>Introduction To Microservices Microservices Design Principles Microservices Design Patterns Microservices 12 Factors Containerization Interservices Communciation Services Mesh API Managements / API Gateway API Documentations (Swagger) Docker</p>	4
Code Quality	<p>Developer Ground Rules (how to write quality code?) General Coding Standards Code Coverage Best Practices Security Standards (Sonar Cube , SAST, DAST, IAST)</p>	2

	<ul style="list-style-type: none"> Performance Tips & Tricks Linting (Sonar Lint) Importance of Code Reviews 	
Software Testing	<ul style="list-style-type: none"> Introduction Getting Started - Software Testing Black Box Testing White Box Testing Unit Testing Performance Testing Security Testing Software Testing Management and Planning Errors, Defects and Bugs Test Automation 	2
JUnit Testing	<ul style="list-style-type: none"> JUnit Installation and setup JUnit Test Framework JUnit Annotations Tutorial JUnit Assert & AssertEquals Create JUnit Test Suite with Example JUnit @Ignore Test Annotation JUnit Expected Exception Test JUnit ErrorCollector JUnit Parameterized Test TestNG Vs JUnit 	4
Selenium with Java	<ul style="list-style-type: none"> Introduction to Automation Testing Introduction to Selenium Introduction to Selenium IDE Introduction to Selenium WebDriver 3 DataDriven Framework Locators & XPath Hybrid Framework Switches Alerts & Windows Database Testing Selenium Grid Page Object Model 	4
Docker		4
Jenkins		4
DevOps	<ul style="list-style-type: none"> Introduction to DevOps (CI/CD) Jenkins, Maven/ MS Build Integration with Jenkins Testing with Selenium Containerization with Docker Ecosystem and Networking 	4
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