



JAVA FULLSTACK TRAINING SYLLABUS



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HI-TECH INSTITUTION

Hi-tech Institution is a trusted IT training institution established in 2017, dedicated to transforming careers through industry-relevant, real-time project-based learning. With a strong presence in Pondicherry, Thiruchitrambalam, and Chennai, we specialize in creating future-ready professionals.



OUR VISION

Our vision is to bridge the gap between traditional learning and industry needs. Our mission is simple: to empower individuals with hands-on skills, globally recognized certifications, and the confidence to excel in the IT world.

CORPARATE TRUST US

We've successfully partnered with IBM and other forward-thinking organizations to deliver impactful team training. With over 200 batches completed, our track record is built on results, retention, and referrals.

EXPERT FACULTY

At Hi-Tech Institution, training isn't delivered by traditional lecturers — it's led by real-time industry experts. Our Java Full Stack faculty are seasoned professionals with 10+ years of hands-on experience in front-end and back-end development, Spring Boot framework, RESTful APIs, database management, and full-stack web application deployment.

WHAT LEANERS SAY

Our students not only succeed—they return. Many alumni re-enroll for additional courses and refer friends, a testament to our quality, trainer expertise, and hands-on approach.



WHO WE SERVE

- ◆ **Fresh Graduates** – Gain practical, job-ready skills and enter the IT workforce with confidence.
- ◆ **Career Switchers** – Move from non-IT to IT through structured, mentor-led training.
- ◆ **Working Professionals** – Upgrade your skillset, achieve promotions, and switch to high-demand roles.
- ◆ **Corporate Teams** – Custom programs designed to upskill entire teams for upcoming projects.
- ◆ **Final-Year Students** – Strengthen your resume with internships, projects, and certifications before graduation.
- ◆ **Non-Technical Backgrounds** – Step-by-step guidance to transition into IT even without coding experience.
- ◆ **Job Seekers** – Resume, interview prep, and portfolio building for faster placements.

JOB READY SKILL

Learn in months what usually takes years! With real-time projects and practical training in Java, Spring Boot, Frontend Technologies, REST APIs, and Database Integration, our Java Full Stack program makes you job-ready and confident to deliver end-to-end web applications from Day 1.



400+
BATCH TRAININGS
SUCCESSFULLY COMPLETED

9000+
PROFESSIONALS
SUCCESSFULLY TRAINED



01 INTERACTIVE LIVE TRAINING

100% live sessions with real-time Q&A and doubt-solving. Engaging, interactive, and never boring like recorded videos.

02 DAILY HANDS-ON LABS

Every topic comes with guided labs and tasks so you learn by doing, not just watching.

03 ONE-TO-ONE DOUBT SOLVING

Struggling with a concept? Get personal 1:1 mentoring to clear doubts quickly.

04 MENTOR SUPPORT BEYOND CLASS

Get lifetime trainer guidance and alumni group access for continuous support.

05 FLEXIBLE LEARNING

Morning, evening, and weekend batches to fit your schedule.



DOMAIN EXPERTISE

A Journey of Innovation and Success



CAREER GROWTH IN THIS DOMAIN

A career in Java Full Stack Development offers high salaries and global opportunities — with Full Stack Developers earning ₹6–20 LPA+, driven by the booming demand for professionals skilled in Java, Spring Boot, Frontend Technologies, REST APIs, and Database Management across industries building modern web and enterprise applications.

OUR SPECIALIZATION

Unlike generic IT courses, we focus on Java Full Stack Development mastery. Our training covers Core Java, Advanced Java, Spring Boot, Frontend Technologies (HTML, CSS, JavaScript, React), REST APIs, Microservices, and Database Integration. Every session connects theory with hands-on implementation — so you don't just learn concepts, you build full-fledged web and enterprise applications just like industry professionals do.

INDUSTRY-RELEVANT CURRICULUM

- Designed with corporate inputs
- Updated every quarter
- Covers end-to-end Java Fullstack development lifecycle

CERTIFICATION SUPPORT

We provide complete support to help you crack top certifications like Oracle Certified Java Programmer (OCJP), Oracle Certified Professional Java SE, and Full Stack Developer Certifications — with practice exams, expert mentorship, and guided preparation to ensure you achieve certification success and strong career credibility.

INTERNSHIP

Learning without practice is incomplete. That's why we offer internships with real Java Full Stack projects involving frontend and backend development, REST APIs, Spring Boot integration, and database connectivity. Every student works on live industry scenarios, builds end-to-end web applications, and earns an internship certificate that strengthens resumes and boosts interview confidence.

PORTFOLIO BUILDING

Learning without practice is incomplete. That's why we offer internships with real Java Full Stack applications and hands-on development challenges. Students build end-to-end web solutions using Java, Spring Boot, HTML, CSS, JavaScript, and database integration, gaining practical experience that enhances resumes and ensures interview success.

PRACTICAL-FIRST APPROACH

From Day 1, you'll learn by doing through labs, tasks, and real-world projects — gaining hands-on confidence to apply skills instantly.



Table of Contents

HTML Syllabus

◆ Getting Started with HTML

- Introduction to HTML and its role in web development
- Creating your first web page using `<html>`, `<head>`, `<body>`
- Adding line breaks `
` and spacing for readability
- Using comments `<!-- -->` for documentation

◆ Text Formatting & Lists

- Ordered lists `` and unordered lists ``
- Nested lists for hierarchical content
- Emphasizing text with ``, `<i>`, ``, ``

◆ Tables & Links

- Creating tables with `<table>`, `<tr>`, `<td>`
- Adding headers `<th>`, captions, and table borders
- Creating external links ``
- Creating internal page links (anchors) within the same document

◆ Images & Multimedia

- Adding images with `` tag
- Resizing and positioning images using attributes
- Title & alt attributes for accessibility
- Adding audio `<audio>` and video `<video>` elements
- Controlling media with attributes: `autoplay`, `loop`, `controls`

◆ Forms & User Input

- One-line text box `<input type="text">` with labels
- Multi-line text area `<textarea>`
- Radio buttons & checkboxes
- Number input box and date picker
- Dropdown menus `<select><option>`
- Fieldset & legend elements for grouping form items

◆ Advanced HTML Elements

- Meta element for SEO & responsiveness
- Escape characters (<, >, ©)
- Superscript <sup> and subscript <sub>
- Inline frame <iframe> for embedding maps & videos
- Doctype declaration and semantic HTML5 structure (<header>, <section>, <footer>)

◆ HTML5 Graphics

- Introduction to <canvas> element
- Drawing shapes: rectangle, lines, circles
- Applying colors & gradients
- Adding interactivity with simple JavaScript

CSS Syllabus

◆ Introduction to CSS

- What is CSS & how it enhances HTML
- Syntax: selectors, properties, values
- Inline, internal, and external CSS

◆ Fonts & Text Styling

- Changing font type, size, and color
- Using Google Fonts & web-safe fonts
- Font-weight, line-height, and letter-spacing
- Text-decoration, italics, and text-align

◆ Colors, Backgrounds & Borders

- Web colors (RGB, HEX, HSL)
- Background images and repeat properties
- Border styles: solid, dashed, dotted, radius
- Box model: margin, padding, border, content



Classes, IDs & Selectors

- Difference between classes (.class) & IDs (#id)
- Multiple selectors for styling efficiently
- Nesting styles & overriding rules
- Using div and span for layout



Layouts & Positioning

- Block vs inline elements
- Float property for side-by-side layouts
- Relative, absolute & fixed positioning
- Overflow property for handling large content
- Flexbox basics for modern responsive layouts



Menus & Navigation

- Vertical menu using lists
- Horizontal menu with inline-block
- Styling navigation bars with hover effects
- Dropdown menus using CSS only



Advanced CSS Effects

- Opacity & transparency
 - Text-shadow & box-shadow for depth
 - Custom cursor designs
 - CSS transitions & animations
 - Responsive design concepts with media queries
- 

React JS

React Basics

- What is React & why use it
- ES6 refresh: classes, arrow functions, destructuring
- Modules & imports
- Ternary operator for conditional rendering

JSX & Components

- React JSX syntax & rules
- Rendering HTML inside React
- Functional vs Class components
- Props for passing data between components

Events & Lists

- Handling events like clicks & input changes
- Conditional rendering with if, ternary & short-circuit
- Rendering lists with `.map()`
- Assigning unique keys in lists

Forms & Routing

- Controlled components in forms
- Handling form submissions
- React Router for navigation
- Route parameters & navigation links

React Styling

- Inline CSS styling
- Using CSS stylesheets in React
- React-specific `className` usage
- Sass basics for React projects

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Java Programming – Syllabus

◆ Fundamentals of Object-Oriented Programming

- Introduction to Programming Paradigms: Procedure-oriented vs. Object-oriented
- Key OOP Concepts: Abstraction, Encapsulation, Inheritance, Polymorphism
- Benefits of OOP in Software Development
- Real-world examples of OOP

◆ Java Evolution

- History of Java and its journey from Oak → Java
- Java Features: Simple, Portable, Robust, Secure, Platform Independent
- Java Editions: JSE, JEE, JME
- The Java Virtual Machine (JVM), JDK, JRE Overview

◆ Overview of Java Language

- Structure of a Java Program
- Java Program Execution Process
- Java Tokens: Keywords, Identifiers, Literals, Symbols
- First Java Program – "Hello World"
- Compiling and Running Java Programs

◆ Constants, Variables, and Data Types

- Declaring and Initializing Variables
- Scope of Variables (Local, Instance, Static)
- Constants in Java (final keyword)
- Data Types: Primitive (int, char, double, boolean, etc.) and Non-primitive (arrays, classes, strings)
- Type Casting and Type Conversion



◆ Operators and Expressions

- Arithmetic Operators, Relational Operators, Logical Operators
- Bitwise and Assignment Operators
- Increment/Decrement Operators
- Conditional / Ternary Operators
- Operator Precedence and Associativity
- Evaluation of Expressions

◆ Decision Making and Branching

- Control Flow in Java
- if, if-else, if-else-if ladder
- Nested if statements
- switch-case statement
- Use of break and continue

◆ Looping Statements

- Loops in Java: while, do-while, for
- Nested Loops
- Infinite Loops and Exit Conditions
- Enhanced for-each loop
- Practical examples: Patterns, Tables, Iterating Arrays

◆ Classes, Objects, and Methods

- Defining a Class and Creating Objects
 - Declaring Methods and Constructors
 - this keyword and Constructor Overloading
 - Method Overloading and Method Overriding
 - Access Modifiers (public, private, protected, default)
 - Static Methods and Variables
 - Garbage Collection and finalize()
- 

◆ Arrays, Strings, and Vectors

- Single-Dimensional and Multi-Dimensional Arrays
- Array Initialization and Traversal
- String Handling: String Class and StringBuffer
- Common String Methods (length, equals, substring, replace, etc.)
- Introduction to StringBuilder
- Vectors: Creation, Insertion, Deletion, Traversing

◆ Interface: Multiple Inheritance

- Need for Interfaces in Java
- Defining and Implementing Interfaces
- Achieving Multiple Inheritance using Interfaces
- Extending Interfaces
- Functional Interfaces and Lambda Expressions (Java 8+)
- Difference between Abstract Classes and Interfaces

◆ Multithreaded Programming

- Understanding Threads in Java
- Life Cycle of a Thread
- Creating Threads: Extending Thread class, Implementing Runnable interface
- Thread Methods: sleep(), join(), yield(), interrupt()
- Thread Priorities and Synchronization
- Inter-thread Communication (wait, notify, notifyAll)

◆ Managing Errors and Exceptions

- Types of Errors: Compile-time, Runtime, Logical
- Exception Handling Mechanism
- try, catch, finally, throw, throws
- Built-in Exceptions in Java (ArithmeticException, NullPointerException, etc.)
- Creating User-defined Exceptions
- Best Practices in Exception Handling

◆ Managing Input/Output Files in Java

- File I/O Basics – Streams in Java
- Byte Streams vs Character Streams
- Reading and Writing Files using FileInputStream, FileOutputStream
- Reading and Writing using BufferedReader, BufferedWriter
- File Handling with Scanner and PrintWriter
- Serialization and Deserialization
- Practical Hands-on: File copy program, Student record storage

Java GUI Toolkits

◆ Introduction to GUI Programming in Java

- Difference between Console vs. GUI Applications
- Overview of Java GUI Libraries (AWT, Swing, JavaFX – mention focus on Swing & AWT)
- Event-driven programming basics

◆ Abstract Window Toolkit

- AWT Components: Button, Label, TextField, TextArea, Checkbox, Choice, List
- Creating AWT Windows & Frames
- Event Handling in AWT: ActionListener, MouseListener, KeyListener
- Layout Managers: FlowLayout, BorderLayout, GridLayout, CardLayout
- Hands-on: Simple AWT Form Application

◆ Swing Basics

- Introduction to Swing and Difference between AWT & Swing
- JFrame, JPanel, JButton, JLabel, JTextField, JPasswordField
- JMenu, JMenuItem, JToolBar

◆ **Advanced Swing Components**

- JTable, JList, JTree – usage and customization
- JScrollPane, JSplitPane, JTabbedPane
- Swing Layout Managers: GroupLayout, BorderLayout, GridBagLayout
- Event Handling in Swing (Action, Item, Key, Mouse events)
- Hands-on: Student Information Form with table

◆ **GUI Styling & Enhancements**

- Working with Fonts, Colors, and Borders
- Icons and Images in Swing Applications
- Tooltips, Mnemonics, and Accelerators
- Swing Timers & Progress Bars
- Hands-on: Mini Project – Calculator App

MySQL with Java

◆ **Basics of MySQL**

- What is a Database? Difference between DBMS and RDBMS
- Overview of MySQL Features
- Installing and setting up MySQL
- MySQL Workbench and Command Line Client

◆ **MySQL Fundamentals**

- Databases, Tables, and Records
- SQL Data Types
- Creating and Dropping Databases
- Creating Tables with Constraints (Primary Key, Foreign Key, Not Null, Unique)
- Altering Tables and Deleting Tables

◆ Data Operations in MySQL

- Insert, Update, Delete Statements
- Select Queries with WHERE, ORDER BY, GROUP BY
- Aggregate Functions: COUNT, SUM, AVG, MAX, MIN
- Using Operators: IN, BETWEEN, LIKE
- Joins: INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL JOIN

◆ JDBC (Java Database Connectivity)

- Introduction to JDBC API
- Steps in JDBC: Load Driver → Establish Connection → Create Statement → Execute Query → Close Connection
- JDBC Drivers (Type 1-4)
- Executing SQL Statements with Statement and PreparedStatement
- ResultSet and Data Retrieval

◆ JDBC Advanced

- Transactions in JDBC: Commit & Rollback
- Batch Processing in JDBC
- CallableStatement for Stored Procedures
- Handling SQL Exceptions

Spring Framework

◆ Introduction to Spring Framework

- Need for Spring, advantages, and features
- Overview of Spring modules

◆ Inversion of Control (IoC)

- Dependency Injection (DI) – Constructor & Setter injection
- Spring Bean lifecycle & scopes

◆ Spring Configuration

- XML-based configuration
- Annotation-based configuration (@Component, @Autowired, @Qualifier)
- Java-based configuration (@Configuration, @Bean)

◆ Spring AOP (Aspect-Oriented Programming)

- Concepts of AOP (Advice, JoinPoint, Pointcut, Aspect)
- Implementing AOP using Spring

◆ Spring JDBC

- Database connectivity with Spring JDBC
- JdbcTemplate and NamedParameterJdbcTemplate

◆ Spring ORM Integration

- Hibernate with Spring
- JPA with Spring

◆ Spring MVC

- DispatcherServlet, Controllers, ViewResolvers
- Form handling and validation

◆ Spring Security (Basics)

- Authentication & Authorization concepts
- Securing endpoints

Spring Framework

◆ Introduction to Spring Boot

- Why Spring Boot? Differences from Spring
- Features: Auto-configuration, Embedded servers, Starter dependencies

◆ Creating Spring Boot Applications

- Project setup using Spring Initializr
- Main class and @SpringBootApplication annotation

◆ Configuration in Spring Boot

- Application properties & YAML configuration
- Externalized configuration

◆ REST APIs with Spring Boot

- Building RESTful services (@RestController)
- Request mappings, Path variables, Request parameters
- Consuming APIs with RestTemplate / WebClient

◆ Spring Boot with Databases

- Spring Data JPA & Hibernate integration
- Repository patterns (CrudRepository, JpaRepository)
- Database migrations with Flyway / Liquibase

◆ Spring Boot Security (Basics)

- Securing REST APIs
- Role-based access control

Spring Boot Profiles

◆ Introduction to Profiles

- Need for different environments (dev, test, prod)
- Defining and activating profiles (application-dev.properties)

◆ Profile-specific Configuration

- Using @Profile annotation
- Environment-specific beans & configurations

SQL Syllabus

◆ Introduction to SQL

- Overview of Databases and SQL
- Importance and Applications of SQL
- Understanding RDBMS (Relational Database Management System)
- Introduction to SQL Commands (DDL, DML, DCL, TCL)
- Connecting to SQL Server / MySQL / Oracle Database
- Creating and Managing Databases

◆ SQL Syntax

- SQL Language Rules and Conventions
- Structure of SQL Queries
- Using Clauses (SELECT, FROM, WHERE, ORDER BY, GROUP BY, HAVING)
- Writing Readable and Optimized SQL Statements
- Understanding Case Sensitivity and Naming Conventions

◆ SQL Operations

- Data Definition Language (DDL): CREATE, ALTER, DROP, TRUNCATE
- Data Manipulation Language (DML): INSERT, UPDATE, DELETE
- Data Control Language (DCL): GRANT, REVOKE
- Transaction Control Language (TCL): COMMIT, ROLLBACK, SAVEPOINT
- Practical Examples with Each Command

◆ Search Operations

- Using the SELECT Statement
- Filtering Records with WHERE
- Pattern Matching using LIKE and Wildcards
- Sorting Results with ORDER BY
- Using DISTINCT, BETWEEN, IN, and IS NULL



◆ Database Operations

- Creating and Managing Tables
- Adding, Modifying, and Deleting Columns
- Renaming and Dropping Tables
- Creating and Managing Schemas
- Viewing Metadata (DESCRIBE, SHOW TABLES, INFORMATION_SCHEMA)

◆ Setting Conditions

- Logical Operators: AND, OR, NOT
- Conditional Expressions: CASE, IF, NULLIF, COALESCE
- Conditional Filtering in Queries
- Using Subqueries for Conditional Selection

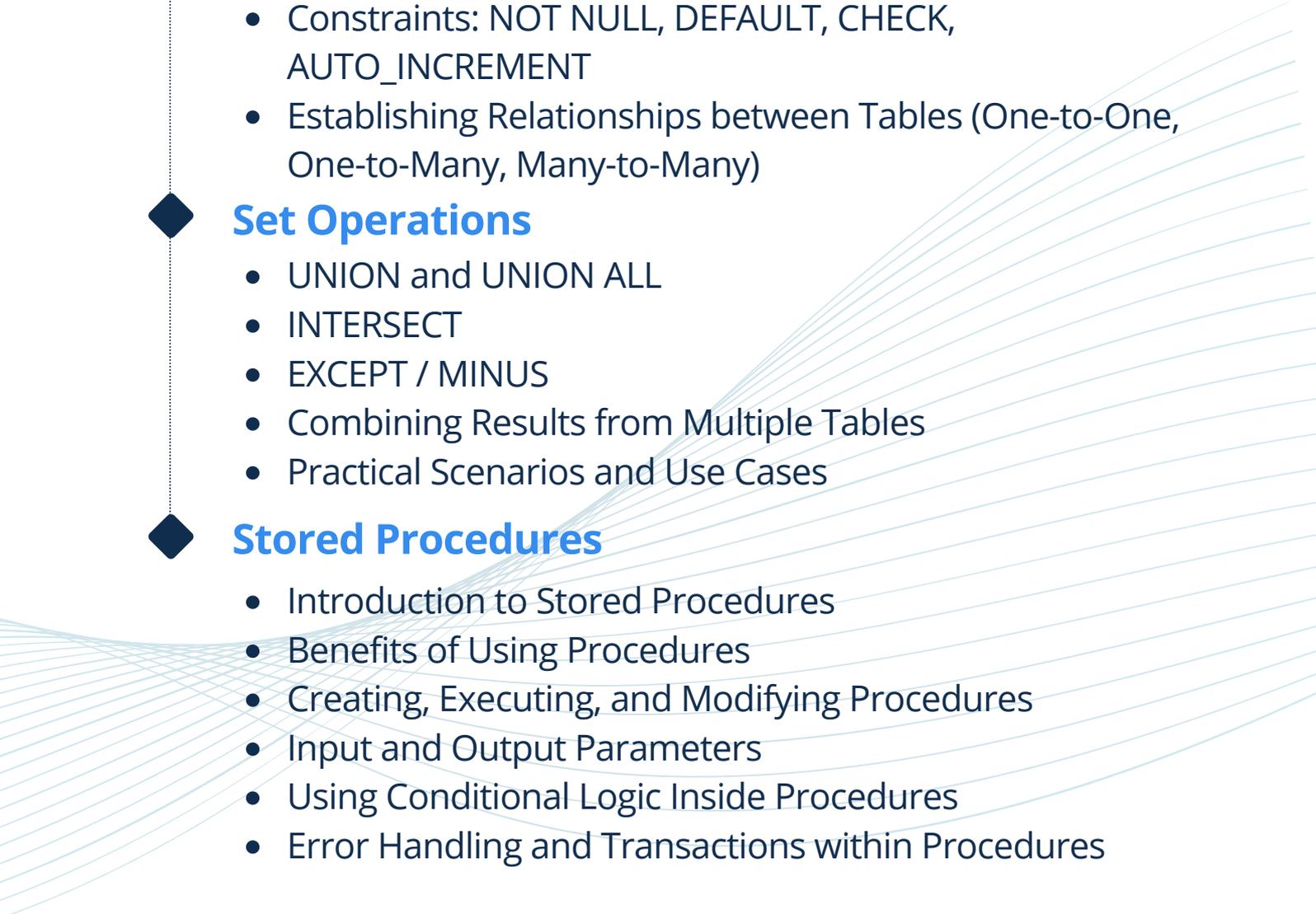
◆ Keys

- Understanding Primary Key and Foreign Key
- Unique, Composite, and Candidate Keys
- Constraints: NOT NULL, DEFAULT, CHECK, AUTO_INCREMENT
- Establishing Relationships between Tables (One-to-One, One-to-Many, Many-to-Many)

◆ Set Operations

- UNION and UNION ALL
- INTERSECT
- EXCEPT / MINUS
- Combining Results from Multiple Tables
- Practical Scenarios and Use Cases

◆ Stored Procedures

- Introduction to Stored Procedures
 - Benefits of Using Procedures
 - Creating, Executing, and Modifying Procedures
 - Input and Output Parameters
 - Using Conditional Logic Inside Procedures
 - Error Handling and Transactions within Procedures
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WHAT OUR STUDENTS SAY

We believe results speak louder than promises — and our students' reviews are proof of the trust and transformation we deliver every batch.

Kirubakaran .D
5 reviews
★★★★★ 8 months ago
I joined this institute to take training for AWS & DevOps. My all over experience is very good 🙌. The knowledge given by the sir is very helpful to me 🙌. Thank you.

Harish Kumar
4 reviews
★★★★★ 8 months ago
While I joining this institute, I have less knowledge in aws and devops , after the guidance and good teaching by the Mathesh sir I have gained more knowledge. Thank you for your guidance and Teaching.

harshavardhana
2 reviews
★★★★★ 11 months ago
I recently completed an AWS and DevOps course at Hi-Tech institution, and I couldn't be more satisfied with the experience. The course was incredibly well-structured, covering both fundamental and advanced concepts in a way that was easy to follow yet challenging enough to push my learning boundaries.

Sridhar sri
1 review
★★★★★ 5 months ago
"Well-organized AWS and DevOps training with experienced mentors. A great place to build practical skills!"



Bhuvanesh.V
2 reviews
★★★★★ 5 months ago
Good learning environment! The AWS and DevOps sessions were clear, practical, and highly beneficial for beginners



AKASH
2 reviews
★★★★★ 5 months ago
Excellent training on AWS and DevOps! The mentors were knowledgeable, and the sessions were very insightful. Highly recommended!



Sanjeevi Kumar
1 review
★★★★★ 3 months ago
I recently completed the AWS DevOps course at HiTech and I'm extremely satisfied with the experience. The trainers were knowledgeable and provided excellent support throughout the course. The hands-on labs and real-world examples helped me gain practical skills and confidence in using AWS services.

Kamal Raj
1 review · 1 photo
★★★★★ 11 months ago

Beyond the classroom, the Hi-Tech Institution center offers excellent support for AWS & DevOps The availability of additional resources, such extra practice sessions, is incredibly beneficial. The staff is always approachable and ready to assist with any queries or challenges.

Anuj Jena
3 reviews
★★★★★ 7 months ago

I have attend AWS batch (Batch Number - B184 & Timing - 7:00 AM - 9:00 AM (Weekend)) & it was my good luck to had Hari as my batch instructor. Hari has tremendous knowledge on AWS & DevOps. I learnt lot of new topics related to AWS & DevOps. I want to highlight some point here according to my experience.

Sathyaswarubini Kannan
4 reviews
★★★★★ 7 months ago

I am Sathyaswarubini from Batch -B184, honestly speaking that Hari is a perfect instructor for AWS DevOps session. I am completely impressed with his Youtube videos and coaching. Every session started on time with clear note of him. I spent a great period of time on his sessions and got some confident level to attend the interviews in future. Thank you hari.

Naveen Kumar
1 review
★★★★★ 5 months ago

Had a great experience learning AWS and DevOps at Hi-Tech Institution. The structured training and expert guidance made it worthwhile



D.Chandru
1 review
★★★★★ 2 weeks ago **NEW**

I had the opportunity to learn AWS Cloud Computing at HTGE Technologies Pvt Ltd for one month, and it was an excellent experience. The training was well-structured, covering both fundamental concepts and practical applications of AWS services. The instructors were knowledgeable, supportive, and always ready to clarify doubts with real-world exampes. which helped me gain confidence in working with cloud tools. The learning environment was friendly, interactive, and career-focused.

vindhiya e
1 review
★★★★★ 4 days ago **NEW**

I recently completed a one-month Cloud Computing internship at HTGE Technologies Pvt Ltd. It was a great learning experience where I got to work with real cloud platforms like AWS . The team was supportive, and the work environment made it easy to grow and ask questions. I learned a lot in a short time and truly appreciated the hands-on exposure. Highly recommend HTGE for anyone looking to build practical skills in tech.

Check out what our students are saying about us on Google :

<https://share.google/hm4sQdfCGAIA3CYHN>



Your Future in JAVA Fullstack Starts Here

You've explored the course, the curriculum, the career scope, and the success stories. Now comes the most important step — taking action to build your career.

At HTGE Technologies, we are not just another training institute. We are a career-launchpad trusted by 200+ batches and corporate clients like IBM. Our mission is simple: to bridge the gap between learning and real-world application.

MEDIA MENTIONS

Youtube : <https://www.youtube.com/@hitechinstitution>

LinkedIn : <https://www.youtube.com/@hitechinstitution>

Instagram : <https://www.instagram.com/hitech.institution>

Website : www.hitechinstitution.com

COURSE DETAILS

Duration: 3 Months + Internship

Mode : In-Person & On-Line

Language : Tamil & English

Mode of Training: Live Online Sessions (with recordings)

Eligibility: Freshers, Working Professionals, Final-Year Students, Career Switchers

READY TO TAKE THE NEXT STEP

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Congratulations on taking the first step toward JAVA Fullstack mastery!