PROGRAMMATIC
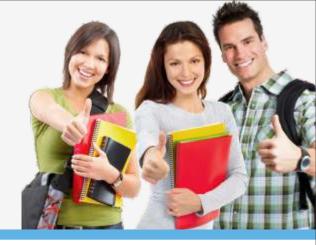## DEVELOPMENT USING
APEX AND VISUALFORCE

CURRICULUM

Who should take this course?
This course is designed for programmatic developers who are new to the Force.com platform, who need to be able to write programmatic customizations to both the business logic and user interface layers using Apex and Visualforce.

Prerequisites
The prerequisites include a solid understanding of basic Salesforce concepts and functionality and:
- 1 year programming in Java (or another object-oriented programming language)
- Basic data modeling for relational databases
- Basic SQL
- Basic HTML
- Basic JavaScript

What you will learn
When you complete this course, you'll be able to:
- Create and modify objects using the declarative interface
- Write business logic customizations using Apex triggers and classes. Those customizations will use SOQL and DML.
- Design programmatic solutions that take advantage of declarative customizations
- Describe how your trigger code works within the basics oft he Save Order of Execution
- Describe some of the fundamental aspects of designing programs on a multi-tenant platform
- Write Visualforce markup and code to customize the user interface
- Use the built-in testing framework to test Apex and Visualforce

MODULES & TOPICS

Programming with Apex
- Describe key aspects of Apex that differentiate it from other languages, such as Java and C#
- Describe why Apex transactions and governor limits must be considered when writing Apex
- Execute simple Apex
- Use the sObject data type, the primitive data types, and basic control statements in Apex

Introduction to OOPS
- Describe how Apex classes are used
- Define an Apex class
- Determine what data an Apex class can access
- Conditions and logic flows
- Collections
  - List
  - Set
  - Map

Use SOQL to Query Your Org's Data
- Write a basic query using Salesforce's query language, SOQL

- Process the result of a query in Apex
- Create a query dynamically at run-time

Use SOQL to Query Parent-Child Relationships
- Describe a relationship query
- Write a query that traverses a child-to-parent relationship
- Write a query that traverses a parent-to-child relationship

DML Essentials
- List the differences between the ways you can invoke DML operations
- Write Apex to invoke DML operations and handle DML errors

Creating Visualforce Pages
- Create a Visualforce page
- Reference a standard controller
- Launch a Visualforce page using a custom button
- Display data from a record in a Visualforce page

Exploring the View and Controller Layers of Visualforce
- Create a Visualforce page
- Display related data
- Invoke standard controller actions

Working with Custom Controllers and Controller Extensions
- Create controller extensions
- Create a custom controller
- Work with properties
- Use PageReferences
- Invoke custom methos in Visualforce pages

Working with List Controllers
- Use a standard list controller in a Visualforce page
- Create a custom list controller

Visualforce Development Considerations
- Determine whether a declarative solution exists for your requirements
- Describe common governor limit issues and security concerns
- Describe Visualforce strategies

Testing Essentials
- Describe Apex's testing framework
- Create test data
- Write and run an Apex test

Testing Strategies
- Describe practices for writing code that is easy to maintain and extend
- Write triggers and classes that assume batches of data as input
- Write code that works efficiently with the database, both in
- querying and using DML

Strategies for Designing Efficient Apex Solutions
- Determine your code coverage percentages
- Create tests using best practices

Introduction to Batchable interface
- How to write batch class in Apex

Trigger Essentials
- Describe what a trigger is used for
- Describe the syntax of a trigger definition

- Use trigger context variables

Trigger Design Strategies
- List declarative mechanisms you can use to implement complex business logic, for what types of problems they are best used, and their limitations
- Describe ways in which you can use declarative functionality to improve your programmatic solutions

Introduction to Integration
- Restful integration

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