NetTech India

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PG CERTIFICATION IN SOFTWARE TESTING

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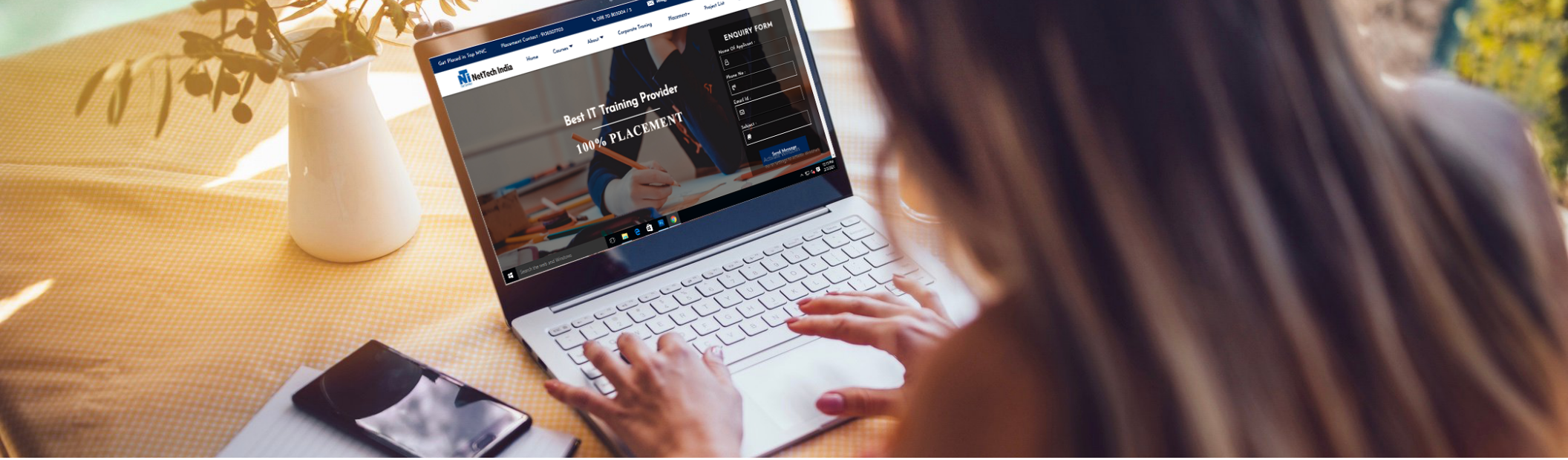

ABOUT US

NetTech India Training Institute offers a high-quality learning experience in the field of IT training to train students on brand new technologies and train them to deliver the desired results with commercially relevant and re-organized technical skills.

The probability of achieving your dream job will keep on increasing day by day once you complete a course in NetTech India. We also focus on improving soft skills in terms of communication, leadership, teamwork, external appearance, and attitude which helps everyone to be professional in all the aspects of their career.

25% Theory

75% Practicals

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ABOUT
SOFTWARE TESTING

Testing is the procedure of assessing a system or its component(s) with the aim to discover whether it fulfills the predefined prerequisites or not. Testing is executing a framework with a specific end goal to recognize any gaps, errors, or missing prerequisites as opposed to the real necessities. Software testing is a procedure of executing a project or application with the aim of finding software bugs.

BENEFITS OF
SOFTWARE TESTING

- Career Growth - Higher Pay & Position
- Encourages professional development
- Enriches self-image and reputation
- Enhances professional credibility.
- Abundant Job Opportunities
- Used In Many Industries
- Global Recognition
- Secure and Flexible
- 150+ Case Studies
- 50+ Projects

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MODULES OF PG CERTIFICATION IN SOFTWARE TESTING

1. MANUAL TESTING
2. AUTOMATION TESTING
3. Core JAVA & SQL
4. Selenium & QTP
5. PYTHON
6. ISTQB
7. AWS
8. DEVOPS

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MANUAL TESTING

- Introduction to testing.
- Verification vs validation.
- Types of Applications.
- Probabilities of getting an error in an application.
- SDLC – Software Development Life Cycle.
- Models- Waterfall, Prototype, Spiral, Incremental
- Agile methodology and Scrum Framework V-Model.
- Advantages and Disadvantages of each SDLC model.
- Principles of Testing.
- STLC –Software Testing Life Cycle.
- Difference between Test case, Use case, and test, scenarios.
- How to prepare a test case template?
- Difference between Error, bug, defect, and failure.
- Test Case Design technique.
- Boundary value Analysis.
- Equivalence Partitioning.
- Decision Table.
- State Transition Diagram.

- Use Case Testing. Bug Life cycle.
- How to Prepare Bug template?
- Creating defects report.
- Bug Tracking tool.
- Types of Testing.
- Difference between Static and Dynamic testing.
- Difference between Functional and Nonfunctional testing.
- Black box testing.
- Integration testing.
- Big Bang Integration.
- Incremental Approach – Top-Down, Bottom-up and
- Hybrid System Integration Testings.
- User Acceptance Testing.
- Entry Criteria and Exit Criteria.
- Test Environment and Test data preparation.
- White box testing.
- Flow graph notations.
- Statement coverage.
- Branch Coverage.
- path coverage.
- Cyclometric complexity.
- RTM(requirement traceability matrices)

Quality

- Concept of quality,
- quality definition,
- quality views,
- Quality attributes for a software,
- role or tester in achieving the software quality,
- Quality management system,
- quality assurance,
- quality control
- Introduction to software testing metrics

Skill needed for software tester:

- Technical skills, behavioral skills, career path.

Manual Projects

- Read SRS and understand application functionalities,
- Identify scenarios and develop test cases based on the same,
- Execution of test cases and defects reporting,
- Post mortem reviews

And Many More....

Automation Testing

- **MODULE 1**

  VBSCRIPT

  - VBScript (Microsoft Visual Basic Script) is a scripting language developed by Microsoft.
  - VBScript is the scripting language for QTP (Quick Test Professional).
  - Introduction of VBScript, Data Types, Variables, array, Multi Dimension array, Redim, operator, InputBox,
  - Conversion Function.
  - Looping Statement=while wend, do while loop, do loop while, do until loop, do loop until, for next, for
  - each next.
  - Conditional Statement=if, if-else, if-else-if, switch.Procedures= Function, Sub Routine

QTP-UFT

- **Introduction to QTP:** What is Automation Testing? When Automation is needed? When Automation is not needed? Advantages of Automation Testing. Disadvantages of Automation Testing. What are the popular Automation Tools in the industry? What is the difference between various Automation Testing Tools? Basic Components in QTP , Add in Manager. How does QTP works/Object recognition concept. Record a sample Test. Understand the Script. Execution of a Test. Enhancement of recorded script.
- **Framework in QTP:** What is Framework. Types of Framework. Linear Scripting. Structured Scripting. Data Driven. Keyword Driven. Modular Driven. Hybrid
- **Object Repository:** QTP Classes and Objects. Details of OR. Types of OR. How to create OR. Test Object Vs Run time Object. Configuring Object identification. Object Spy. Object Properties. Logical Name. Mandatory/Assistive properties /Ordinal identifier. Smart Identification. Compare and Merge options
- **Recording Modes:** Types of Recording Modes. Normal Recording Mode. Analog Recording Mode. Low Level Recording Mode.
- **Checkpoints:** What is Checkpoint. Why Checkpoint is needed. Types of Checkpoint. Different ways of Inserting Checkpoints.

- **Parameterization:** What is Parameterization? Why Parameterization is needed. Types of Parameterization. How to access data from Global Sheet and Local sheet.
- **Actions:** What is Action? Types of Actions. Methods to import an Action. Call to New. Call to Existing. Call to Copy.
- **Regular Expression:** Regular Expression. When to Use Regular Expression? How to use Regular Expression in Descriptive Programming?
- **Recovery Scenarios:** Handling the exception using Recovery Scenario Manager. Usages of Recovery
- Scenario Wizard. Completing a Recovery Scenario. Creation and Association of.QRS file for Recovery Scenario
- **Step Generator:** What is Step Generator. How to Generate script using Step Generator. Advantages & Disadvantages of using step Generator.
- **Virtual Object:** What is a Virtual Object? When Virtual Object is used? Limitations of Virtual Object
- **Debugging:** When Debugging is used. Step Into. Step Out. Step Over.
- Descriptive Programming: What is Descriptive Programming? Types of Descriptive Programming. Working with DP Object. Working with Object Collection.
- **QTP Project**

- **MODULE 2**

  Foundation (Core Java)

  Objectives:

  Core Java training is a foundational course that imparts the fundamental knowledge of developing code using Java programming language. Core Java has wide range of open source libraries and frameworks. Develop codes in Java implementing object-oriented concepts. Utilize the advance class features including inheritance, polymorphism, overloading, overriding, interfacing, abstract classes and more to develop efficient and reusable codes. Create programs using generic collections.

  Course outline

  Introduction of core java, What is java, Data Types, JAVA variables , JVM ,JRE,JDK, Java for loop, While loop do while, break, continue, OOP's concepts, Objects and Class ,method overloading and overriding, Execution of JAVA programs.

Databases (SQL)

This course provides the essential SQL skills that allow developers to write queries against single and multiple tables, manipulate data in tables, and create database objects. Students learn to control privileges at the object and system level. This course covers creating indexes and constraints, and altering existingschema objects. Students also learn how to create and query external tables. Students learn to use the advanced features of SQL in order to query and manipulate data within the database, use the dictionary views to retrieve metadata and create reports about their schema objects. Students also learn some of the date-time functions available in the Oracle Database.

Course Outline

Retrieving Data Using the SELECT Statement , Restricting and Sorting Data, Using Single-Row Functions to Customize Output ,Using Conversion Functions and Conditional Expressions, Reporting Aggregated Data Using the Group Functions. Displaying Data from Multiple Tables ,Using Sub queries to Solve Queries Using the Set Operators ,Manipulating Data ,Using DDL Statements to Create and Manage Tables, Creating Other Schema Objects.

Locator Techniques: Introduction about locator concept. Brief explanation of different locator techniques. Xpath techniques explanation with different kind of real-time scenarios. Identify elements and objects using Firebug, Locating elements by ID, Name, Link Text,PartialLinkText,CssSelector,ClassName,XPath.

WebDriver Concepts: WebElements,CheckBox,RadioButton,DropDown,Alert-Popup, Read and Write data from excelsheet, Image, Navigation Commonds, DataBaseTesting.

Test-NG: Brief about Testing framework and TestNG. Annotation concepts and types. TestNG Configuration. Parallel script execution. Grouping the test cases. Parameter configurations. Report generation. Create customized report using TestNG & Java.

Concepts of Framework: Introduction to framework, about Framework, Use of framework, Different types of frameworks. DataDriven Framework, KeywordDriven Framework, Hybrid Framework.

Selenium Grid: Introduction of selenium Grid. Installation and setup of Hub and node. Simple script execution using grid. Parallel execution using grid.

Selenium with Core JAVA:

Introduction of selenium. Selenium components. How differs from other automation tools. Advantages of selenium. Overview of Eclipse.

Selenium Architecture: Selenium RC Architecture. Webdriver Architecture. Webdriver Vs Selenium RC.

A brief explanation about the advantages of web drivers.

Selenium IDE: Download and Installation of Mozilla Firefox Add-ons. Record and playback techniques. Modifying the script using IDE. Validate the locator value using IDE.

Selenium IDE Concepts & Commands: Building Test cases using Selenium IDE, Creating test suites, Adding Selenium IDE commands, Selenium IDE Menus, Selenium IDE commands (assert, verify, wait, and store the elements).

Selenium setup: Step by step explanation for Setting up Eclipse, Integration of Eclipse, and WebDriver. WebDriver & Comparison with Selenium RC. Details related to RC server and Configurations of RC Hubs and Nodes.

WebDriver: Download and Setup Selenium WebDriver and Java - JDK. WebDriver Introduction, Methods in WebDriver, Detailed discussion about web driver commands. Handling different browsers. Synchronization. Create our own methods in web driver. More programming techniques in web driver.

MODULE: 3 Performance testing Tool – Loadrunner

LoadRunner Installation. LoadRunner architecture. Where to install Load Runner components. Identify hardware and software needed for installation. Installing Loadrunner samples.

VUGEN: Introduction to VUSER Concept: Definition of Vuser. Why VUGEN is Used? Features of VUGEN.VUSER types.

Streamlining Recording: Settings to be done before recording. Modes of recording. Choosing the right protocol. Types of protocol loadrunner supports. Single and Multiple protocols. Use of protocol advisor.

Recording Script using VUGEN:VUSER Script sections (Init, Action and end). Creating New Virtual VUSER script. Adding and removing protocols. Choosing New Virtual user category. Begin Recording on your application. Ending and Saving a recording session. Running the Created Script

Introduction to Output window in VUGEN: Replay Log. Recording Log. Generation Log. Correlation Results

Understanding the VUSER script: Viewing and modifying VUSER scripts. Understanding the functions generated in the code. Getting Help on functions. Workflow Wizard. Walkthrough on few Loadrunner functions. Recap of Steps for creating Vuser Scripts.

VUGEN parameters: Definition of parameter. Why parameterization is required. Parameters Limitations. Creating Parameters. Types of parameters. Using Existing Parameters. Using Parameter List. Parameterization options.
File and table type parameters: Creating data files. Properties of file type parameters. properties of table
type parameters.
Loadrunner Testing Process: Planning the test. Creating Vuser Script. Creating the scenario. Running the scenario. Monitoring the scenario. Analyzing the scenario
Kinds of Scheduling Scenarios: Schedule by scenario. Schedule by group. Running scenarios and controlling Vusers: Running entire scenario. Controlling Vuser groups. Controlling individual Vusers. Manually adding Vuser to running scenario. Manually adding Vuser to
Rendezvous points.
Monitoring and Analysis: Online Monitoring: About Online Monitoring. Setting up the Monitoring environment. Monitor types. Choosing Monitors and measurements in the controller. Starting the monitors in the controller. Opening online monitor graphs in the controller. Setting monitor options
Analysis: Introduction to Analysis: Quality control of solid dosage forms. QC of Semi solid, liquid dosage forms and sterile products. QC of Aerosol and NDDS - quiz 1 .QC of Aerosol and Drug-Excipients Interaction
Quality control and quality assurance:

MODULE: 4 Test Management Tool – Testlink

- About the test link,
- Browser support,
- Overall structure,
- Basic terminologies,
- Functional overview,
- Test projects,
- Creating a test project,
- Test Project management,
- requirement specifications,
- The requirement to test case mapping,
- Create test plan,
- Builds management,
- Test specification,
- Test case and suites,
- Adding test cases to test plan,
- Removing test cases case
- Assignment for execution, Milestone, Keywords, Test reports and matrices, Charts, Administrator, Import and export data in XML, Shortcuts.

MODULE: 5 Defect Tracking Tool – Bugzilla

- About Bugzilla,
- Why Bugzilla?
- Bug life cycle.
- Features, Platform, and requirements,
- Home page,
- Self-registration,
- Create, user,
- Administration,
- Products, Email preference,
- Components,
- Flags,
- Creating flags,
- Whining, Adding an event,
- Creating a new bug,
- Filling a bug,
- Advance Search ,Reports

MODULE: 6 ISTQB Certification and ISTQB Agile Level Preparation

MODULE: 7 Projects.

PYTHON

1 Introduction to Python

- History of Python
- Why to learn python
- How is Python Different?
- Installing Python

2 Python Interpreter

- Using the interpreter
- Integrated Development Environments (IDE) How to run Python programs?

3 Basics of Python

- Variable
- Keywords
- Statements & Comments
- Indentation
- Data types

- Static Typing vs Dynamic Typing
- Input and output
- Operators Arithmetic operator Relational Operator Assignment Operator
- Logical operator Bitwise operator Membership Operator
- Identity Operator

4 Control Flow

- If statement
- If - else
- If – elif -else
- Nested if-else
- while loop
- for-in loop
- Nested for loop
- Nester while loop
- Loop with else
- Pass statement
- Break and continue

5 Functions

- Basics Defining function
- function call Return statement
- Function with parameter and without parameter
- Function parameters Call by value or call by reference
- local and global variable
- Recursion, Anonymous (lambda) function
- User define functions
- Examples

6 Modules

- Defining module
- How to create a module
- Importing module
- Dir()
- Module search path
- Reloading a module
- Sys module
- Os module
- namespace

7 Package

- Defining package
- How to create a package
- Importing package
- Installing third party packages

8 Numeric types

- Numeric type basics
- Hexadecimal, Octal, and Binary Notation
- Complex Numbers
- Typecasting Numeric Functions
- Random number generation(Using Random Modules)

9 String

- Defining a string
- Different ways to create string Accessing elements of the string Escape sequence
- Raw string String methods
- String formatting Expression

10 List

- Defining a list
- Creating list
- Accessing list elements of the list
- Deleting list
- List methods
- Functions used with a list
- List comprehension
- Implementation of stack and queue using the list
- Use of Zip ()
- Matrix operations using list

11 Tuple

- Defining a tuple
- Creating a tuple
- Accessing elements of the tuple
- What is Immutability
- List vs tuples
- Tuple Methods Functions used with tuple
- Advantage of Tuple

12 Dictionary

- Defining a dictionary
- Creating a dictionary
- Accessing elements of the dictionary
- Deleting a dictionary
- Dictionary methods
- Dictionary Comprehension

13 Set

- Defining a set
- Creating set
- Set operations
- Set methods
- Set comprehension

14 Files

- Defining a file
- Types of file file operations
- Opening a File
- Closing file
- File modes

- File attributes
- Writing to file
- Reading from file
- Appending to file
- File positions
- Binary file
- Pickle module

15 Exception Handling

- Defining an exception?
- Default exception handler
- Exception handling techniques

a. Detecting Exception (try)
b. Catching exceptions (catch)
c. Catching multiple exceptions
d. Raising exception (raise) Finally block

- User defined exceptions

16 Object Oriented Programming

- OOPS concepts defining
- Class Creating object
- Method vs function Calling methods
- Instance attribute vs class attribute
- Instance method vs class method
- Private attribute and method Static Method
- Method Overloading Constructor
- Method Overriding Constructor
- List of objects Inheritance
- Eamples

17 ADDITIONAL CONCEPTS

- Introductions of all modules

I. Numpy
II. Scipy
III. Pandas
IV. Matplotlib
V. Django

18 LIVE PROJECTS

- Create GUI and store data in the Database. (5-day session)
- Create a server-client program. (using TCP)

And Many More...

SECURITY TESTING

1.Introduction to Pentesting

- i)What is a web application?
- ii)History of Web-Applications
- iii)Existing problems and challenges in present web applications
- iv)Overview of web application defenses

2.Information gathering

- i)Footprinting Domain details (whois)
- ii)OS and Service fingerprinting – Netcraft.com, Banner grabbing, HTTPprint
- iii)Google hacking
- iv)DIR Buster & DIRB
- v)What web
- vi)Spidering a web site

3.Mastering Burp Suite

- i)Introduction to burp suite
- ii)Configuring burp suite
- iii)Burp proxy, Burp Spider, Burp Intruder, Burp Repeater, Burp Sequencer

4.Firefox Addons

- i)Tamper Data
- ii)SQL inject me
- iii)XSS me
- iv)Firebug
- v)Live HTTP headers
- vi)Foxy Proxy
- vii)Web Developer

5.Web Shells

6.HTTP basics and HTTP authentication

- Brute force authentication, Brute force Authorization, Brute force web services, Brute force web server, Brute force .htaccess

7.Web Application Session Management

8.HTML Injection

9.Command Injection

10.File Upload

11.Encoding methods

12.XSS

- i)Reflected XSS, Stored XSS, DOM XSS
- ii)Implications of XSS
- iii)Test Methodology for XSS
- iv)Remediation

13.CSRF

- i)CSRF with GET method
- ii)CSRF with POST method
- iii)Implications of CSRF
- iv)Test methodology for CSRF
- v)Remediation

14.SQL Injection

15.LFI

16.RFI

17.Open Redirect

18.IDOR(Insecure Direct Object Reference)

19.Automated Pentesting

(And Many More...)

CLOUD (AWS)

1. Introduction to AWS

- What Is Cloud Computing?
- AWS Fundamentals
- AWS Cloud Computing Platform

2. Amazon Simple Storage Service (Amazon S3) and Amazon Glacier Storage

- Introduction
- Object Storage versus Traditional Block and File Storage
- Amazon Simple Storage Service (Amazon S3) Basics
- Buckets
- Amazon S3 Advanced Features
- Amazon Glacier
- Summary

3. AWS Identity and Access Management (IAM)

- Principals
- Authentication
- Authorization
- Other Key Features
- Summary

4. Amazon Elastic Compute Cloud (Amazon EC2) and Amazon Elastic Block

- Store (Amazon EBS)
- Introduction
- Amazon Elastic Compute Cloud (Amazon EC2)
- Amazon Elastic Block Store (Amazon EBS)
- Summary

5. Amazon Virtual Private Cloud (Amazon VPC)

- Introduction
- Amazon Virtual Private Cloud (Amazon VPC)
- Subnets
- Route Tables
- Internet Gateways
- Dynamic Host Configuration Protocol (DHCP) Option Sets
- Elastic IP Addresses (EIPs)
- Elastic Network Interfaces (ENIs)
- Endpoints
- Peering
- Security Groups
- Network Access Control Lists (ACLs)

- Network Address Translation (NAT) Instances and NAT Gateways
- Virtual Private Gateways (VPGs), Customer Gateways (CGWs), and Virtual Private
- Networks (VPNs)
- Summary

6. Elastic Load Balancing, Amazon CloudWatch, and Auto Scaling

- Introduction
- Elastic Load Balancing, Application Load Balancing
- Amazon CloudWatch
- Auto Scaling
- Summary

7. Databases and AWS

- Database Primer
- Amazon Relational Database Service (Amazon RDS)
- Amazon Redshift
- Amazon DynamoDB
- Summary

8. SQS, SWF, and SNS

- Amazon Simple Queue Service (Amazon SQS)
- Amazon Simple Workflow Service (Amazon SWF)
- Amazon Simple Notification Service (Amazon SNS)
- Summary

9. Domain Name System (DNS) and Amazon Route 53

- Domain Name System (DNS)
- Amazon Route 53 Overview
- Summary

10. Amazon ElastiCache

- Introduction
- In-Memory Caching
- Amazon ElastiCache
- Summary

11. Additional Key Services

- Introduction
- Aws Lambda
- Aws CloudFront
- Redshift
- Kinesis
- ECS
- Directory Services
- Storage and Content Delivery
- Security
- DevOps

12. Security on AWS

- Introduction
- Shared Responsibility Model
- AWS Compliance Program

And Many More...

DEVOPES

1. DevOps Essentials

a. Introduction to DevOps

b. Processes

i. Build Automation

ii. Continuous Integration

iii. Continuous Deployment

iv. Continuous Delivery

c. Tools

i. Jenkins

ii. VSTS

iii. Docker

2. Git, Github and Gitlab

a. Installation and Configuration

i. Installing Git

ii. Basic Configuration

b. Git Basics

i. Empty Repositories

ii. Git Basics

iii. Git Ignore

c. Cloning

i. Cloning: Local Repositories

ii. Cloning: Remote Repositories

d. Tagging, Branching, and Merging

i. Tags

ii. Branches

iii. Merging

e. Logging and Repository Auditing

i. Git Log

f. Gitlab: Installation, Configuration, and Use

i. Prerequisites

ii. Download, Install and Configure

iii. Architecture

iv. User Administration and Secure Access

g. Working with Github

i. Introduction to Github

ii. Secure Communication

iii. Working with Github

3. JavaScript Programming

a. Introduction

i. What's a Programming Languages

b. JavaScript Basics

i. Hello World!
ii. Variables
iii. Types of Variables
iv. Basic Math
v. Conditionals
vi. Conditionals Continued
vii. Iterators
viii. Arrays and Hashes
ix. Strings
x. While Loop
xi. For Loop
xii. Loop Control

4. VSTS (Visual Studio Team Service)

a) Introduction to VSTS
b) Agents
c) Artifacts
d) Organization

e) Pipelines
f) Test Plans.
g) Build Pipeline
h) Deployment Pipeline.

5. Docker

a. Learning the Basics of Docker

i. Introduction to Docker
ii. Containers Vs. Virtual Machines
iii. Docker Architecture
iv. The Docker Hub
v. Docker Installation
vi. Creating Our First Image
vii. Working With Multiple Images
viii. Packaging A Customized Container
ix. Running Container Commands With Docker
x. Exposing Our Container With Port Redirects

b. Docker Builds and Deployments

i. Container Snapshots
ii. Attach to a Running Container

iii. Removing Images
iv. Directory Structure
v. Services That Run on Start-up
vi. Dockerfile: Tying It Together
vii. Pushing Images to Docker Hub
viii. Adding External Content
ix. Image Volume Management
x. Advanced Container Network Management

c. Docker Internals

i. Interactive Shell Control
ii. Previous Container Management
iii. Container Routing
iv. Sharing Container Resources
v. Committing a Running Container (Snapshot Images)
vi. Container Linking and Communication
vii. Taking Control of Ports
viii. Five Useful Docker CLI Commands
ix. More Useful Docker CLI Commands
x. Optimizing Our Dockerfile Builds

6. Agile Methodologies (SCRUM)

a. The Emergence of Scrum
b. Distribution of methodologies
c. Project Management Today
d. Project Management – new wave
e. Scrum from the clouds
f. The Essence of Scrum
g. The Basics of Scrum
h. Why Has Scrum Become So Popular?
i. Scrum Challenges
j. The Traditional Approach
k. Agile: Iterative Incremental Development
l. How Much Written Documentation?
m. Format for Product Backlog Items
n. Problem of Changing Priorities
o. Handling Changing Priorities
p. Estimation and Release Planning in Scrum
q. Product Backlog Estimation
r. Relative Size
s. Planning Poker
t. Scrum Release Cycle

And Many More....

WHO CAN LEARN ?

- Anyone who wants to build a career in IT field.
- Entrepreneurs who want to grow their business.
- Students who are currently in college or university

CAREER OPPORTUNITIES

- Software Security Advisor
- QA Analyst
- Sr. QA Analyst
- QA Team Coordinator
- Test Manager
- Selenium Automation Engineer
- Selenium Test Analyst
- Software Development Test Engineer

And Many More....

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PROCESS FOR SUCCESS

GET PLACED

GET TRAINED

ENROLL

FACILITIES OFFERED

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- 100% Placement Guarantee
- Interview Preparation
- Global Certification
- Fully functional labs
- Online / OfflineTraining
- Study Materials
- Expert level industry recognized training

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Get Certified

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