MAVEN, GIT AND GITHUB, JENKINS, NODEJS COURSE CONTENTS

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Day 1

Maven Training Course Overview

1. Introduction about MAVEN
2. Maven Installation
3. MAVEN Terminology
   - Dependency
   - Central repository
   - ArcheType
   - ArtifectId
   - GroupId
   - Package
   - Version
   - Archive

4. How to build sample standalone application using MAVEN
5. What is dependency
6. How to configure application dependencies using MAVEN
7. How to build sample web application using MAVEN
8. How to add tomcat plugins to MAVEN
9. How to configure custom repositories

GIT AND GIT HUB

Introduction
- What is a Version Control System (VCS)?
- Distributed vs Non-distributed VCS
- What is Git and where did it come from?
- Alternatives to Git
- Cloud-based solutions (Github, Gitlab, BitBucket etc)

Installation and Configuration
- Obtaining Git
- Installing Git
- Common configuration options
- GUI tools

Key Terminology

- ？ Clone
- ？ Working Tree
- ？ Checkout
- ？ Staging area
- ？ Add
- ？ Commit
- ？ Push
- ？ Pull
- ？ Stash

Day 2

Git - Local Repository Actions
- ？ Creating a repository (git init)
- ？ Checking status (git status)
- ？ Adding files to a repository (git add)
- ？ Committing files (git commit)
- ？ Removing staged files (git reset)
- ？ Removing committed files (git rm)
- ？ Checking logs (git log)

Git - Remote Repository Actions
- ？ Creating a remote repository (git init)
- ？ Cloning repositories (git clone)
- ？ Updating the remote repository from the local (git push)
- ？ Updating the local repository from the remote (git pull)

Tagging in Git
- ？ What are Git Tags?
- ？ Listing tags
- ？ Lightweight tags
- ？ Displaying tag details (tag show)
- ？ Annotated tags
- ？ Checking out tags
- ？ Pushing tags
- ？ Pulling tags

Branching in Git
- ？ What is a branch
- ？ A note about andlt;HEADandgt;
- ？ Listing branches
- ？ Create new branch
- ？ Checkout branch

☐ Pushing branches
☐ Pulling branches

Merging in Git
☐ Fetching Changes (git fetch)
☐ Rebasing (git rebase)
☐ Git Pull

Git Workflows
☐ Different ways of using Git
☐ Centralised
☐ Feature Branch
☐ Gitflow Workflow
☐ Forking Workflow
Top-Grade Curricular to get Top-Notch

Git - Stashing Changes
☐ What is Stashing?
☐ Using Stash
☐ Creating a branch from a Stash

Advanced Repository Actions
☐ Removing untracked files (git clean)
☐ Remove staged changes (git reset)
☐ Revert a commit (git revert)
☐ Checkout a previous commit (git checkout)

Advanced Branching and Merging
☐ Deleting a Branch
☐ Fast forward merge
☐ Three way merge
☐ Resolving merge conflicts
☐ Cherry-Picking (git cherry-pick)

Advanced Git Configuration
☐ Aliases
☐ Submodules ☐ Patches
☐ Hooks

JENKINS

Topics:
- Introduction to Continuous Integration(CI)
- Advantages of Continuous Integration
- Introduction to Jenkins
- Applications of Jenkins
- Getting Started with Jenkins
- Jenkins Architecture and terms of jenkins
- Overview of Jenkins UI
- Configuring Jenkins: Configure System, Environment Variables, URL
- Creating a Jenkins job
- Configuring a Jenkins job

- Jenkins Plugins
- Common Plugins
- Global tool Configuration
- Jenkins Integration -Java, Git, Maven
- Jenkins Build
- Jenkins Workspace

Day 3

- Creating a Freestyle Build Job
- Build Triggers and Build Steps
- Pre-Build and Post-Build Actions
- Running New Build Job
- Parameterized Builds and Distributed Builds
- Distributed Jenkins Build
- Configuring a Distributed Build
- Setting Up Email Notifications
- SMTP Plugins and Configurations
- Securing Jenkins

- Code Coverage in Jenkins
- Looking for Foul Code through Code Coverage
- Activation and Use of PMD Jenkins plugin
- Activation and Use of Findbugs Jenkins plugin
- Validation in Jenkins
- Reporting in Jenkins
- Jenkins with Script Builds

- Jenkins with Maven Script Build System
- Jenkins with Shell Script Build System

- Managing Jenkins
- Gathering System Information
- User Management
- Monitoring Jenkins
- Reporting and Code Analysis Plugin
- Server Maintenance
- Backup Plugin
- Managing Plugins
- Install, Uninstall and Update Plugin
- Remote Testing in Jenkins

- Deployment Overview
- Install and Configure Tomcat
- Jenkins Build Pipeline
- Parallel Jenkins build
- Archive generated Artifacts
- Jenkins Integrations
- Scaling Jenkins

Day 4

- Pipeline
- Importance of Jenkins Pipeline
- Pipeline Concepts
- Pipeline Syntax
- Running Pipelines
- Pipeline Plugins
- Plugins Responsible for Jenkins Pipeline
- Enable and Disable Jenkins Plugin
- Install Plugins

NODE JS

Module 1: Understanding Node environment
* Extending JavaScripT
* The Process Object

Module 2: Understanding Asynchronous Event Driven Programming

* Broadcasting Events
* Listening for Events
* Timers
* Understanding the Event Loop
* Callbacks and errors

Module 3: Streaming Data Across Node And clients
* Exporting Steams
* Creating and HTTP Server
* The Request objects
* Working with Headers
* Handling Post Data

Module 4: Access the File System
* Directories & iterating overs files and folders
* Reading from File
* Writing to a File

Day 5

Module 5: Using Express
* Installing Express and Making it Easier to Build Web Server
* Routes
* Static File and Middleware
* JSON

Module 6: Databases
* Relational Database and SQL
* Node & MYSQL
* NoSQL and Documents
* MongoDB and Mongoose
* CRUD operation using MongoDB

Module 7: Working with MySQL
* CRUD Operation using MYSQL

Module 8: Connecting Node with Angular
* Installation of Angular
* Components
* Services
* Template Form
* Event Handling