1. Linux 2.git 3.github 4.chef 5. Ansible

6. docker 7.kubernetes 8.ci-cd 9.aws 10.agail/Jenkins/selenium/shell scripting

[DevOps Source Code Management — Git](https://www.simplilearn.com/tutorials/devops-tutorial/devops-interview-questions#devops_interview_questions_for_source_code_management__git)

[DevOps Continuous Integration - Jenkins](https://www.simplilearn.com/tutorials/devops-tutorial/devops-interview-questions#devops_interview_questions_for_continuous_integration__jenkins)

[DevOps Continuous Testing - Selenium](https://www.simplilearn.com/tutorials/devops-tutorial/devops-interview-questions#devops_interview_questions_for_continuous_testing__selenium)

[DevOps Configuration Management tool— Chef, Puppet, Ansible](https://www.simplilearn.com/tutorials/devops-tutorial/devops-interview-questions#devops_interview_questions_for_configuration_management__chef_puppet_ansible)

What is DevOps?

Ans:-DevOps is a collaboration between the development and operation team that enable continuous delivery of application and service to end user.

### How do DevOps tools work together?

A generic logical flow is shown below that automates it to ensure smooth delivery. Organizations may follow different flows depending on their needs.

* Developers create code, and a version control system, such as Git, manages the source code.
* Any modifications made to this code are committed to the Git repository by developers.
* Jenkins extracts the code from the repository and builds it using software such as Ant or Maven using the Git plugin.
* Puppet is used to deploy and configure test environments, and Jenkins releases this code to the test environment so that testing can be conducted using Selenium tools.
* Jenkins deploys the code once it has been tested on the production server (even the production servers are managed by resources like a puppet).
* Nagios, for example, continuously monitors it after deployment.
* Using Docker containers, we can test the build features in a controlled environment.

### **How is DevOps different from agile methodology?**

[DevOps is a culture](https://www.simplilearn.com/tutorials/devops-tutorial/what-is-devops) that allows the development and the operations team to work together. This results in [continuous development](https://www.simplilearn.com/tutorials/devops-tutorial/continuous-delivery-and-continuous-deployment), testing, integration, deployment, and monitoring of the software throughout the lifecycle.

Agile is a [software development methodology](https://www.simplilearn.com/tutorials/agile-scrum-tutorial/what-is-agile) that focuses on iterative, incremental, small, and rapid releases of software, along with customer feedback. It addresses gaps and conflicts between the customer and developers.

DevOps addresses gaps and conflicts between the Developers and IT Operations.

### **4. What are the different phases in DevOps?**

Ans:Plan-code-build-test-intigrate-deploy-operate-moniter

### **How to automate Testing in the DevOps lifecycle?**

Developers are obliged to commit all source code changes to a shared DevOps repository.

Every time a change is made in the code, Jenkins-like Continuous Integration tools will grab it from this common repository and deploy it for Continuous Testing, which is done by tools like Selenium.

### **Why is Continuous Testing important for DevOps?**

Any modification to the code may be tested immediately with Continuous Testing. This prevents concerns like quality issues and release delays that might occur whenever big-bang testing is delayed until the end of the cycle. In this way, Continuous Testing allows for high-quality and more frequent releases.

1.What is linux?

Linux is an [open source](https://zapier.com/blog/what-is-open-source-software/) operating system. It's used to run machines as powerful as supercomputers and as small as experimental wristwatches. It's compatible with a wide range of hardware and software, offering speed, reliability, and efficiency.

**What is a Linux distribution?**

Since Linux is open source, everyone can take a look at the source code, modify it, and distribute it (as long as the code remains open). Lots of individuals and companies wanted to create their own spins on Linux, with their own takes on the user interface and feature set. And that's how distributions (distros, for short) were born.

### **What are the three standard streams under Linux?**

* stdin (Standard Input)
* stdout (Standard Output)
* stderr (Standard Error)
  + what is softlink and hardlink?

**Soft Links:** Soft links are also known as a symbolic link. These are files that generally point to other files. It doesn't include data within the target file and points to other entries anywhere inside the file system. We can use the below command to create the soft links:

**Ln -**s [0g filename][link name]

1. **Hard Links:** Hard links are special files that point to a similar underlying inode. It can be known as an extra name for an old file in Linux OS. We can use the below command to create the hard links:
2. **Ln** [0g filename][link name]

### **What are /etc/hosts and /etc/resolv.conf files in Linux?**

* **/etc/hosts:** This file translates or maps any domain name or hostname to its corresponding IP address.
* **/etc/resolv.conf:** This file configures DNS name servers because it includes the information of the name server, i.e., information of our DNS server. Then, the DNS server resolves the IP address hostname.

### **What is the Shell Script?**

As its name implies, Shell Script is a script mainly written for the shell. The script describes the programming language being used to manage applications.

### **What are the daemons?**

Daemons are also called the background process. They are a long-running program of Linux that executes in the background. They don't have any controlling terminal; hence they execute in the background.

### **What do you mean by LVM, and why it's important?**

**Logical Volume Management,**or**LVM**, is a tool that offers the management of logical volume for the Linux kernel. It's simply being introduced to enable physical storage device management convenient. Also, it features allocating disks, resizing, mirroring, and striping logical volumes.

### **What is the name of the file that's used to mount file systems automatically?**

The fstab file is the file that's used to mount file systems automatically.

### **What are the Process States?**

Ans ;- new/ready ----running----blocked/wait---compeleted/terminated------zombie

### **What are the Process States?**

Ans:1 GUI 2 command line

### **What is the difference between soft and hard mounting points?**

In the soft mount, if the client fails to connect the server, it gives an error report and closes the connection whereas in the hard mount, if the client fails to access the server, the connection hangs; and once the system is up, it again accesses the server

### **What are the basic commands for user management?**

* last,
* chage,
* chsh,
* lsof,
* chown,
* chmod,
* useradd,
* userdel,
* newusers etc.

**2.Git:** Git is a distributed version control system for tracking changes in source code during software development. It is designed for coordinating work among programmers, but it can be used to track changes in any set of files. Its goals include speed, data integrity, and support for distributed, non-linear workflows.

### **Explain the concept of branching in Git.**

Suppose you are working on an application, and you want to add a new feature to the app. You can create a new branch and build the new feature on that branch.

* By default, you always work on the master branch
* The circles on the branch represent various commits made on the branch
* After you are done with all the changes, you can merge it with the master branch

Some of the Basic Git Commands are summarized in the below table -

* git init Used to start a new repository
* git clone <repository path> Used to create a local copy of an existing repository
* git add <file names separated by commas> Used to add one or more files to the staging

area

* git commit -a
* git commit -m “<add commit message>”

**3.GitHub:** GitHub is a web-based Git repository hosting service, which offers all of the distributed revision control and source code management (SCM) functionality of Git as well as adding its own features.

 differences between Git and GitHub:

| S.No. | Git | GitHub |
| --- | --- | --- |
| 1. | Git is a software. | GitHub is a service. |
| 2. | Git is a command-line tool | GitHub is a graphical user interface |
| 3. | Git is installed locally on the system | GitHub is hosted on the web |
| 4. | Git is maintained by linux. | GitHub is maintained by Microsoft. |
| 5. | Git is focused on version control and code sharing. | GitHub is focused on centralized source code hosting. |
| 6. | Git is a version control system to manage source code history. | GitHub is a hosting service for Git repositories. |
| 7. | Git was first released in 2005. | GitHub was launched in 2008. |
| 8. | Git has no user management feature. | GitHub has a built-in user management feature. |
| 9. | Git is open-source licensed. | GitHub includes a free-tier and pay-for-use tier. |
|  | **. Name a few Git commands with their function.**  * Git config - Configure the username and email address * Git add - Add one or more files to the staging area * Git diff - View the changes made to the file * Git init - Initialize an empty Git repository * Git commit - Commit changes to head but not to the remote repository  **12. What are the advantages of using Git?**  * Faster release cycles * Easy team collaboration * Widespread acceptance * Maintains the integrity of source code * [Pull requests](https://www.simplilearn.com/tutorials/git-tutorial/git-pull-request) |  |

### **How can you initialize a repository in Git?**

If you want to initialize an empty repository to a directory in Git, you need to enter the git init command. After this command, a hidden .git folder will appear.

### **What is a Git repository?**

Git repository refers to a place where all the Git files are stored. These files can either be stored on the local repository or on the remote repository.

### **What do you understand by the term ‘Version Control System’?**

A version control system (VCS) records all the changes made to a file or set of data, so a specific version may be called later if needed.

This helps ensure that all team members are working on the latest version of the file

## What Is a Server?

Servers are high-powered computers built to store, process, and manage network data, devices, and systems. Servers are the engines powering organizations by providing network devices and systems (with adequate resources. )  
For businesses, servers offer critical scalability, efficiency, and business continuity capabilities.

4.What is CHEF?

Chef is a configuration management tool written in ruby and erlang language

Chef is an administration tool whatever system admin used t do manually

Now we are automating all those tasks by using the chef .

Configuration management tool turns our code into infrastructure so our code would be repeatable, testable, or versionable

#### **What are a Chef recipe and its uses?**

Answer:Chef recipe is the combination of Chef resources that describes the working configuration and policy. The recipe is ideal for obtaining requirements for configuration of a particular system. The most significant functions of a Chef recipe are as follows:

* You can use Chef Recipe for installing software components.
* Facility for using one recipe for executing other recipes.
* Chef Recipe is also ideal for file management and deployment of apps.

#### **What is the difference between a recipe and cookbook in Chef?**

Answer:Chef recipe is a combination of resources for configuration of a software package. Chef recipe is also ideal for configuring a certain part of the infrastructure. However, a Cookbook is a collection of Chef Recipes. Also, a Chef cookbook contains supporting information that improves the ease of configuration management.

5.what is ansible?

Ansible is an open source IT configuration management, deployment, and orchestration tool. Its aim to provide large productivity gain to a wide variety of automation challenges.

It is developed by Michal dehaan and ansible project began in feb2012.

Ansible available for RHEL-DEBIAN-centOS-Oracle linux.

* Diff between chef and ansible?

Ansible work on the push mechanism and the chef work on the pull mechanism

Ansible is agentless like in chef there is chef-client at the node or on the server.

### How does Ansible work?

Ansible is a combination of multiple pieces working together to become an automation tool. Mainly these are modules, playbooks, and plugins.

* Modules are small codes that will get executed. There are multiple inbuilt modules that serve as a starting point for building tasks.
* Playbooks contain plays which further is a group of tasks. This is the place to define the workflow or the steps needed to complete a process
* Plugins are special kinds of modules that run on the main control machine for logging purposes. There are other types of plugins also.

### What are the features of Ansible?

It has the following features:

* **Agentless** – Unlike puppet or chef there is no software or agent managing the nodes.
* **Python** – Built on top of python which is very easy to learn and write scripts and one of the robust programming languages.
* **SSH**– Passwordless network authentication which makes it more secure and easy to set up.
* **Push architecture** – The core concept is to push multiple small codes to the configure and run the action on client nodes.
* **Setup** – This is very easy to set up with a very low learning curve and any open source so that anyone can get hands-on.
* **Manage Inventory** – Machines’ addresses are stored in a simple text format and we can add different sources of truth to pull the list using plugins such as Openstack, Rackspace, etc.

6. what is docker?

Docker is an open-source centralized platform, designed to create, deploy, update, and run the application. it is written in “go” language. Docker is a tool that performs OS-level virtualization, also known as containerization. Docker was first release in march 2013.

7. what is Kubernetes?

🡪**Kubernetes**, also known as K8s, Kubernetes is an open-source container management tool that automates container Deployment, container scaling & load balancing.

🡪it schedules, runs and manages isolated containers that are running on virtual/physical/

Cloud machines.

🡪all top cloud providers support Kubernetes.

Google developed an internal system called ‘borg’(later named omega) to deploy and

Manage thousands of google applications and services on their cluster.

In 2014, google introduced Kubernetes an open-source platform written in ‘Golang’ and

Later donated to CNCF.(cloud native computing foundation)

**Architecture of Kubernetes :-**

First, we have a cluster. in one cluster there is one or more than one node can be there

The node contains POD. POD is nothing but smallest or automic unit of Kubernetes.

In this POD there are containers in which application microservices are running.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cluster |  | nodes |  | POD |  | container |  | applications  microservices |

Smallest or atomic

unit of

kubernets

features:-

* Orchestration (clustering of any no of containers running on different networks)
* Autoscaling
* Auto healing
* Load balancing
* platform independent (cloud/virtual/physical)
* fault tolerance(node/POD failure)
* rollback (going back to the previous version)
* health monitoring of containers
* batch execution(one time, sequential, parallel)

8. what is CI-CD?

It a methodology and stands for Continuous integration continuous delivery/deployment

Whenever the developer writes the code we integrate all the code of all the developer at the point in time and we build, test, and deliver/deploy to the client this process is called ci-cd.

### 1. What is CI/CD pipeline?

CI/CD is a combination of **continuous integration (CI)** and **continuous delivery** (usually) or continuous deployment in software engineering.

Modern DevOps operations are built on the foundation of continuous integration and continuous delivery, or the CI/CD pipeline. We can automate your software delivery process with a CI/CD pipeline. As part of the pipeline, code is built, tests are run (CI), and a new version of the application is safely deployed (CD). By automating pipelines, manual errors are eliminated, developers are provided with standardized feedback loops, and iterating on products is made more efficient. In DevOps, continuous integration and continuous delivery (CI/CD) are best practices that ensure that code changes are delivered regularly and reliably.

### What are some popular CI/CD tools?

Some popular CI/CD tools are as follows:

* Jenkins
* CircleCI
* Bamboo
* Team City
* Codefresh

9. what is AWS?

* The AWS is **Amazon Web Services**. It is a platform that offers flexible, reliable, scalable, easy-to-use and, cost-effective cloud ...
* AWS **enables us to select……….the operating system, programming language, web application platform, database, and other services we need**. With AWS, we receive a virtual environment that load the software and services our application requires.
* What is AWS example?

AWS is a cloud computing platform provided by Amazon that includes a mixture of

1 infrastructure-as-a-service (IaaS),

2 platform-as-a-service (PaaS) and packaged-

3 software-as-a-service (SaaS) offerings.

* Infrastructure as a service (IaaS) is a type of cloud computing service that offers essential compute, storage, and networking resources on demand.
* Platform as a Service (PaaS) **provides a runtime environment**. It allows programmers to easily create, test, run, and deploy web applications.
* Software as a service (or SaaS) is **a way of delivering applications over the Internet—as a service**. Instead of installing and maintaining software, ...

**The 6 Pillars of the AWS Well-Architected Framework**

1.Operational Excellence. 2.Security. ...3.Reliability. ..4.Performance Efficiency. ...

5. Cost Optimization. ..6.Sustainability

### **What is the role of AWS in DevOps?**

AWS has the following role in DevOps:

* Flexible services - Provides ready-to-use, flexible services without the need to install or set up the software.
* Built for scale - You can manage a single instance or scale to thousands using AWS services.
* Automation - AWS lets you automate tasks and processes, giving you more time to innovate
* Secure - Using AWS Identity and Access Management (IAM), you can set user permissions and policies.
* Large partner ecosystem - AWS supports a large ecosystem of partners that integrate with and extend AWS services.

## Basic Agile Interview Questions

### 1. What are different types of Agile Methodology?

Different types of Agile methods or frameworks widely used in the world for software development and project development are listed below:

* **Scrum:** It is used to establish hypotheses, test them, reflect on the experience, and also make adjustments. It heavily depends on feedback, self-management, small teams, and work broken out into sprints. It relies on incremental development.
* **FDD (Feature-Driven Development):** It generally involves creating software models every two weeks and also needs development and design for each and every model feature. It is basically a lightweight iterative and incremental software development process whose main purpose is to deliver stable and working software on time.

🡪There are several advantages of using the Agile Process as given below:

* Adapt well with changing requirements
* Face-to-face conversation with team members and customers
* Focuses on technical excellence and good design
* Fast and continuous development
* Enables collaboration and interaction between client and project team
* Ensure and promote customer satisfaction
* Faster feedback from customers or end-users
* Quick identification and elimination of errors found in the code
* Division of agile project into sprints or iterations i.e., short and repeatable phases typically 1-4 weeks long
* Quick delivery of products
* Easy to manage with more flexibility

There are several disadvantages of using Agile Process as given below:

* Lack of formal documentation and designing
* Difficult to estimate resource requirement and effort
* Not good for small development projects
* Costly as compared to other development methodologies
* Requires more time and energy from everyone
* Risk of ever-lasting project
* Difficult to scale large projects
* Difficulty in testing and test construction.

### 3. Explain Agile Testing? What are the principles of Agile Testing?

* Agile testing, as the name suggests, is a software testing process where software is tested for any defects, errors, or other issues. It is considered a core part of the development process as it enables testers and developers to work together as a team that in turn improves overall performance. It also helps in ensuring the successful delivery of high-quality products. Testing is usually performed so that testers can identify and resolve the problems early and at every point in the development process.
* Principle :-
* **Continuous Testing:** Testing should be conducted continuously by the Agile team to ensure continuous development progress.
* **Continuous Feedback:** This process generally encourages taking feedback from clients to make sure that the product meets the requirements of the client or customer.
* **Team Work or collective work:** Not only testers but developers, business analysts can also perform software testing or application testing.
* **Clean Code:** Quality of software is maintained as the team tests the software to ensure that the code is clean, simple, and tight. All errors and defects that are found during the testing phase are fixed quickly within the same iteration by the Agile Team.
* **Less Documentation:** This process usually involves the usage of reusable checklists instead of lengthy documentation.
* **Test-Driven:** In other conventional methods, testing is only performed after the implementation but in agile testing, testing is done during the implementation so that errors or any issues can be removed on time.
* **Customer Satisfaction:** During the agile testing process, development progress is being shown to clients or customers so that they can adapt and update their requirements. This is done to ensure customer satisfaction.

Which ability Agile tester should have. Some of them are listed below:

* Positive attitude and solution-oriented
* Focused towards goal
* Excellent communication skills
* Understand and fulfill customer requirements
* Basic knowledge about the Agile process and its principles
* Critical and creative thinking
* Share ideas effectively
* Plan and prioritize work on the basis of requirements
* Cope up with change

### What is Spike and Zero Sprint in Agile?

**Spike:** It generally refers to a too large and complex user story in software development that cannot be estimated until the development team runs a timeboxed investigation. These stories can be used for various activities like research, design, exploration, prototyping, etc. Spikes are usually created to resolve some technical issues and design problems in the project.

**Zero Sprint:** It generally refers to the first step or pre-preparation step that comes just before the first sprint. It includes all activities such as setting a development environment, preparing backlog, etc.

### What do you mean by Daily Stand-Up meeting?

A daily stand-up meeting is a day-to-day meeting among all the members of the agile team. Its main purpose is to know the current progress and performance of every team member that works on Scrum tasks. The meetings take place mostly in the morning and usually involves product owners, developers, and the scrum master.

These meetings usually take place for the following reasons:

* To know what was done yesterday and what is the plan for today.
* To provide a better understanding of goals.
* To make sure that every team member is working toward the same goal.
* To bring problems of team members into focus so that problems can be addressed quickly.
* To bring everyone up to date on the information and help the team to stay organized.

Different project management tools used in Agile are:

* Icescrum
* Rally Software
* Agilent
* Version One
* Agilo
* X-planner

## Advanced Agile Interview Questions

### 14. What is the difference between Agile and Scrum?

**Agile:**It is an approach mainly used for software development. In this methodology, complex projects are broken down into smaller units that are achievable in a specific time frame. It always involves customers in the development process.   
**Scrum:**There are different agile methodologies, and Scrum is one of them. It promotes accountability, function, and teamwork similar to Agile. In simple words, it is an improved way of Agile methodology and shares the same principles and values of Agile with adding some of its own unique features.    
[**Agile vs Scrum**](https://www.interviewbit.com/blog/difference-between-agile-and-scrum/)  
Agile and Scrum, both provide a flawless experience to customers in the software development cycle and share similar methods like collaborative iterations. But still, both of them cannot be substituted for each other. It mainly depends upon the type of project, budget, time, and feasibility to choose any one of them for project development.  There are several differences between them as given below:

| **Agile** | **Scrum** |
| --- | --- |
| It is a methodology that is used for software management and project management. | It is just a form of Agile that fully describes the process and its steps. |
| It emphasizes the incremental and iterative model known as sprints. | It is basically an approach or implementation of agile methodology. |
| It is best suited for projects that usually involve a small team of experts. | It is best suited for projects that require constant handling of changing requirements. |
| It is a long-term process. | It is a slow-term process. |
| It requires simple and straightforward design and execution. | It requires innovation, creating design, and execution. |
| In this, all tasks are handled and managed by the project head. | In this, all tasks and issues are addressed and handled by entire team members. |
| It emphasizes face-to-face communication to achieve desired goals. | It focuses on delivering maximum business value. |
| It is a less rigid method with more flexibility for change. | It is a more rigid method with less flexibility for change. |

### What are the important tools that are mostly used in a Scrum Project?

Tools mostly used in Scrum Projects are:

* Version One
* Sprintster
* Atlassian JIRA
* RTC Jazz, etc.

### What do you mean by Scrum Master? What are the responsibilities of Scrum Master?

Scrum Master, also referred to as servant leaders, is a person who is a master of Scrum i.e., the person who is responsible for managing and facilitating an agile development team and makes sure that the scrum framework is followed. Scrum master is also referred to as coach of the team that helps team members to do and give their best as much as possible.

**Responsibilities of Scrum Master**

* Protect the team from distractions
* Motivate and guide the team to achieve the sprint goal
* Build a self-organized and motivated team
* Increase efficiency and productivity of the team
* Ensures that the team delivers expected value during the sprint
* Ensures that the team follows values, practices, and principles of Scrum
* Eliminate external blockers and manage internal roadblocks

### What are different roles in Scrum?

**Scrum Master:** Scrum Master is basically a team leader or supervisor of a team who is responsible for ensuring that the scrum team executes committed tasks properly.   
**Product Owner:** The product owner is basically a stakeholder of the project who is responsible for managing the product backlog. He is also responsible for defining a vision of what to build for the team.   
**Development Team:** It involves an individual person and each person is responsible for working collectively to complete a particular project. It is the team that is responsible for developing actual product increments and meeting sprint goals.

### What is Scrum? Write its advantages.

Scrum is a lightweight process framework that helps scrum teams to work together and manage product development to deliver products in the shortest time. The product provided by the scrum team in the shortest period is known as a print. Its main aim is to manage tasks within a team-based development environment. It is especially used to manage project development for software products and can also be used in business-related contexts.    
**Advantages of Scrum**

* Releases product quickly to users and customers
* Ensures effective use of time and money and therefore saves cost
* Best suited for fast-moving development projects
* Ability to incorporates changes as they occur

### Q:What is JIRA?

 A software device or an issue tracking product promoted by Atlassian is known as JIRA, generally utilized for bug tracking, issue tracking and project management; it is totally based on these three features.

### Q: Why use JIRA software?

The reason behind using JIRA is

* Upfront and fair licensing policy
* Features that is not available elsewhere
* Get the latest update on the progress of projects
* It runs anywhere and recognized with many famous companies
* Easily extensible and customizable

### Q:Is it possible to access JIRA cloud site via a mobile device?

Yes, it is possible to access JIRA cloud site via a mobile device. You have to use the URL of the JIRA cloud site in your mobile web browser.

### Q: What is Cloning an Issue?

Cloning as issue allows you to create a duplicate of the original issue so that many employees can work on a single issue within a single project. The clone issue can be connected to the original issue.  A clone issue holds following the information

* Summary
* Description Assignee
* Environment Priority
* Issue Type Security
* Reporter Components, etc.

. Enlist report types generated by JIRA?

when required for analyzing issues:

1 average age report 2 created vs resolved issue report

3pie chart report

reports generated for Scrum projects:

1 2control chart 2 sprint report 3 epic report

### Q:When should one use Maven?

The Maven Build Tool can be used in the following conditions:

* When the project has a large number of dependencies. Then, using Maven, you can easily manage those dependencies.
* When the version of a dependency changes frequently. To update dependencies, simply update the version ID in the pom file.
* Maven makes it simple to handle continuous builds, integration, and testing.
* When you need a quick way to generate documentation from source code, this is the tool you use. It helps in compiling source code, and then packaging it into JAR or ZIP files.

### How does Maven work?

Maven works in three steps:

* Reading the pom.xml file is the first step.
* The dependencies mentioned in pom.xml are then downloaded from the central repository into the local repository.
* Finally, it builds and generates a report based on the requirements, as well as handles life cycles, phases, goals, plugins, and other tasks.

### List a few differences between Maven and ANT.

| **Ant** | **Maven** |
| --- | --- |
| Because Ant lacks formal conventions, we must include project structure information in the build.xml file. | Maven has a convention for storing source code, compiled code, and so forth. As a result, we don't need to provide project structure information in the pom.xml file. |
| Ant is procedural, so you'll need to write code to tell it what to do and when to do it. You must maintain order. | Maven has a convention for storing source code, compiled code, and so forth. As a result, we don't need to provide project structure information in the pom.xml file. |
| Ant has no life cycle. | Maven has a life cycle. |
| Ant is a toolbox. | Maven is a framework. |
| Ant is primarily a build tool. | Maven is primarily a project management tool. |
| The ant scripts can not be reused. | The maven plugins can be reused. |

### Q:What elements are used for creating a pom.xml file?

* **project**- The root element of the pom.xml file is the project.
* **modelVersion**- It identifies which version of the POM model you're working with. For Maven 2 and Maven 3, use version 4.0.0.
* **groupId**- groupId is the project group's identifier. It is unique, and you will most likely use a group ID that is similar to the project's root Java package name.
* **artifactId**- It is used for naming the project you're working on.
* **version**- The version number of the project is contained in the version element. If your project has been released in multiple versions, it is helpful to list the versions.

Other Pom.xml File Elements

* **dependencies**- This element is used to establish a project's dependency list.
* **dependency**- dependency is used inside the dependencies tag to define a dependency. The groupId, artifactId, and version of each dependency are listed.
* **name**- This element is used to give our Maven project a name.
* **scope**- This element is used to specify the scope of this maven project, which can include compile, runtime, test, among other things.
* **packaging**- The packaging element is used to package our project into a JAR, WAR, and other output formats.

### Q: In Maven, what do you mean by Clean, Default, and Site?

The three built-in build life cycles are:

* **Clean**: The clean lifecycle is in charge of project cleaning.
* **Default**: The project deployment is handled by the default lifecycle.
* **Site**: The creation of the project's site documentation is referred to as the site lifecycle.

### 13. In Maven, what is a snapshot?

A snapshot is a specific version of a project that shows the most recent development copy of the project being worked on. Maven always checks out a SNAPSHOT of the project in the remote repository for each build.

As a result, anytime Maven discovers a newer SNAPSHOT of the project, it downloads and replaces the project's older .jar file in the local repository.

### What exactly is MOJO?

Every Maven plain Old Java Object (MOJO) is an executable goal, and a plugin pertains to the distribution of these MOJOs. MOJO allows Maven to add functionalities that it doesn't already have. In Maven, a MOJO is a single unit of the task.

## What is Selenium?

**Selenium** is a open-source automated testing framework used to validate web applications across different browsers and platforms. You can use multiple programming languages like Java, C#, Python, etc to create Selenium Test Scripts. Testing done using the Selenium testing tool is usually referred to as **Selenium Testing**.

### **What is Selenese? How is it classified?**

Selenese is the set of Selenium commands which are used to test your web application. The tester can test the broken links, the existence of some object on the UI, Ajax functionality, alerts, window, list options, and a lot more using Selenese.

Action: Commands which interact directly with the application

Accessors: Allow the user to store certain values to a user-defined variable

Assertions: Verifies the current state of the application with an expected state

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