**Challenge 2:**

**Given you are asked to propose an Automated Test Setup for a iOS and Android Native App Project.**

Please write a short(!) whitepaper in which you explain to the customer which tool you would recommend and why. Also describe your ideal CI Pipeline to ensure the customer gets the best possible quality.

**Recommended Tool:** Appium

Appium is an open-source test automation framework for native, hybrid, and mobile web apps. It drives iOS and Android apps using the WebDriver protocol. Appium is a popular choice for mobile test automation because it is flexible, easy to use, and supports a wide range of devices and operating systems.

**Benefits of Appium:**

•**Cross-platform support:** Appium can be used to automate tests for both iOS and Android apps, which can save time and resources.

•**Easy to use:** Appium is easy to learn and use, even for testers with no prior experience in mobile test automation.

•**Flexible:** Appium supports a variety of programming languages and testing frameworks, which gives testers the flexibility to choose the tools that best meet their needs.

•**Community support:** Appium has a large and active community of users and contributors, which means that there is a wealth of resources available to help testers get started and troubleshoot any problems they encounter.

**CI Pipeline Solution: Jenkins**

Jenkins is a popular open-source CI/CD tool that can be used to automate the CI/CD pipeline for mobile test automation. Jenkins provides a number of features that make it well-suited for this purpose, such as:

•**Pipeline support:** Jenkins supports pipelines, which allow you to automate a series of tasks in a sequence. This makes it easy to automate the test execution process, including checking out the code, building the app, deploying the app to test devices, executing the test cases, and reporting the test results.

•**Plugin support:** Jenkins has a wide range of plugins available, which can be used to extend its functionality. This includes plugins for Appium, test reporting, and other tasks related to mobile test automation.

**Example CI Pipeline**

The following is an example of a CI pipeline for mobile test automation using Jenkins and the Appium TestNG Framework:

1. **Checkout code:** The first step in the pipeline is to check out the code from the source code repository. This can be done using the Jenkins Git plugin.
2. **Build app:** The next step is to build the app. This can be done using the Jenkins Maven plugin or the Jenkins Gradle plugin, depending on the build tool that is being used.
3. **Deploy app:** The next step is to deploy the app to the test devices. This can be done using a cloud-based mobile device testing service, or by using physical test devices. The Jenkins Appium plugin can be used to automate this step.
4. **Execute tests:** The next step is to execute the test cases. This can be done using the Jenkins TestNG plugin.
5. **Report results:** The final step in the pipeline is to report the test results. This can be done using the Jenkins JUnit plugin or the Jenkins HTML Publisher plugin.