**Installation Notes**

In this document we have explained how to run our project in IntelliJ IDEA. So, once you have downloaded the .zip file or .tar file follow the below steps:-

As we have written our code in **Java** you need JDK (JRE and development tools)

1. Unzip and save all files in an empty folder, name it as “Strands\_Team3”.
2. Download and install IntelliJ IDEA community edition from the below link:-

**Windows users**: <https://www.jetbrains.com/idea/download/#section=windows>

**Mac users**: <https://www.jetbrains.com/idea/download/#section=mac>

**Linux users:** <https://www.jetbrains.com/idea/download/#section=linux>

1. Now, before you run IntelliJ IDEA, make sure you have an updated JDK installed in your system and you have set the PATH in the system environment variables.
2. After, you are done, Open IntelliJ IDEA and follow the guidelines shown in wizard:-
3. Open Source\_code folder
4. Import the folder (Strands), select Maven Project.
5. Browse and paste the location of your latest JDK.
6. Click next and then finish.
7. Wait for the project to be loaded and then on the right tool bar, click on Maven Projects 🡪 Life Cycle 🡪 Clean and then click on Install. This step will run the maven dependencies and install the necessary jar files required to run our project.

( Note :- make sure your internet connection is turned on)

1. Now, you must run 5 Raft Nodes (*ServerImplState.java*), 3 Data centers Servers (*DataCenterServer.java*), 2 Name Servers(*NameServer.java*) and a client side program “*DFSMain.java”*.
2. But, before you run there are few more steps: make sure you have a switch, ethernet cables, turned off your Wi-Fi and disabled firewall.
3. Now, you must decide how you will run these 10 processes? In a single system with the same static IP for all of them or different systems with different static IPs. For this, you can go to the **conf directory** and make necessary changes in the conf files. ( Note: We recommend running in 4 different systems to experience robustness and low latency).
4. Once you are done with the above step, For the systems which are running *DataCenterServer.java,* you must update the file location(this will be your data center which will store all files) according to your system.
5. Then in *ServerImplState.java* update the IP value according to the static IP you have assigned to that system. If you face any issues with static IP, follow our report and read section 5.2 (Problems).
6. Now, you are ready to start, run all raft nodes in all systems and start leader election. Parallelly, you can start running name server and data center nodes.
7. The server is on, now you can run *DFSMain.java* and act as a client. Follow the steps displayed in the terminal and perform the requests to get the response in milli seconds.
8. In order to run the test cases, you will have to install an additional plugin i.e. TestNG by going to Settings🡪 Plugins.