**Hadoop : Installation :**

1. Download the tar file for Hadoop from the given url.
2. Create a new Folder inside Desktop , name the Folder as your USN <1ms18cs017>.
3. Move the Downloaded Hadoop File to USN <1ms19cs0\*\*> Folder.
4. Right Click on that File and Extract inside the USN <1ms19cs0\*\*> Folder.
5. Open terminal and navigate to the extracted folder
6. Ensure Java is installed in the system by checking java version
7. Create a new shell script Bash file
8. Copy the following bash code into Bash file
9. Execute the bash file using the command
10. Verify the installation of Java by running the Java Home and Class Path
11. Verify Hadoop installation by running hadoop
12. Installation done.

Execution :

1. Create driver, mapper and reducer java files inside the extracted folder.
2. Compile all java files.
3. Set driver class in manifest.
4. Create an executable jar file.
5. Run the jar file
6. Display the output

**Spark: Installation:**

1. Verify if Java is already installed
2. Download the latest release of Apache spark from the given url.
3. Create a new folder with your USN as name [Eg: <1ms19cs0\*\*>] and extract the downloaded file there.
4. Open Terminal and navigate to the extracted folder.
5. Create a new Bash file
6. Copy the bash code into the Bash file
7. Run the Bash file
8. Verify the path variables by running the commands for Java Home and Path
9. Verify installation by executing spark shell

Execution :

1. Create the program files with .py extension.
2. Execute the python files with spark-submit <filename.py> <input file> output
3. To display the output:

**Pig : Installation :**

1. Download the latest version of pig from the given url.
2. Create a new folder with your USN as name [Eg: <1ms19cs0\*\*>] and extract the downloaded Pig file into it.
3. Open the terminal and navigate to the extracted folder.
4. Create a new bash file.
5. Run the Bash file
6. Ensure that Hadoop is installed and present in the PATH
7. Check if pig is installed by running pig version.

Execution :

1. Create the pig file with the .pig extension. [Eg: file1.pig]
2. Execute the pig files using pig <filename>.pig.