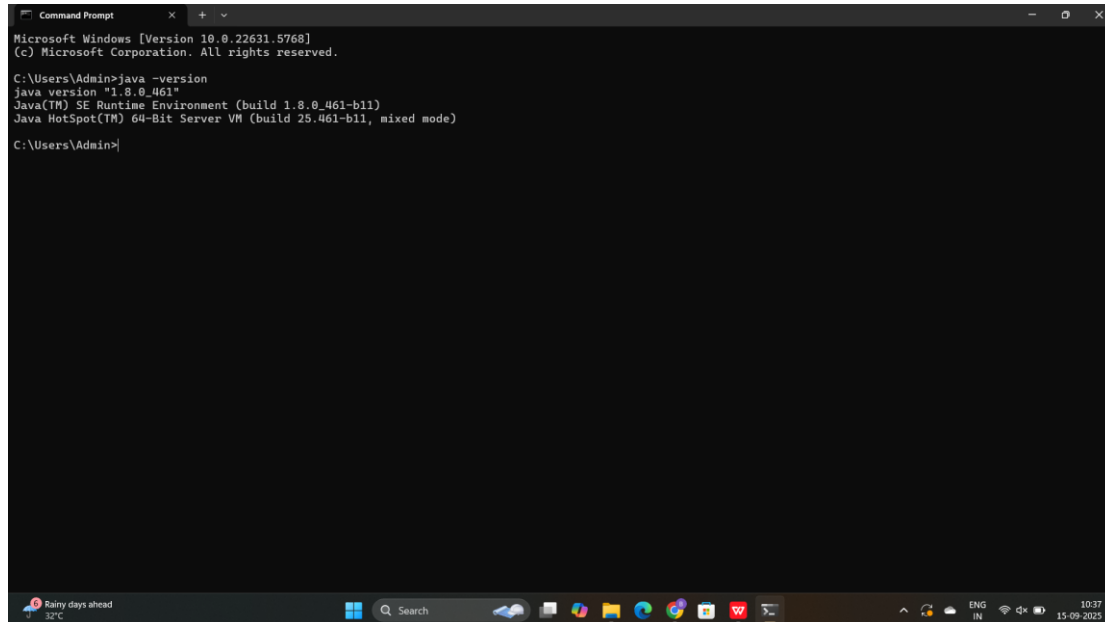


# Experiment 1\_Hadoop Installation

## Step - 1

Java has been successfully Installed in System in C Drive.



A screenshot of a Windows Command Prompt window. The title bar reads 'Command Prompt'. The text inside shows the command 'C:\Users\Admin>java -version' and its output: 'java version "1.8.0\_461"', 'Java(TM) SE Runtime Environment (build 1.8.0\_461-b11)', and 'Java HotSpot(TM) 64-Bit Server VM (build 25.461-b11, mixed mode)'. The prompt is currently at 'C:\Users\Admin>'. The taskbar at the bottom shows the date and time as 10:37 on 15-09-2025.

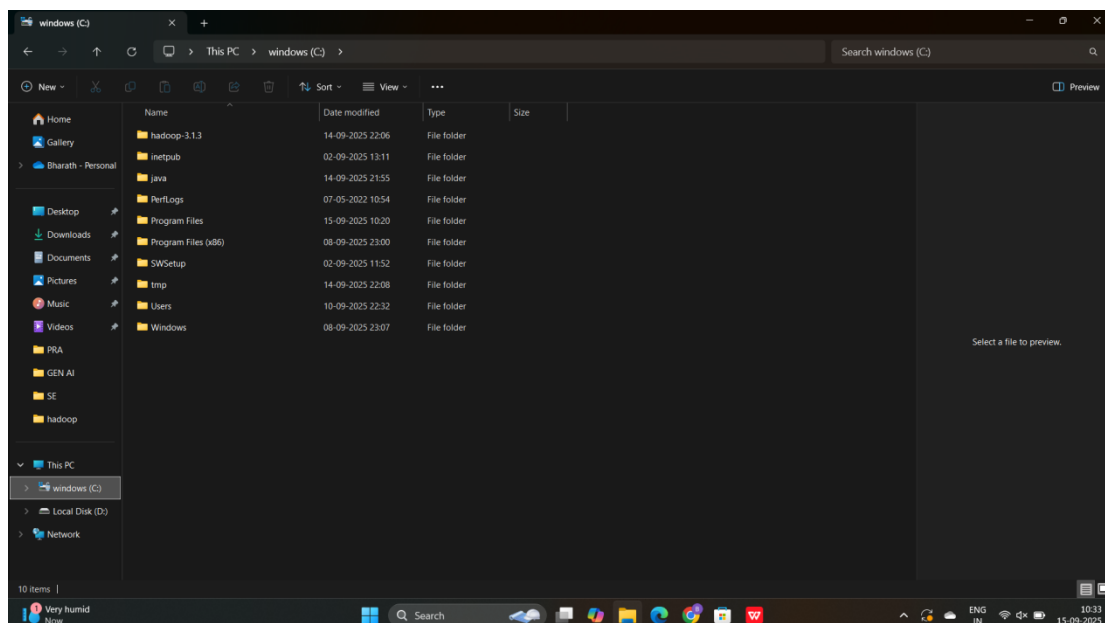
```
Microsoft Windows [Version 10.0.22631.5768]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Admin>java -version
java version "1.8.0_461"
Java(TM) SE Runtime Environment (build 1.8.0_461-b11)
Java HotSpot(TM) 64-Bit Server VM (build 25.461-b11, mixed mode)

C:\Users\Admin>
```

## Step - 2

Hadoop has been Installed Successfully in System in C Drive.



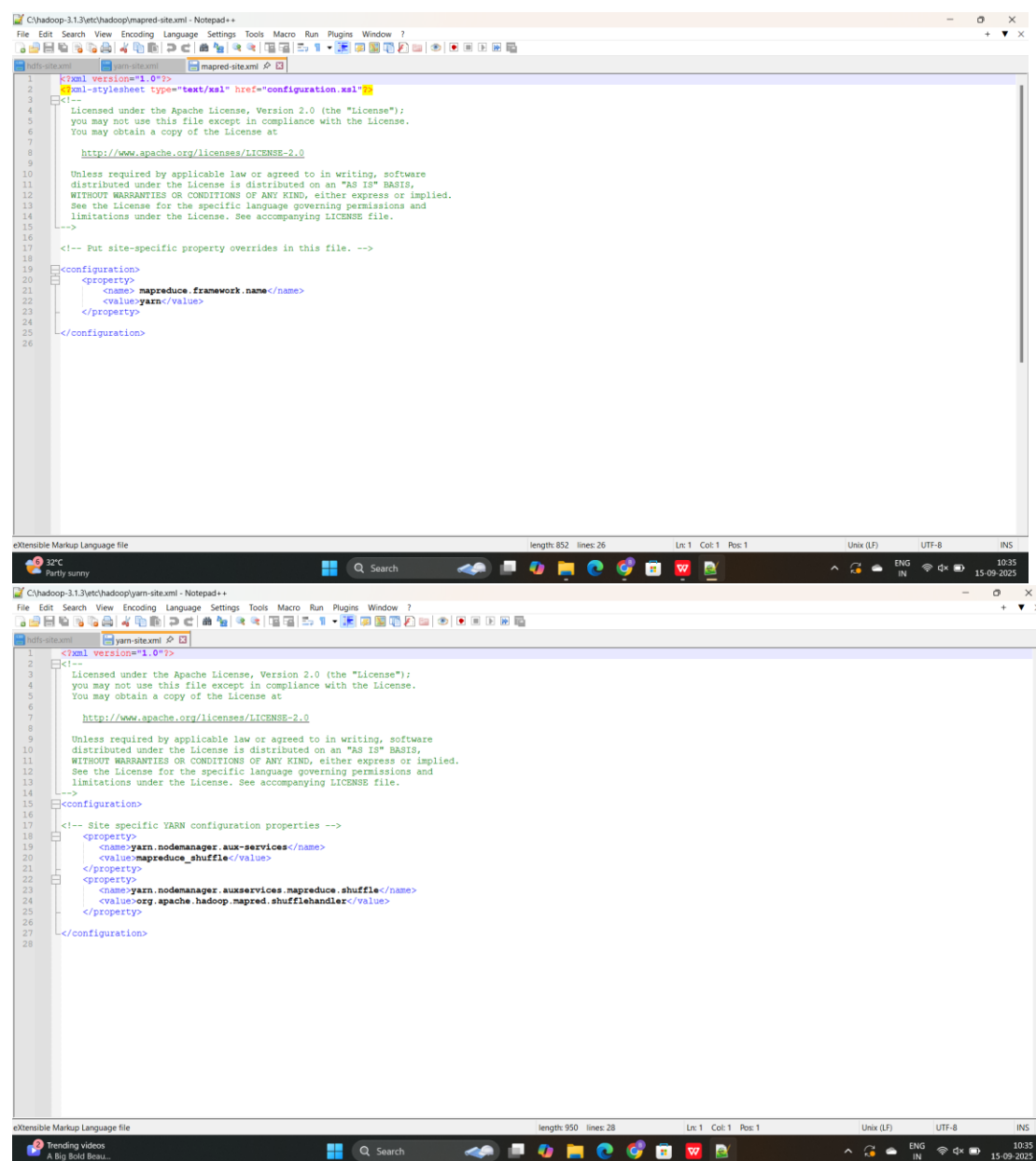
## Step - 3

Created environmental Variable and path for both java and hadoop

## Step - 4

### Edit Configurations:

We need to edit some files located in the hadoop directory of the etc folder where we installed hadoop. (C:\hadoop\etc\hadoop)



The image displays two screenshots of Notepad++ editors showing the configuration files for Hadoop. The top screenshot shows the `mapred-site.xml` file, which is a template for MapReduce configuration. It includes a license header and a configuration section with a single property: `mapreduce.framework.name` set to `yarn`. The bottom screenshot shows the `yarn-site.xml` file, which is a template for YARN configuration. It includes a license header and a configuration section with three properties: `yarn.nodemanager.aux-services` set to `mapreduce_shuffle`, `yarn.nodemanager.auxservices.mapreduce.shuffle` set to `org.apache.hadoop.mapred.shufflehandler`, and `org.apache.hadoop.mapred.shufflehandler` set to `org.apache.hadoop.mapred.shufflehandler`.

```
1 <?xml version="1.0"?>
2 <!--
3 Licensed under the Apache License, Version 2.0 (the "License");
4 you may not use this file except in compliance with the License.
5 You may obtain a copy of the License at
6
7 http://www.apache.org/licenses/LICENSE-2.0
8
9 Unless required by applicable law or agreed to in writing, software
10 distributed under the License is distributed on an "AS IS" BASIS,
11 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
12 See the License for the specific language governing permissions and
13 limitations under the License. See accompanying LICENSE file.
14 -->
15
16 <!-- Put site-specific property overrides in this file. -->
17
18 <configuration>
19   <property>
20     <name>mapreduce.framework.name</name>
21     <value>yarn</value>
22   </property>
23 </configuration>
```

```
1 <?xml version="1.0"?>
2 <!--
3 Licensed under the Apache License, Version 2.0 (the "License");
4 you may not use this file except in compliance with the License.
5 You may obtain a copy of the License at
6
7 http://www.apache.org/licenses/LICENSE-2.0
8
9 Unless required by applicable law or agreed to in writing, software
10 distributed under the License is distributed on an "AS IS" BASIS,
11 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
12 See the License for the specific language governing permissions and
13 limitations under the License. See accompanying LICENSE file.
14 -->
15
16 <!-- Site specific YARN configuration properties -->
17
18 <configuration>
19   <property>
20     <name>yarn.nodemanager.aux-services</name>
21     <value>mapreduce_shuffle</value>
22   </property>
23   <property>
24     <name>yarn.nodemanager.auxservices.mapreduce.shuffle</name>
25     <value>org.apache.hadoop.mapred.shufflehandler</value>
26   </property>
27 </configuration>
```

```
C:\hadoop-3.1.3\etc\hadoop\hdfs-site.xml - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
hdfs-site.xml
1 <?xml version="1.0" encoding="UTF-8"?>
2 <!--
3 <!--
4 Licensed under the Apache License, Version 2.0 (the "License");
5 you may not use this file except in compliance with the License.
6 You may obtain a copy of the License at
7
8 http://www.apache.org/licenses/LICENSE-2.0
9
10 Unless required by applicable law or agreed to in writing, software
11 distributed under the License is distributed on an "AS IS" BASIS,
12 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
13 See the License for the specific language governing permissions and
14 limitations under the License. See accompanying LICENSE file.
15 -->
16
17 <!-- Put site-specific property overrides in this file. -->
18
19 <configuration>
20
21 <property>
22 <name>dfs.replication</name>
23 <value>1</value>
24 </property>
25 <property>
26 <name>dfs.namenode.name.dir</name>
27 <value>C:\hadoop-3.1.3\data\namenode</value>
28 </property>
29 <property>
30 <name>dfs.datanode.name.dir</name>
31 <value>C:\hadoop-3.1.3\data\datanode</value>
32 </property>
33
34 </configuration>
35
36
```

Extensible Markup Language file length: 1,083 lines: 36 Ln: 1 Col: 1 Pos: 1 Unix (LF) UTF-8 INS

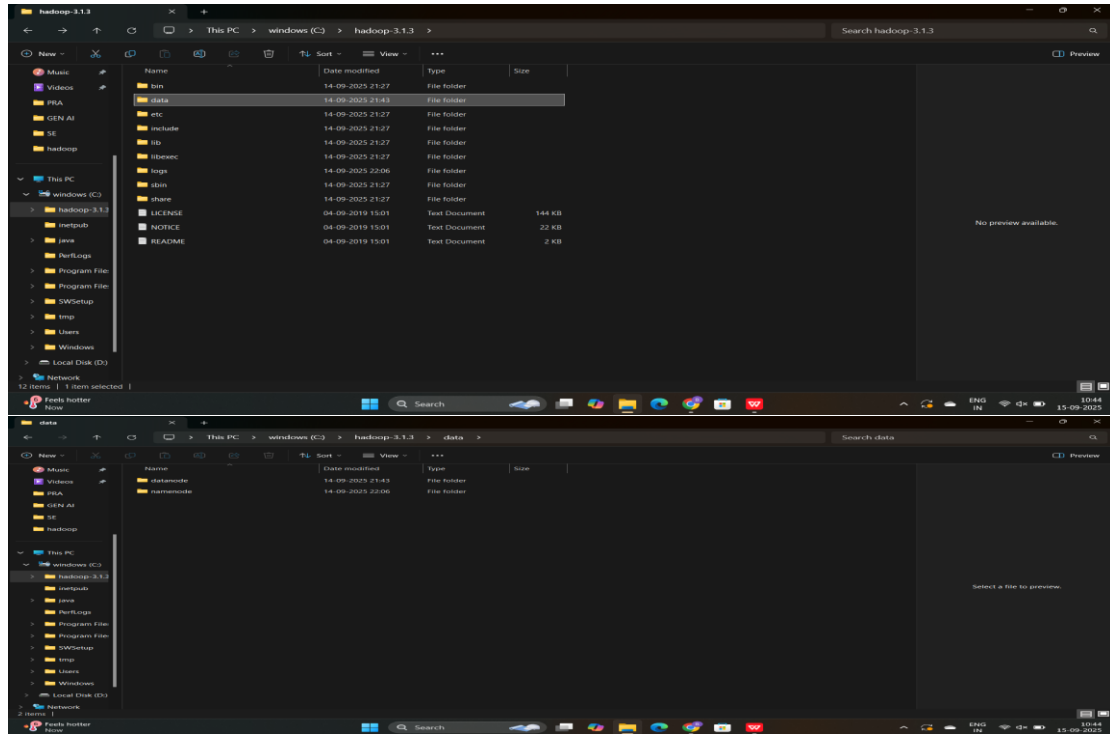
```
C:\hadoop-3.1.3\etc\hadoop\hadoop-env.cmd - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
hadoop-env.cmd
1 @echo off
2
3 rem Licensed to the Apache Software Foundation (ASF) under one or more
4 rem contributor license agreements. See the NOTICE file distributed with
5 rem this work for additional information regarding copyright ownership.
6 rem The ASF licenses this file to You under the Apache License, Version 2.0
7 rem (the "License"); you may not use this file except in compliance with
8 rem the License. You may obtain a copy of the License at
9
10 http://www.apache.org/licenses/LICENSE-2.0
11
12 rem Unless required by applicable law or agreed to in writing, software
13 rem distributed under the License is distributed on an "AS IS" BASIS,
14 rem WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
15 rem See the License for the specific language governing permissions and
16 rem limitations under the License.
17
18 rem Set Hadoop-specific environment variables here.
19
20 rem The only required environment variable is JAVA_HOME. All others are
21 rem optional. When running a distributed configuration it is best to
22 rem set JAVA_HOME in this file, so that it is correctly defined on
23 rem remote nodes.
24
25 rem The java implementation to use. Required.
26 set JAVA_HOME=C:\java\jdk-1.8
27 rem The jsvc implementation to use. Jsvc is required to run secure datanodes.
28 rem set JSVC_HOME=%JSVC_HOME%
29
30 rem set HADOOP_CONF_DIR=
31
32 rem Extra Java CLASSPATH elements. Automatically insert capacity-scheduler.
33 if exist %HADOOP_HOME%\contrib\capacity-scheduler (
34 if not defined HADOOP_CLASSPATH (
35 set HADOOP_CLASSPATH=%HADOOP_HOME%\contrib\capacity-scheduler\*.jar
36 ) else (
37 set HADOOP_CLASSPATH=%HADOOP_CLASSPATH%;%HADOOP_HOME%\contrib\capacity-scheduler\*.jar
38 )
39
40 rem The maximum amount of heap to use, in MB. Default is 1000.
41 rem set HADOOP_HEAPSIZE=
42 rem set HADOOP_NAMING_INIT_HEAPSIZE=""
43
44 rem Extra Java runtime options. Export to bin default

```

Batch file length: 4,001 lines: 90 Ln: 1 Col: 1 Pos: 1 Windows (CR LF) UTF-8 INS

## Step - 5

Created a folder named data in that created datanode and namenode as sub folder in it



## Step - 6

Hadoop has been installed successfully in the system.

```
Microsoft Windows [Version 10.0.22631.5768]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Admin>cd /

C:\>hadoop version
Hadoop 3.1.3
Source code repository https://gitbox.apache.org/repos/asf/hadoop.git -r ba631c436b886728f8ec2f54able289526c98579
Compiled by ztang on 2019-09-12T02:47Z
Compiled with protoc 2.5.0
From source with checksum ec785077c385118ac91aadde5ec9799
This command was run using /C:/hadoop-3.1.3/share/hadoop/common/hadoop-common-3.1.3.jar

C:\>|
```

## Formatting the NameNode

```
at org.apache.hadoop.fs.FSLinkResolver.resolve(FSLinkResolver.java:90)
at org.apache.hadoop.fs.FileContext.mkdir(FileContext.java:741)
at org.apache.hadoop.yarn.server.nodemanager.DirectoryCollection.createDir(DirectoryCollection.java:553)
at org.apache.hadoop.yarn.server.nodemanager.DirectoryCollection.createNonExistentDirs(DirectoryCollection.java:
343)
at org.apache.hadoop.yarn.server.nodemanager.LocalDirsHandlerService.serviceInit(LocalDirsHandlerService.java:21
5)
at org.apache.hadoop.service.AbstractService.init(AbstractService.java:164)
at org.apache.hadoop.service.CompositeService.serviceInit(CompositeService.java:188)
at org.apache.hadoop.yarn.server.nodemanager.NodeHealthCheckerService.serviceInit(NodeHealthCheckerService.java:
59)
at org.apache.hadoop.service.AbstractService.init(AbstractService.java:164)
at org.apache.hadoop.service.CompositeService.serviceInit(CompositeService.java:188)
at org.apache.hadoop.yarn.server.nodemanager.NodeManager.serviceInit(NodeManager.java:478)
at org.apache.hadoop.service.AbstractService.init(AbstractService.java:164)
at org.apache.hadoop.yarn.server.nodemanager.NodeManager.initAndStartNodeManager(NodeManager.java:936)
at org.apache.hadoop.yarn.server.nodemanager.NodeManager.main(NodeManager.java:1816)
Caused by: java.io.FileNotFoundException: Could not locate Hadoop executable: C:\hadoop-3.1.3\bin\winutils.exe -see http
://wiki.apache.org/hadoop/WindowsProblems
at org.apache.hadoop.util.Shell.getQualifiedBinInner(Shell.java:620)
at org.apache.hadoop.util.Shell.getQualifiedBin(Shell.java:593)
at org.apache.hadoop.util.Shell.<init>(Shell.java:698)
at org.apache.hadoop.util.StringUtils.<init>(StringUtils.java:78)
at org.apache.hadoop.yarn.server.nodemanager.NodeManager.main(NodeManager.java:1011)
2025-09-15 10:56:28,539 INFO nodemanager.NodeManager: SHUTDOWN_MSG:
/*****
SHUTDOWN_MSG: Shutting down NameNode at BHARATHGANESH/169.254.140.288
*****/
C:\hadoop-3.1.3\sbin>

/*****
SHUTDOWN_MSG: Shutting down NameNode at BHARATHGANESH/169.254.140.288
*****/
C:\hadoop-3.1.3\sbin>
```