**3. Program to Create Directories and Copy Files Between Directories Using Hadoop FileSystem API**

**import java.io.IOException;**

**import org.apache.hadoop.conf.Configuration;**

**import org.apache.hadoop.fs.\*;**

**public class HDFSDirectoryOperations {**

**public static void main(String[] args) throws IOException {**

**// Load Hadoop configuration**

**Configuration conf = new Configuration();**

**conf.set("fs.defaultFS", "hdfs://localhost:9000");**

**// Get the FileSystem object for HDFS**

**FileSystem fs = FileSystem.get(conf);**

**// Define source and destination directories in HDFS**

**Path sourceDir = new Path("/user/hadoop/source");**

**Path destDir = new Path("/user/hadoop/destination");**

**// 1 Create Directories in HDFS**

**createDirectory(fs, sourceDir);**

**createDirectory(fs, destDir);**

**// 2 Copy File from One Directory to Another in HDFS**

**Path sourceFile = new Path("/user/hadoop/source/sample.txt");**

**Path destFile = new Path("/user/hadoop/destination/sample.txt");**

**copyFile(fs, sourceFile, destFile);**

**// Close the FileSystem**

**fs.close();**

**}**

**// Method to Create a Directory in HDFS**

**public static void createDirectory(FileSystem fs, Path dirPath) throws IOException {**

**if (fs.exists(dirPath)) {**

**System.out.println("Directory already exists: " + dirPath);**

**} else {**

**fs.mkdirs(dirPath);**

**System.out.println("Directory created: " + dirPath);**

**}**

**}**

**// Method to Copy a File from One Directory to Another in HDFS**

**public static void copyFile(FileSystem fs, Path source, Path dest) throws IOException {**

**if (!fs.exists(source)) {**

**System.out.println("Source file does not exist: " + source);**

**return;**

**}**

**// Copy file within HDFS**

**FileUtil.copy(fs, source, fs, dest, false, fs.getConf());**

**System.out.println("File copied from " + source + " to " + dest);**

**}**

**}**