Cloud Computing (Mini – Project)

Step 1 : Install Hadoop and JDK first

Step 2 : Create a python project as “Main.py” by including below code

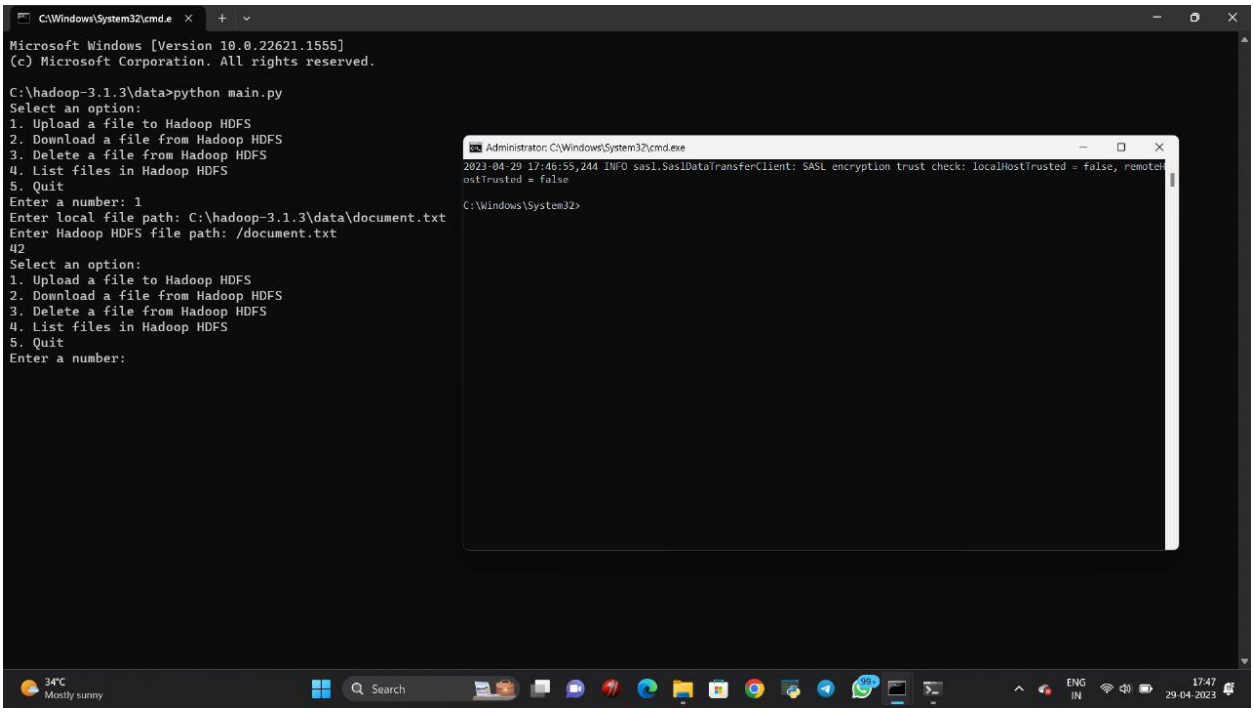
```
import ctypes

# Define the Hadoop HDFS directory to use
HADOOP_DIR = "/mydata"

# Define the function to run a Hadoop HDFS command with administrative privileges


def run_hadoop_cmd(command):
    # Use the 'runas' command to run the command with administrative privileges
    commands = u'/k hdfs dfs {}'.format(command)
    ret_code = ctypes.windll.shell32.ShellExecuteW(
        None,
        u"runas",
        u"cmd.exe",
        commands,
        None,
        1
    )
    return ret_code;

# Define the function to upload a file to Hadoop HDFS


def upload_file(local_path, hadoop_path):
    result = run_hadoop_cmd(
        "-put {} {}".format(local_path, HADOOP_DIR + hadoop_path))
    print(result)

# Define the function to download a file from Hadoop HDFS


def download_file(hadoop_path, local_path):
    result = run_hadoop_cmd("-get {} {}".format(HADOOP_DIR + hadoop_path,
local_path))
    print(result)

# Define the function to delete a file from Hadoop HDFS
```

```
def delete_file(hadoop_path):
    result = run_hadoop_cmd("-rm {}".format(HADOOP_DIR + hadoop_path))
    print(result)

# Define the function to list files in Hadoop HDFS


def list_files():
    output = run_hadoop_cmd("-ls {}".format(HADOOP_DIR))
    return output


# Main program
if __name__ == "__main__":
    while True:
        # Print menu options
        print("Select an option:")
        print("1. Upload a file to Hadoop HDFS")
        print("2. Download a file from Hadoop HDFS")
        print("3. Delete a file from Hadoop HDFS")
        print("4. List files in Hadoop HDFS")
        print("5. Quit")

        # Get user input
        choice = input("Enter a number: ")

        # Process user choice
        if choice == "1":
            local_path = input("Enter local file path: ")
            hadoop_path = input("Enter Hadoop HDFS file path: ")
            upload_file(local_path, hadoop_path)
        elif choice == "2":
            hadoop_path = input("Enter Hadoop HDFS file path: ")
            local_path = input("Enter local file path: ")
            download_file(hadoop_path, local_path)
        elif choice == "3":
            hadoop_path = input("Enter Hadoop HDFS file path: ")
            delete_file(hadoop_path)
        elif choice == "4":
            files = list_files()
            print(files)
        elif choice == "5":
            break
        else:
            print("Invalid choice. Please enter a number between 1 and 5.")
```

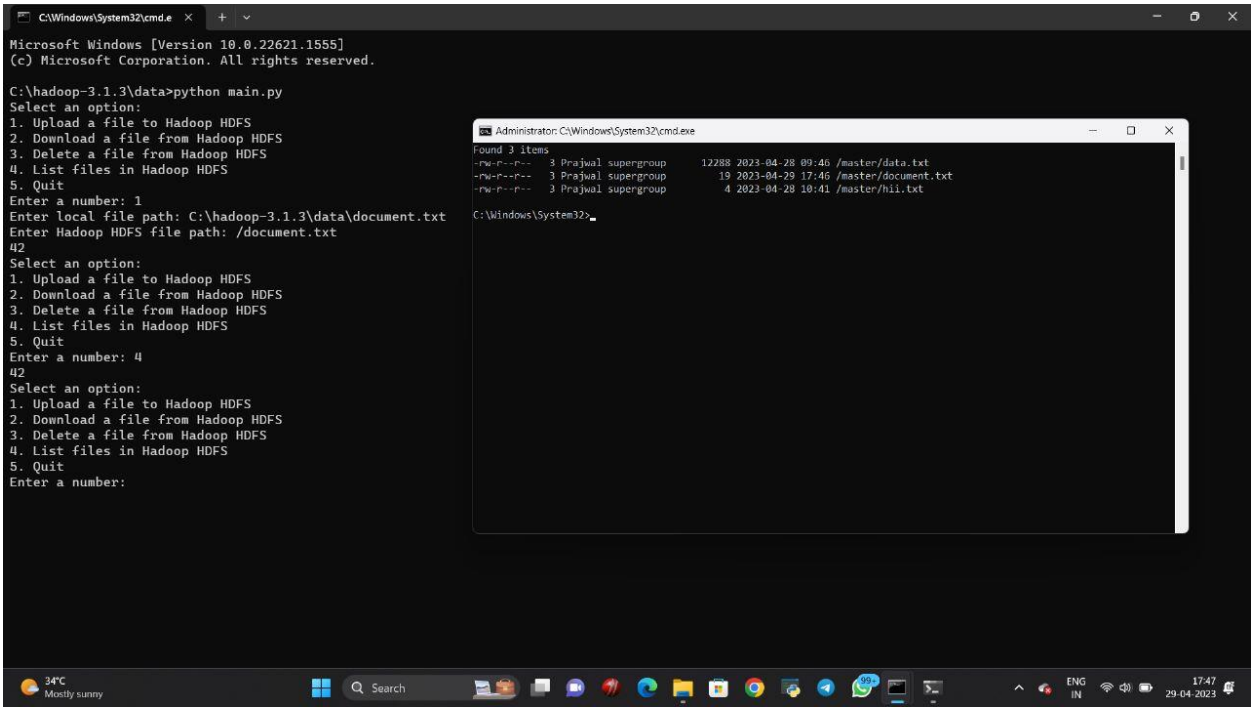
Output Of Program :

```
Select an option:
1. Upload a file to Hadoop HDFS
2. Download a file from Hadoop HDFS
3. Delete a file from Hadoop HDFS
4. List files in Hadoop HDFS
5. Quit
Enter a number: 1
Enter local file path: C:\file.txt
Enter Hadoop HDFS file path: /file.txt
```

Step 3 : If we enter 1 option then file will be uploaded to Hadoop by using following commands shown in below picture.



Step 4 : For showing uploaded file we can choose option 4 which list all files uploaded to the Hadoop



Step 5 : Option 3 is for deleting files uploaded to the Hadoop