**1. PROJECT TITLE:**

**DLSTM with adam lyrebird optimization for solar irradiance prediction using time series data**

**2. HARDWARE REQUIREMENTS**

OS-Windows 10

RAM-8GB

ROM-More than 100 GB

GPU-Yes

CPU-1.7 GHz

**3. SOFTWARE REQUIREMENTS**

Software name (**Python**): Version: 3.9.11

(Download link: <https://www.python.org/downloads/release/python-3911/>)

Click -> Windows installer (64-bit).

Software name: **PyCharm**: Version: 2020.3.3

(Download link: <https://www.jetbrains.com/pycharm/download/other.html>)

(For installation procedure, please refer the doc “steps to install python.doc”)

**4. HOW TO RUN**

**Step 1**: Loading the project in PYCHARM

* Open pycharm
* Go to File, select Open browse the project from your drive and select it. So that the project will get loaded into the Pycharm.
* For the first time, Pycharm will take some time to load the settings.
* Please wait if any process is loading on the bottom of the screen.
* Check the Project Interpreter (C:\Users\---\AppData\Local\Programs\Python\Python39\python.exe) is not presented, then add this ‘python.exe’ from the installed location.
* In Pycharm Terminal(bottom left), type the comment “pip install -r requirements.txt”

**Step 2**: Run the program and getting the results

* From 'current project folder' window in pycharm, Open ‘**278417-> Main -> GUI.py**’ and click run button
* In GUI window
  + Select Delay value(1000, 2000, 3000, 4000, 5000)
  + Click START, after some time the result will be displayed

**Step 3**: Generate the graphs plotted in the paper

* From 'current project folder' window in pycharm, open ‘Result\_graphs.py’, and click run button.

**5. IMPORTANT PYTHON FILE AND DESCRIPTION:**

GUI.py:User Interface to select delay (sec), code starts here.

Run.py: Main code starts here

Main -> Feature.py: Technical indicators extraction

Main-> RUN.py: line(14) Proposed DLSTM\_ALOA model called from here.

Result\_graphs.py: displays graphs included in the paper.