Data visualization and statistics from data

You are given the IIT Mandi landslide data-set as a **csv** file. This data-set contains the readings from various sensors installed at 10 locations around the IIT Mandi campus. These sensors give the details about various factors like temperature, humidity, pressure etc. The given CSV file contains following attributes:

- **dates:** date of collection of data.
- **stationid:** Indicates the location of the sensor.
- **temperature:** Atmospheric temperature around the sensor in Celsius.
- **humidity:** The concentration of water vapor present in the air. It is a relative humidity. (in %).
- **pressure**: Atmospheric pressure in millibars (mb).
- **rain:** Measure of rainfall in ml.
- **lightavgw/o0:** The average light throughout the daytime (in lux units).
- **lightmax:** The maximum lux count by the sensor.
- **moisture:** indicates the water stored in the soil (measured between 0 to 100 percent).

Write a python program (with pandas) to read the given data and display following:

1. Mean, median, mode, minimum, maximum and standard deviation for all the attributes (excluding dates and stationid).
2. Obtain the scatter plot between
    a. 'rain' and each of the other attributes, excluding 'dates' and 'stationid'. Consider 'rain' in x-axis and other attributes in y-axis.
    b. 'temperature' and each of the other attributes, excluding 'dates' and 'stationid', Consider 'temperature' in x-axis and other attributes in y-axis. (You can use `matplotlib` library).
3. Find the value of correlation coefficient in the following cases:
    a. 'rain' with all other attributes (excluding dates and stationid).
    b. 'temperature' with all other attributes (excluding dates and stationid).
4. Plot the histogram for the attributes 'rain' and 'moisture' (You may use "`hist`" function from pandas)
5. Plot the histogram of attribute 'rain' for each of the 10 stations (Use "`groupby`" function to group the sensors according to their "stationid")
6. Obtain the boxplot for the attributes 'rain' and 'moisture' (Use "`boxplot`" function)

Write a report that should include the at least the following:

- Answers to these questions (including figures/plots). Note: Clearly label the x and y axis of each of the figures/plots
- The inference from the scatter plots in 2a and 2b.
- The inference from the correlation coefficient values in 2a and 2b.
- Observations from scatter plots and their relation with corresponding correlation coefficients
- Observations on the plots in 4, 5 and 6.
- Any other observations and inferences.

Instructions:

- **Your python program(s) should be well commented. Comment section at the beginning of the program(s) should include your name, registration number and mobile number.**
- **The python program(s) should be in the file extension .py**
- **Report should be strictly in PDF form.**
- **First page of your report must include your name, registration number and mobile number.**
- **Upload your program(s) and report in a single zip file. Give the name as <roll_*number*>_Assignment1.zip. Example: *b20001*_Assignment1.zip**
- **Upload the zip file in the link corresponding to your group only.**
- **In case the program found to be copied from others, both the person who copied and who help for copying will get zero as a penalty.**