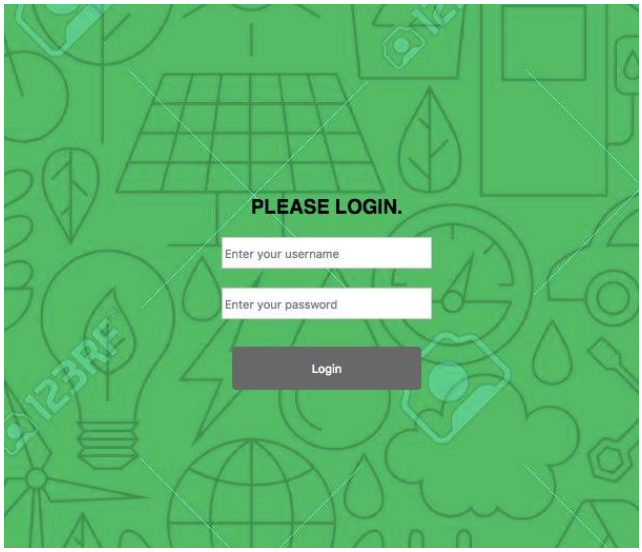
REPORT -FLASK Application

1) Our flask application deals with taking input from the users and giving the predictions about gases based on certain features.
2) The application basically serves 2 kind of users which are:
    a) Low-privileged user, which has access to only the prediction of a single set of values and not on large amounts of data.
    b) High-privileged user, which has access to all the predictions provided by our application for the input which was provided by him.
3) Based upon the user access, the low-privileged user can upload the data for which he wants results, only from his system. Whereas the high-privileged user can upload the data in 3 ways which are:
    a) Uploading the link of the input file.
    b) Uploading the file from the local system.
    c) Uploading the data in the JSON format(for which he expects the results to be delivered in the JSON format)
4) Now after any of the user has successfully uploaded the data, he gets redirected to a web page where he can primarily find the **DOWNLOAD LINK** of the results which has been calculated by the web application and secondly, gets to know about the different models which are being used and their accuracy. The web page also shows the different gases, their names and the class number by which they are represented in the results.
5) Considering the low-privileged user, he can specify the index of the row for which he wants to get the results for and hence only that result will be able to download in that case.

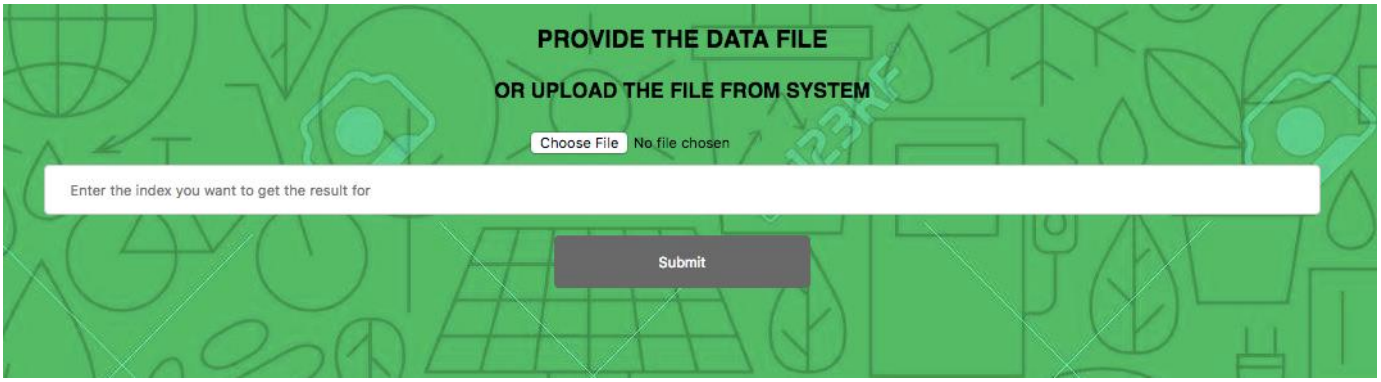
We will take a walkthrough with the help of screenshots which can give you insights on how any of the 2 user can use our application:

1) Low-privileged User:

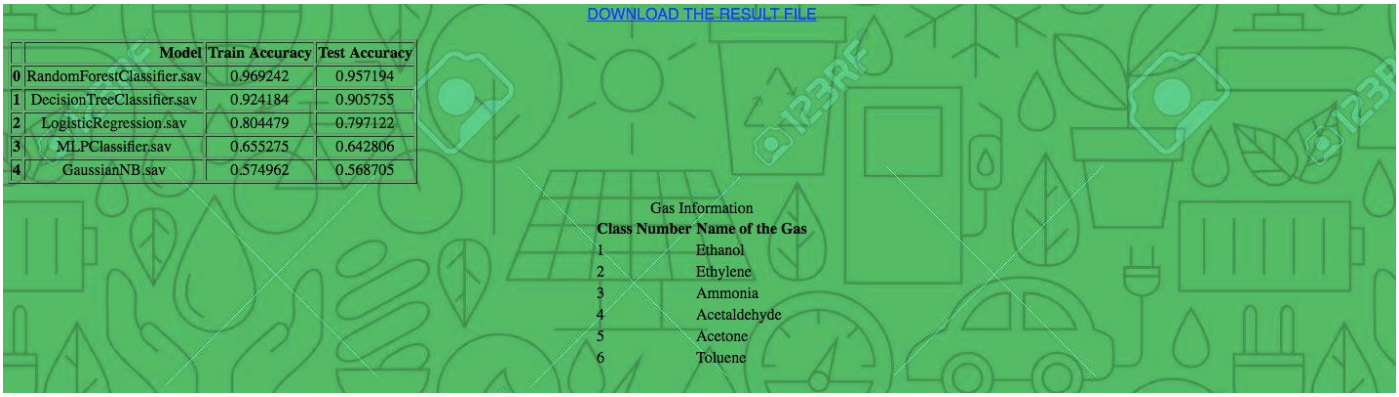
At the first the user lands to the login page where he can use his username and password to log in to the system.



Then after logging in the user can upload the input file from his local system into our application and then specify the index of the row for which he wants the results to be received then hit the submit button to get to the download link page.



Now the user can download the results using the download link present on the web page where they can also view the prediction accuracy of different models and the gas information.



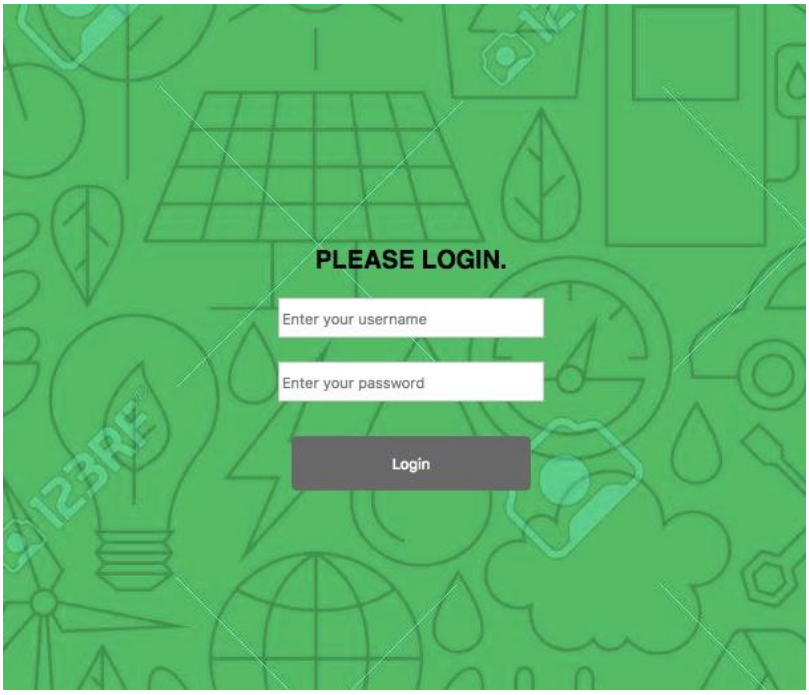
	Model	Train Accuracy	Test Accuracy
0	RandomForestClassifier.sav	0.969242	0.957194
1	DecisionTreeClassifier.sav	0.924184	0.905755
2	LogisticRegression.sav	0.804479	0.797122
3	MLPClassifier.sav	0.655275	0.642806
4	GaussianNB.sav	0.574962	0.568705

Gas Information

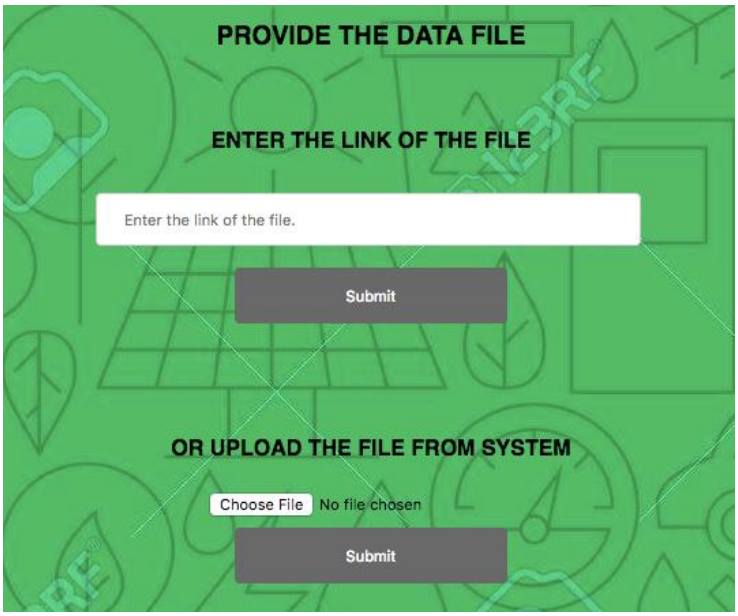
Class Number	Name of the Gas
1	Ethanol
2	Ethylene
3	Ammonia
4	Acetaldehyde
5	Acetone
6	Toluene

2) High-privileged user:

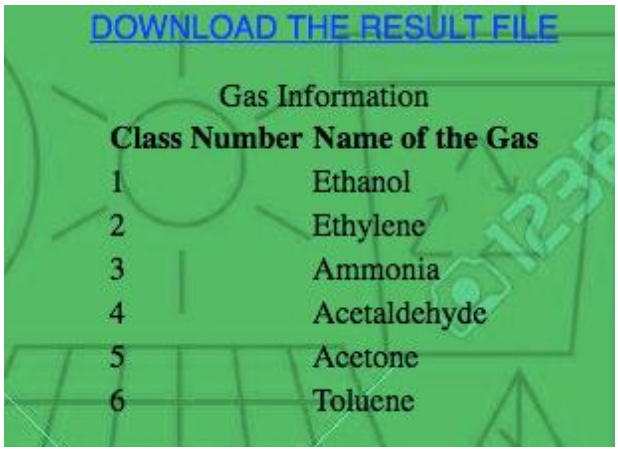
The user can log in into the application by using their username and password.



Now after logging in the user has 3 choice to give the input data to the application the first two ways have a similar approach while giving the inputs that is, you can either enter the link of the data file to be uploaded in the application or else choose a file from the local system and then click submit to redirect to the download link page.

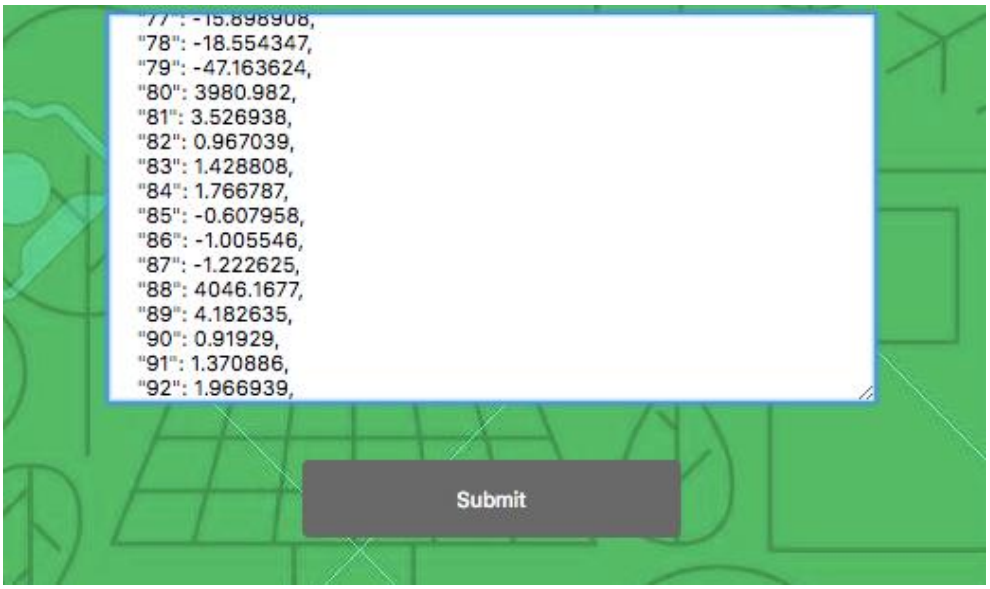


After hitting the submit button by uploading the file or entering the link of the file, the user gets redirected to the download page link where he can download the results of the input data.



The other way of uploading the data into application is, the user can give input in the form of json data. User can just click submit button and then he will be redirected to a page where he can paste his json data and click submit to get the results.(In the form of JSON data)

After he clicks the submit button, he can view the webpage where he can paste the json data and hit submit to redirect to the web page having DOWNLOAD RESULTS link.



After the user has clicked submit button, he gets the download results page where he can click the DOWNLOAD THE RESULTS FILE and then he gets the response in the JSON format on the web page.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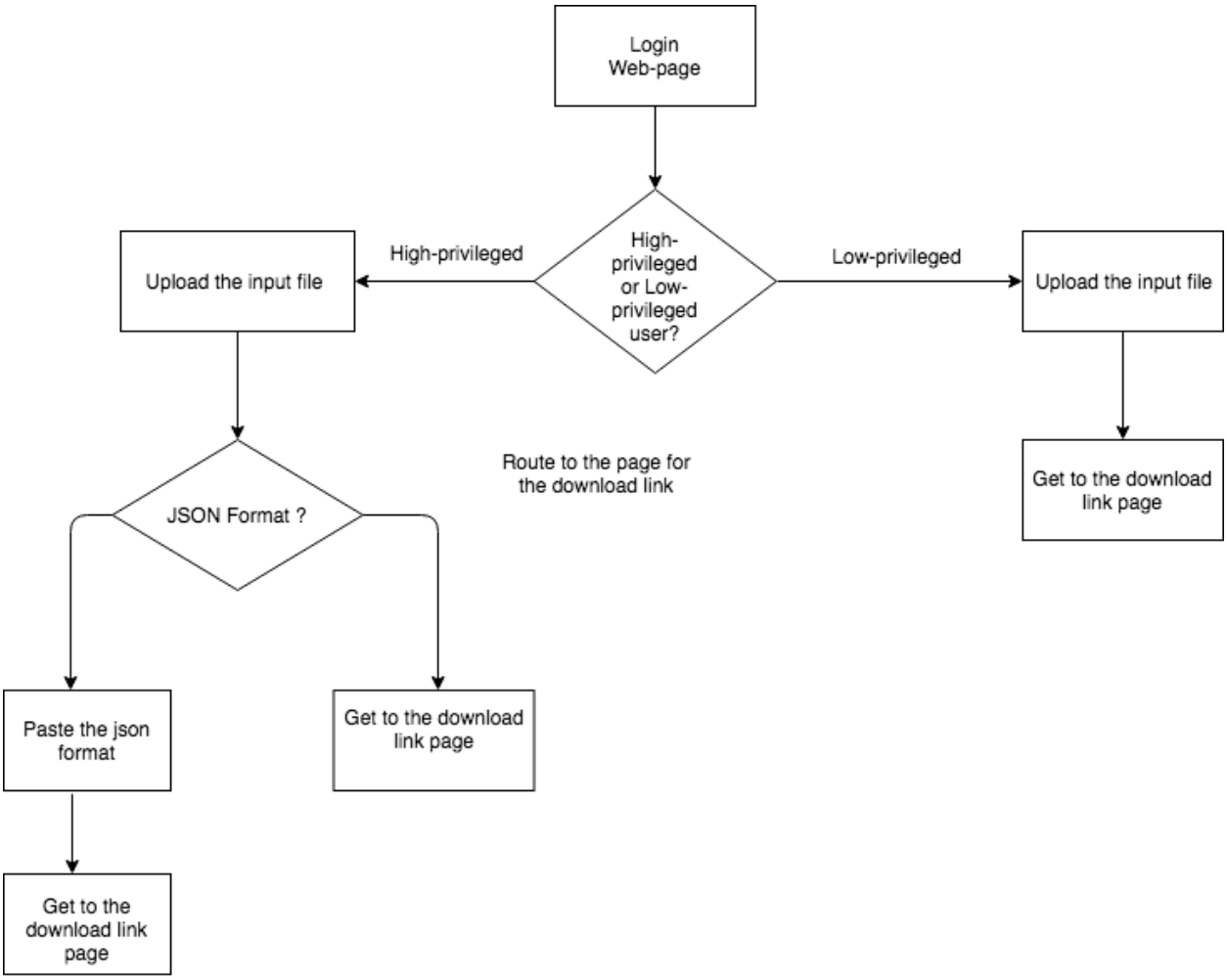
The Flowchart of how our application works is as follows:


Login
Web-page
High-
privileged
or Low-
privileged
user?
High-privileged
Low-privileged
Upload the input file
Upload the input file
Route to the page for
the download link
Get to the download
link page
JSON Format ?
Paste the json
format
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link page
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