PRN : 2020BTECS00212

Assignment No-2

Software Engineering Tools Lab

(Module 2- Software Development Frameworks)

Due date-11/02/2022

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Question 1. List of Frameworks/IDEs/Softwares :

1. Eclipse
2. Android SDK
3. Node.Js
4. DotNet
5. Ruby on Rails
6. Anaconda
7. Google colab

For every Frameworks/IDEs/Softwares given above provide the answers for below questions :

1. Original author

2. Developers

3. Initial release

4. Stable release

5. Preview release

6. Repository (with cloud support)

7. Written in (Languages)

8. Operating System support

9. Platform ,portability

10. Available in (Total languages)

11. List of languages supported

12. Type (Programming tool, integrated development environment etc.)

13. Website

14. Features

15. Size (in MB, GB etc.)

16. Privacy and Security

17. Type of software (Open source/License)

18. If License- Provide details.

19. Latest version

20. Cloud support (Yes/No)

21. Applicability

22. Drawbacks (if any)

Answer :

Google colab :

1. Original author : Fernando Perez and Brian Granger

2. Developers : Project Jupyter

3. Initial release : Google first started working with the Jupyter Development Team in 2014 to release an early version of the tool, , since then the tool has been constantly evolving.

4. Stable release : Currently, access to Colab is managed by services without individual controls. Later in 2021, the individual ON/OFF control for Colab will be available and control access to Colab.

5. Preview release : It was first publicly released in early 2018.

6. Repository (with cloud support) : Colab notebooks allow you to combine executable code and rich text in a single document, along with images, HTML, LaTeX and more. When you create your own Colab notebooks, they are stored in your Google Drive account.

7. Written in (Languages) : three core programming languages supported by Jupyter, which are Julia, Python and R, and also a homage to Galileo's notebooks recording the discovery of the moons of Jupiter.

8. Operating System support : Colab is running Python 3.7, whereas you will run Python 3.8 on your machine through your Anaconda installation.

9. Platform ,portability : Google Colab! It's an incredible online browser-based platform that allows us to train our models on machines for free . Sounds too good to be true, but thanks to Google, we can now work with large datasets, build complex models, and even share our work seamlessly with others.

10. Available in (Total languages) : English

11. List of languages supported : Colab focuses on supporting Python and its ecosystem of third-party tools. We're aware that users are interested in support for other Jupyter kernels (eg R or Scala). We would like to support these, but don't yet have any ETA.

12. Type (Programming tool, integrated development environment etc.) : nonprofit organization .

13. Website : jupyter.org

14. Features : To support interactive data science and scientific computing across all programming languages .

15. Size (in MB, GB etc.) : While 32 GB of RAM is available in Colab Pro, Pro+ users have 52 GB available with the high-memory option. That is about 1.6 times as much as pro users and 3.25 times as much as free users.

16. Privacy and Security : Trusted by industry leaders and Fortune 500 companies, CoLab is built to the highest standards of security and data protection adopting a security-first approach to product development and infrastructure design, while giving end users the safest possible method to review critical data with their team and external partners.

17. Type of software (Open source/License) : Jupyter is the open source project on

which Colab is based. Colab allows you to use and share Jupyter notebooks with others without having to download, install, or run anything.

18. If License- Provide details : Google Colab now also provides a paid platform called Google Colab Pro, priced at $9.99 a month. In this plan, you can get the Tesla T4 or Tesla P100 GPU, and an option of selecting an instance with a high RAM of around 27 GB.

19. Latest version : Python 3.8

20. Cloud support (Yes/No) : Google Colaboratory is a free online cloud-based Jupyter notebook environment that allows us to train our machine learning and deep learning models on CPUs, GPUs, and TPUs.

21. Applicability : Getting started with TensorFlow , Developing and training neural networks.

22. Drawbacks (if any) : overall usage limits as well as idle timeout periods, maximum VM lifetime, GPU types available, and other factors vary over time. Colab does not publish these limits, in part because they can (and sometimes do) vary quickly.

Question 2 .

Implement linear regression problem using Google colab (Perform preprocessing, training and testing) :

Dataset 1 -

https://www.kaggle.com/spittman1248/cdc-data-nutrition-physical-activity-obesity

Dataset 2-

https://archive.ics.uci.edu/ml/datasets/Air+Quality

Dataset 3-

https://archive.ics.uci.edu/ml/datasets/Appliances+energy+prediction

Dataset 4-

https://archive.ics.uci.edu/ml/datasets/Bike+Sharing+Dataset

Dataset 5- https://archive.ics.uci.edu/ml/datasets/Demand+Forecasting+for+a+store

Dataset 6-

https://archive.ics.uci.edu/ml/datasets/Hungarian+Chickenpox+Cases

Dataset 7-

https://archive.ics.uci.edu/ml/datasets/KDD+Cup+1998+Data

Dataset 8-

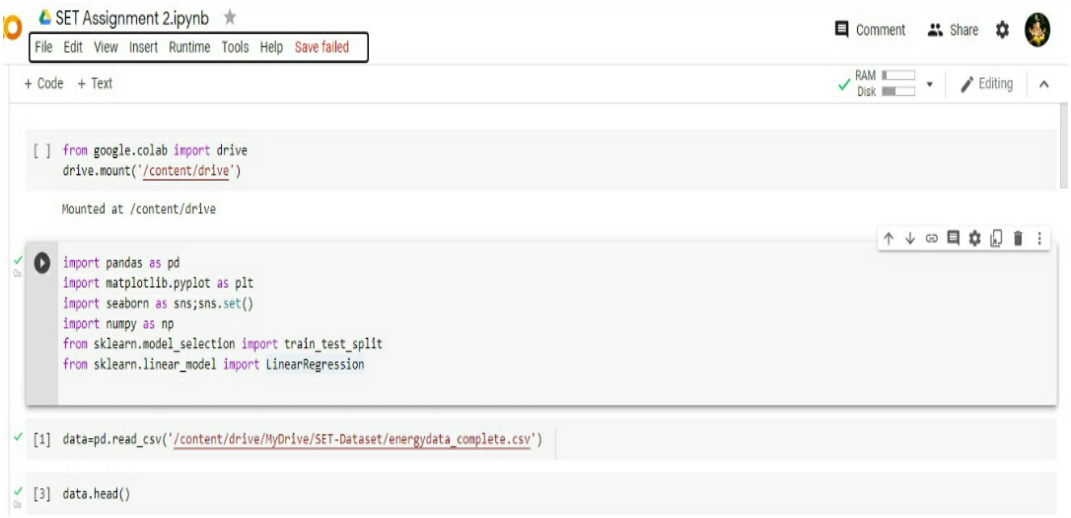
https://archive.ics.uci.edu/ml/datasets/Water+Quality+Prediction

Answer :

Dataset 3 :

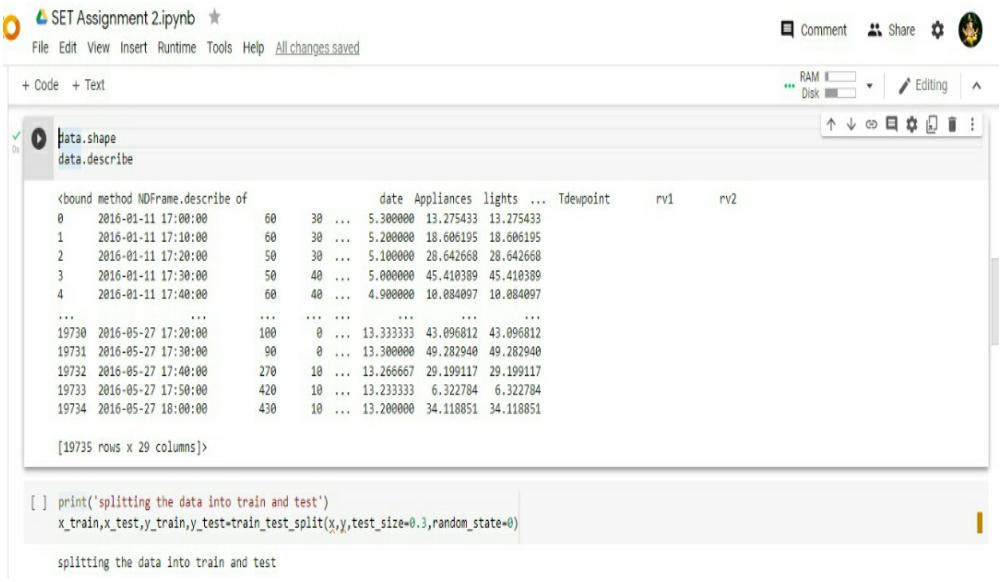
https://archive.ics.uci.edu/ml/datasets/Appliances+energy+prediction

1. Loading Dataset :

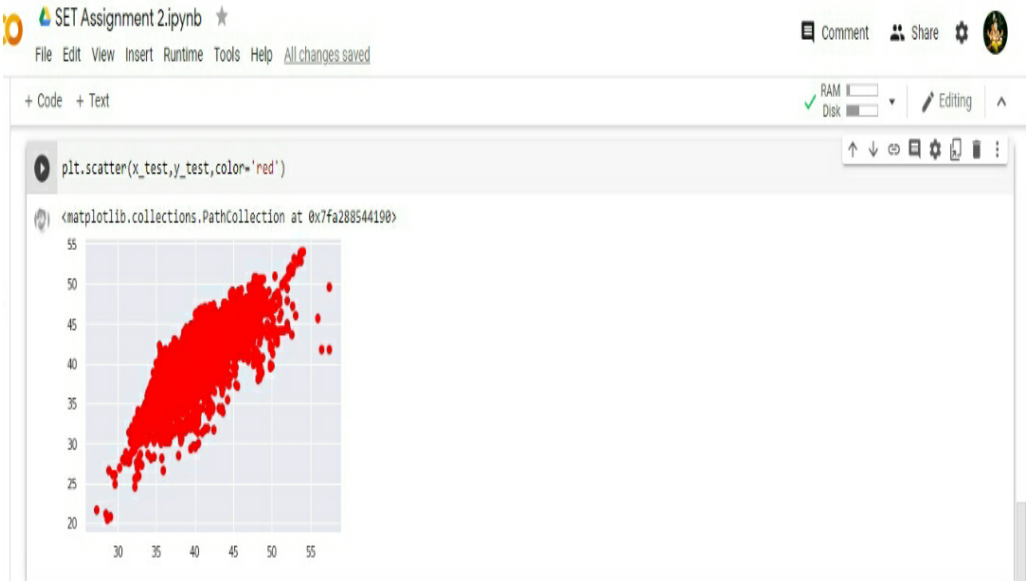


	date	Appliances	lights	T1	RH_1	T2	RH_2	T3	RH_3	T4	RH_4	T5	RH_5	T6	RH_6	T7	RH_7
0	2016-01-11 17:00:00	60	30	19.89	47.596667	19.2	44.790000	19.79	44.730000	19.000000	45.566667	17.166667	55.20	7.026667	84.256667	17.200000	41.626667
1	2016-01-11 17:10:00	60	30	19.89	46.693333	19.2	44.722500	19.79	44.790000	19.000000	45.992500	17.166667	55.20	6.833333	84.063333	17.200000	41.560000
2	2016-01-11 17:20:00	50	30	19.89	46.300000	19.2	44.626667	19.79	44.933333	18.926667	45.890000	17.166667	55.09	6.560000	83.156667	17.200000	41.433333
3	2016-01-11 17:30:00	50	40	19.89	46.066667	19.2	44.590000	19.79	45.000000	18.890000	45.723333	17.166667	55.09	6.433333	83.423333	17.133333	41.290000
4	2016-01-11 17:40:00	60	40	19.89	46.333333	19.2	44.530000	19.79	45.000000	18.890000	45.530000	17.200000	55.09	6.366667	84.893333	17.200000	41.230000

2. Preprocessing :



3.Training & Testing :


SET Assignment 2.ipynb
File Edit View Insert Runtime Tools Help All changes saved
Comment
Share
+ Code
+ Text
RAM
Disk
Editing
plt.scatter(x_test,y_test,color='red')
<matplotlib.collections.PathCollection at 0x7fa288544190>
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30
35
40
45
50
55


print('Training Data Size:',x_train.shape)
print('Training Data Size:',x_test.shape)
Training Data Size: (13814,)
Training Data Size: (5921,)

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