SET Lab Assignment 2

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Batch: T6

Q1. Provide answers for the below questions for "Google Colab"

1.   Original author
      Developers at Google

2.   Developers
      Developers at Google

3.   Initial release
      Made public in late 2017

4.   Stable release
      It is a web app – no listed releases.

5.   Preview release
      It is a web app – no listed releases.

6.   Repository (with cloud support)
      https://github.com/googlecolab

7.   Written in (Languages)
      Information not available publicly.

8.   Operating System support
      It is a web app. Works on all operating systems having
      support for web browsers. No installation required.

9. Platform, portability
   It is a cloud-based web app. No installation required.

10. Available in (Total languages)
    It is a web app. Can be translated into any language.

11. List of languages supported
    Only Python language is supported.

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

13. Website
    https://colab.research.google.com/

14. Features
    - Interactive tutorials to learn machine learning and neural networks.
    - Write and execute Python 3 code without having a local setup.
    - Execute terminal commands from the Notebook.
    - Import datasets from external sources such as Kaggle.
    - Save your Notebooks to Google Drive.
    - Import Notebooks from Google Drive.
    - Free cloud service, GPUs and TPUs.
    - Integrate with PyTorch, Tensor Flow, Open CV.
    - Import or publish directly from/to GitHub.

15. Size (in MB, GB etc.)
    It is a web app. No need to install.

16. Privacy and Security
Same as Google's other services.

17. Type of software (Open source/License)
Free closed source.

18. If License- Provide details.
Apache-2.0

19. Latest version
It is a web app. No listed versions

20. Cloud support (Yes/No)
It is a cloud-based web app.

21. Applicability
It is very useful and applicable for data science and machine learning projects. It provides free GPUs and TPUs as well as cloud collaboration services.

22. Drawbacks (if any)
- Closed environment
- Repetitive tasks
- No live editing
- Saving and storage problems
- Limited space and time

Q2. Perform linear regression on dataset.

```python
# r2 score, mse, rmse
from sklearn.metrics import r2_score
from sklearn.metrics import mean_squared_error
# predicting the accuracy score
score=r2_score(y_test,y_predict)
print("r2 socre is ", score)
print("mean_sqrd_error is ",mean_squared_error(y_test,y_predict))
print("root_mean_squared error of is ",np.sqrt(mean_squared_error(y_test,y_predict)))
```

```
r2 socre is  0.7682224581057615
mean_sqrd_error is  2.372077071667475e-05
root_mean_squared error of is  0.004870397387962788
```

```python
fig, ax = plt.subplots()
ax.scatter(y_predict, y_test, edgecolors=(0, 0, 1))
ax.plot([y_test.min(), y_test.max()], [y_test.min(), y_test.max()], 'r--', lw=3)
ax.set_xlabel('Predicted')
ax.set_ylabel('Actual')
plt.show()
```