**Software Engineering Tools Lab**

**Assignment No-2**

**Module 2- Software Development Frameworks**

**For every Google Collab given above provide the answers for below questions**

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| **Original author** | Fernando Perez and Brian Granger |
| **Developers** | Project Jupyter |
| **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. |
| **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. |
| **Preview release** | It was first publicly released in early 2018. |
| **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. |
| **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. |
| **Operating System support** | Colab is running Python 3.7, whereas you will run Python 3.8 on your machine through your Anaconda installation. |
| **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. |
| **Available in (Total languages)** | English |
| **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. |
| **Type (Programming tool, integrated development environment etc.)** | Nonprofit organization |
| **Website** | jupyter.org |
| **Features** | To support interactive data science and scientific computing across all programming languages . |
| **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. |
| **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. |
| **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. |
| **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. |
| **Latest version** | Python 3.8 |
| **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. |
| **Applicability** | Getting started with TensorFlow , Developing and training neural networks. |
| **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. |

**2 . Implement linear regression problem using Google colab (Perform preprocessing, training and testing)**

**I used Dataset no. 4 i.e. https://archive.ics.uci.edu/ml/datasets/Bike+Sharing+Dataset**

**for implementation of linear regression problem using Google colab.**

**My practical-**

https://colab.research.google.com/drive/12hUtaeDGGsBsbRbIH\_eZ8oTXDthNhlOF#scrollTo=FYC2E4Es05Q6

