Lecture 3 - Google Colab

Access Google Colab: Open your web browser and visit the Google Colab website: https://colab.research.google.com

Sign in: Use your Google account credentials to log in. If you do not have a Google account, you will need to create one.

Create a new notebook: Click on "File" in the upper left corner and select "New notebook" from the dropdown menu.

Writing code: The notebook opens up with a single empty cell. You can start writing Python code here. To run the cell, click the play button on the left side of the cell or use Shift+Enter.

Adding cells: Click the "+ Code" or "+ Text" buttons to add new cells to your notebook. "+ Code" will add a new cell where you can write Python code, and "+ Text" will add a new cell where you can write markdown for notes and explanations.

Saving your work: Google Colab auto-saves your work to Google Drive as you make changes. You can manually save by clicking "File" then "Save", or use the shortcut Ctrl+S.

Changing runtime type: If you need more computational power or GPU/TPU support, you can change your runtime. Click on "Runtime" in the menu, then "Change runtime type". Here you can choose the hardware accelerator. Note that using GPU/TPU may not always be available for free accounts.

Running long processes: Google Colab will disconnect if it is idle for a certain period of time. For free accounts, it's around 90 minutes. Also, maximum lifespan of a VM in Colab Pro is 24 hours.

Sharing your notebook: If you want to share your notebook, you can click on the "Share" button on the top right of the page. Here you can add people with their email addresses or get a shareable link.

Closing the notebook: Once you are done, you can close the browser tab. Your notebook will be available in your Google Drive for later use.

Remember, this is a simplified guide. Google Colab has many more features such as installing libraries, importing data, using Google Drive for storage, and more. Be sure to check out the official Google Colab documentation for more details.

In Colab, you have the power to choose which processor your code is going to run on. The moment a processor is assigned, we start a **'session'** - this is where all the execution details are stored. Think of a **'runtime'** as the virtual machine that holds all the information for the code execution. One thing to remember is that when you initialize a session, any previous progress gets reset, so be mindful of that.

Colab's free version offers a neat feature: it **saves** your sessions and keeps them alive for up to **12 hours**, even if you close your tab. So, when you reopen your Colab file, you'll find your previous session waiting for you.

But, here's a little quirk. If you leave a Colab session open without any activity for about **90 minutes** without closing your tab, it's designed to automatically reset the session. Just a small something to keep in mind as you work your magic in Colab!

Navigate to **'Runtime'** and then click on '**Change Runtime Type**' in the menu.

The 'None' option signifies a CPU environment. However, when you're working on your class assignments, make sure to switch to **GPU** and then run your code.