Exercise

Aim: create user environment and install jupyter notebook from conda command prompt.

What is conda?

Conda is package management system that provide the package management and environment management features for different operating system like MacOS, Linux, Windows. Its package manager helps to find and install packages which required or needed. In this its very easy to create and Manage the environment.

- With conda, you can

  - create,

  - export,

  - list,

  - remove and

  - update

What is conda a command prompt?

Conda command prompt is a command line platform to perform operation in the conda environment.

What is jupyter notebook?

Jupyter Notebook is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations and narrative text. Uses include: data cleaning and transformation, numerical simulation, statistical modelling, data visualization, machine learning, and much more.

1. To create an environment:

conda create --name myenv

```
■ Anaconda Prompt (Anaconda3)

(base) C:\Users\gs>conda create --name gsenv
Collecting package metadata (current_repodata.json): done
Solving environment: done

## Package Plan ##

  environment location: C:\Users\gs\Anaconda3\envs\gsenv


Proceed ([y]/n)? y

Preparing transaction: done
Verifying transaction: done
Executing transaction: done
#
# To activate this environment, use
#
#     $ conda activate gsenv
#
# To deactivate an active environment, use
#
#     $ conda deactivate


(base) C:\Users\gs>
```

in conda, an environment can also be create by following commands

▪ To create an environment with a specific version of Python:

   conda create -n myenv python=3.4

▪ To create an environment with a specific package:

conda create -n myenv scipy

▪ *OR:*

conda create -n myenv python

conda install -n myenv scipy

▪ To create an environment with a specific version of a package:

   conda create -n myenv scipy=0.15.0

▪ OR:

   conda create -n myenv python

   conda install -n myenv scipy=0.15.0

▪ To create an environment with a specific version of Python and multiple packages:

conda create -n myenv python=3.4 scipy=0.15.0 astroid babel

2. Cloning an environment:

▪ You can make an exact copy of an environment by creating a clone of it:
   conda create --name myclone --clone myenv

```
■ Anaconda Prompt (Anaconda3) - conda install pip

(gsenv) C:\Users\gs>conda craete --name gsenv1 --clone gsenv

CommandNotFoundError: No command 'conda craete'.
Did you mean 'conda create'?


(gsenv) C:\Users\gs>conda create --name gsenv1 --clone gsenv
Source:      C:\Users\gs\Anaconda3\envs\gsenv
Destination: C:\Users\gs\Anaconda3\envs\gsenv1
Packages: 11
Files: 0
Preparing transaction: done
Verifying transaction: done
Executing transaction: done
#
# To activate this environment, use
#
#     $ conda activate gsenv1
#
# To deactivate an active environment, use
#
#     $ conda deactivate
```

in conda, an environment can also be cloned by following commands

- To verify that the copy was made:
  > *conda info –envs*

3. Building identical conda environments:

- To produce a spec list, Run following command

  > *conda list –explicit*

- To create this spec list as a file in the current working directory, run:
  > *conda list --explicit > spec-file.txt*

```
Anaconda Prompt (Anaconda3) - conda  install pip                              —    □    ✕

(gsenv) C:\Users\gs>conda info --envs
# conda environments:
#
base                     C:\Users\gs\Anaconda3
gsenv                *   C:\Users\gs\Anaconda3\envs\gsenv
gsenv1                   C:\Users\gs\Anaconda3\envs\gsenv1


(gsenv) C:\Users\gs>conda list --explicit>gsenv.txt

(gsenv) C:\Users\gs>conda list
# packages in environment at C:\Users\gs\Anaconda3\envs\gsenv:
#
# Name                    Version                   Build  Channel
ca-certificates           2019.11.27                    0
certifi                   2019.11.28                py38_0
openssl                   1.1.1d                he774522_3
pip                       19.3.1                    py38_0
python                    3.8.1                 h5fd99cc_1
setuptools                44.0.0                    py38_0
sqlite                    3.30.1                he774522_0
vc                        14.1                  h0510ff6_4
vs2015_runtime            14.16.27012           hf0eaf9b_1
wheel                     0.33.6                    py38_0
wincertstore              0.2                       py38_0
```

```
gsenv - Notepad

File  Edit  Format  View  Help
# This file may be used to create an environment using:
# $ conda create --name <env> --file <this file>
# platform: win-64
@EXPLICIT
https://repo.anaconda.com/pkgs/main/win-64/ca-certificates-2019.11.27-0.conda
https://repo.anaconda.com/pkgs/main/win-64/vs2015_runtime-14.16.27012-hf0eaf9b_1.conda
https://repo.anaconda.com/pkgs/main/win-64/vc-14.1-h0510ff6_4.conda
https://repo.anaconda.com/pkgs/main/win-64/openssl-1.1.1d-he774522_3.conda
https://repo.anaconda.com/pkgs/main/win-64/sqlite-3.30.1-he774522_0.conda
https://repo.anaconda.com/pkgs/main/win-64/python-3.8.1-h5fd99cc_1.conda
https://repo.anaconda.com/pkgs/main/win-64/certifi-2019.11.28-py38_0.conda
https://repo.anaconda.com/pkgs/main/win-64/wincertstore-0.2-py38_0.conda
https://repo.anaconda.com/pkgs/main/win-64/setuptools-44.0.0-py38_0.conda
https://repo.anaconda.com/pkgs/main/win-64/wheel-0.33.6-py38_0.conda
https://repo.anaconda.com/pkgs/main/win-64/pip-19.3.1-py38_0.conda
|
```

- To create an identical environment on the same machine or another machine:

> ***conda create --name myenv --file spec-file.txt***

- To use the spec file to install its listed packages into an existing environment:

  > ***conda install --name myenv --file spec-file.txt***

4. Activating and Deactivating an environment:

- To activate an environment:

- On Windows, in your Anaconda Prompt, run

  > ***conda activate myenv***

```
Anaconda Prompt (Anaconda3) - conda  install pip
# To activate this environment, use
#
#     $ conda activate gsenv
#
# To deactivate an active environment, use
#
#     $ conda deactivate


(base) C:\Users\gs>conda activate gsenv

(gsenv) C:\Users\gs>conda list
# packages in environment at C:\Users\gs\Anaconda3\envs\gsenv:
#
# Name                    Version                   Build  Channel

(gsenv) C:\Users\gs>conda install pip
Collecting package metadata (current_repodata.json): done
Solving environment: done
```

- On macOS and Linux, in your Terminal Window, run
  > ***source activate myenv***
- Conda prepends the path name myenv onto your system command.

- To deactivate an environment:

- On Windows, in your Anaconda Prompt, run

  > ***deactivate***

- On macOS and Linux, in your Terminal Window, run

  > ***source deactivate***

5. Determining your current environment:

- By default, the active environment—the one you are currently using—is shown at the beginning of your command prompt, in

- parentheses () or

- brackets []

- If you do not see this, run:

    conda info –envs

In the environments list that displays, your current environment is highlighted with an asterisk (*).

6. Viewing a list of your environments:

conda info --envs

```
■ Anaconda Prompt (Anaconda3) - conda install pip                                    —    □    ✕

(gsenv) C:\Users\gs>conda info --envs
# conda environments:
#
base                     C:\Users\gs\Anaconda3
gsenv                 *  C:\Users\gs\Anaconda3\envs\gsenv
gsenv1                   C:\Users\gs\Anaconda3\envs\gsenv1
```

- *OR*

    conda env list

7. Viewing a list of the packages in an environment:

conda list -n myenv

- If the environment is activated, in your Terminal window or an Anaconda Prompt, run:

    conda list

```
(gsenv) C:\Users\gs>conda list
# packages in environment at C:\Users\gs\Anaconda3\envs\gsenv:
#
# Name                    Version                   Build  Channel
ca-certificates           2019.11.27                    0
certifi                   2019.11.28               py38_0
openssl                   1.1.1d               he774522_3
pip                       19.3.1                   py38_0
python                    3.8.1                h5fd99cc_1
setuptools                44.0.0                   py38_0
sqlite                    3.30.1               he774522_0
vc                        14.1                 h0510ff6_4
vs2015_runtime            14.16.27012          hf0eaf9b_1
wheel                     0.33.6                   py38_0
wincertstore              0.2                      py38_0

(gsenv) C:\Users\gs>
```

- To see if a specific package is installed in an environment,
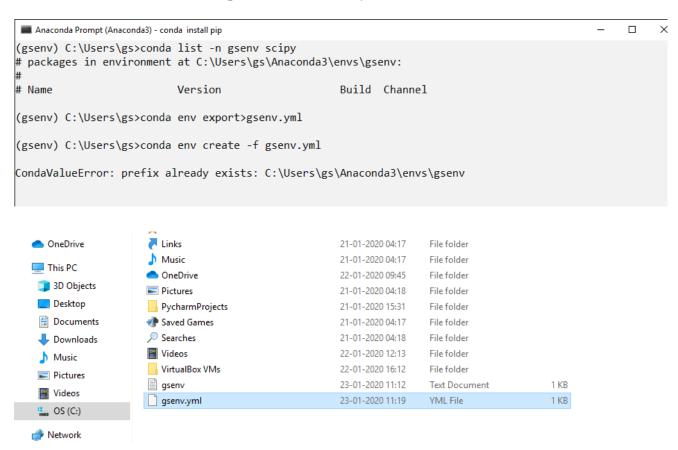
    conda list -n myenv scipy

8. Sharing an environment:

- To quickly reproduce your environment, with all of its packages and versions, use **environment.yml** file.

9. Exporting the environment file:

- First you need to activate environment which you want to export.

- Export your active environment to a new file:

  conda env export > environment.yml

```
Anaconda Prompt (Anaconda3) - conda  install pip                                          —    □    ×
(gsenv) C:\Users\gs>conda list -n gsenv scipy
# packages in environment at C:\Users\gs\Anaconda3\envs\gsenv:
#
# Name                    Version                   Build  Channel

(gsenv) C:\Users\gs>conda env export>gsenv.yml

(gsenv) C:\Users\gs>conda env create -f gsenv.yml

CondaValueError: prefix already exists: C:\Users\gs\Anaconda3\envs\gsenv
```

OneDrive	Links	21-01-2020 04:17	File folder	
This PC	Music	21-01-2020 04:17	File folder	
3D Objects	OneDrive	22-01-2020 09:45	File folder	
Desktop	Pictures	21-01-2020 04:18	File folder	
Documents	PycharmProjects	21-01-2020 15:31	File folder	
Downloads	Saved Games	21-01-2020 04:17	File folder	
Music	Searches	21-01-2020 04:18	File folder	
Pictures	Videos	22-01-2020 12:13	File folder	
Videos	VirtualBox VMs	22-01-2020 16:12	File folder	
OS (C:)	gsenv	23-01-2020 11:12	Text Document	1 KB
Network	gsenv.yml	23-01-2020 11:19	YML File	1 KB

10. Creating an environment from an environment.yml file:

- Create the environment from the environment.yml file:

  conda env create -f environment.yml

- Verify that the new environment was installed correctly:
  conda list

11. Installing Jupyter notebook in conda environment:

- To install jupyter notebook:
  ### *pip install jupyter notebook*

- To connect jupyter notebook to conda:
  ### *Conda install nb_conda*

12.   Removing an environment:

- To remove an environment, in your Terminal window or an Anaconda Prompt, run:
  conda remove --name myenv –all

- To verify that the environment was removed, in your Terminal window or an Anaconda Prompt, run:
  conda info –envs