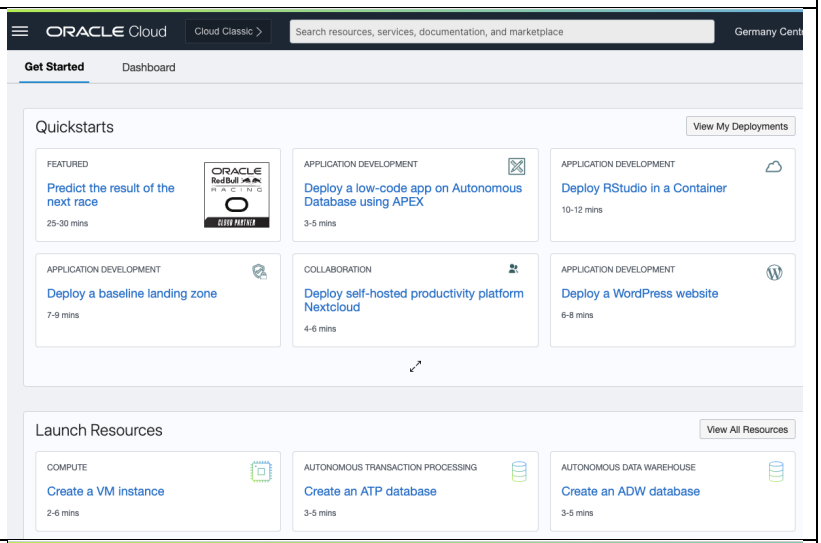
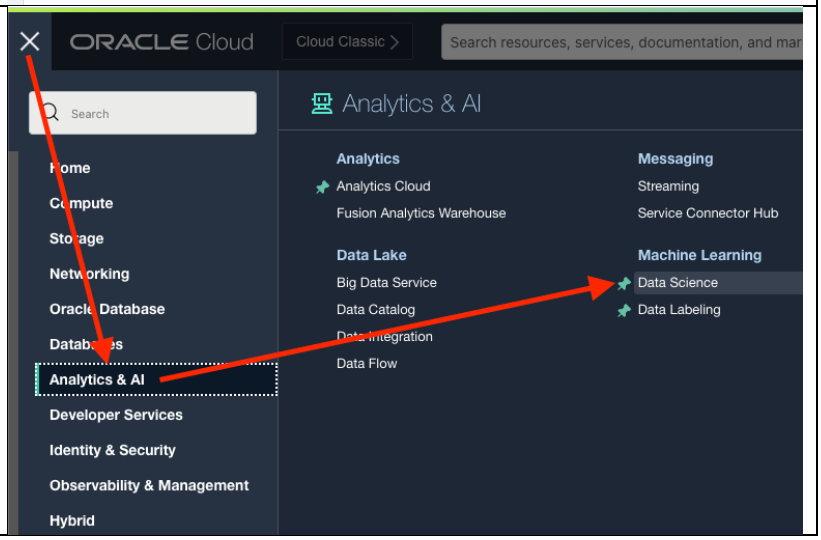
Install R Conda Environment within OCI Data Science

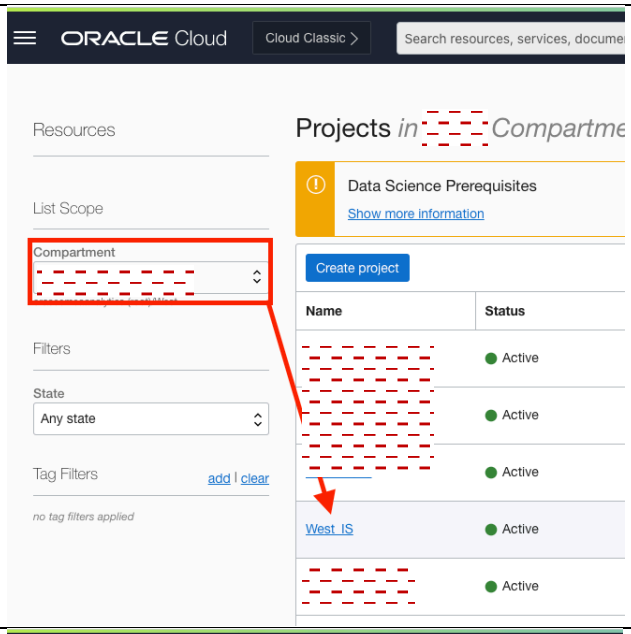
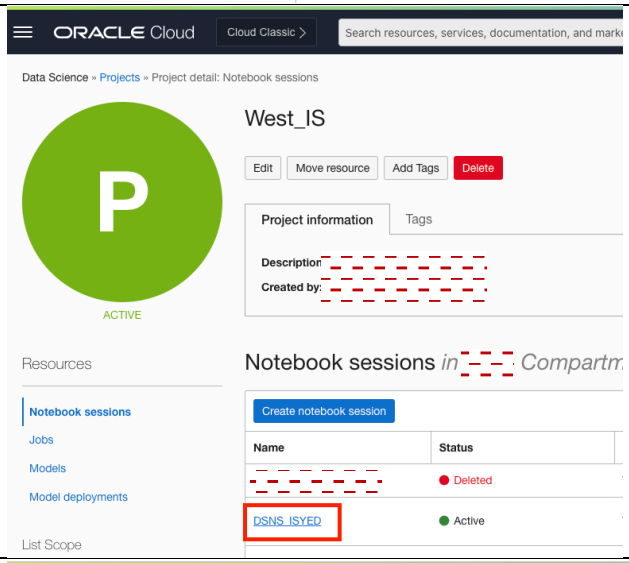
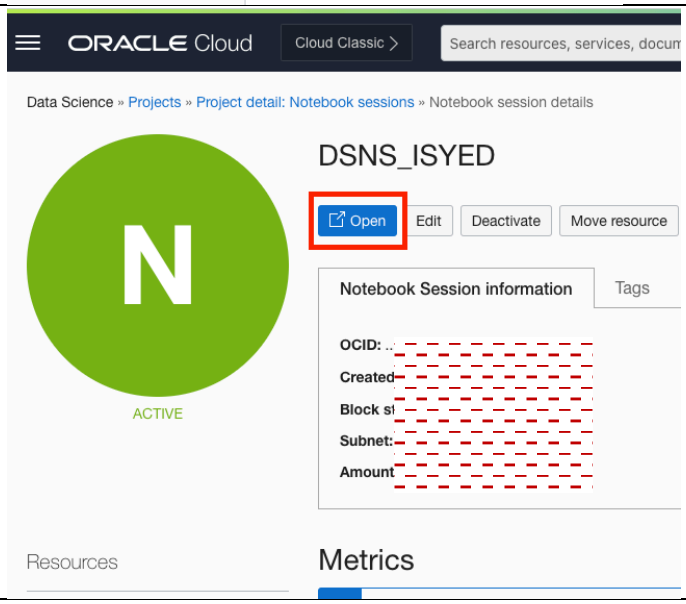
PLEASE NOTE – This is not supported and is a workaround to enable an R conda environment within OCI Data Science.

This documentation will take you through how to install an R Conda Package within OCI Data Science Service, install additional R packages and create a Jupyter Notebook based on the R Kernel.

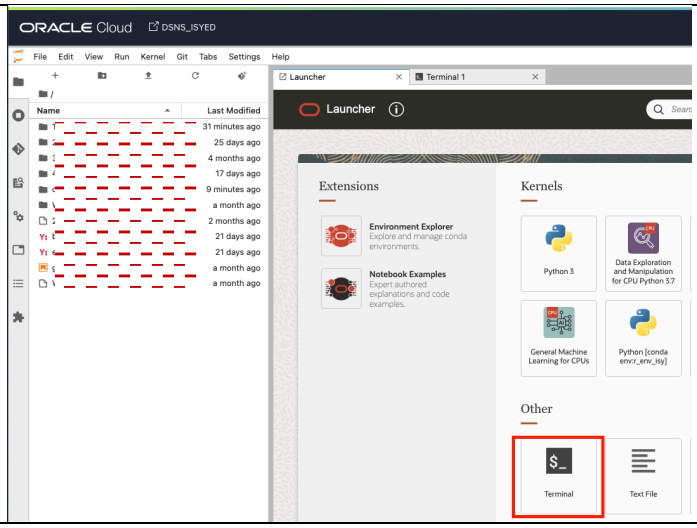
Documentation References:

- https://docs.anaconda.com/anaconda/user-guide/tasks/using-r-language/
- https://docs.conda.io/projects/conda/en/latest/commands/install.html
- https://repo.anaconda.com/pkgs/r/

Step	Screenshot
Login to your Oracle Cloud Console via: ***cloud.oracle.com***	
Navigate to your OCI Data Science Projects: ***Menu > Analytics & AI > Data Science.***	

Select your Compartment and then your Data Science Project.	
Open your desired Notebook Session.	
Click ***'Open'*** to launch your Notebook Session. If prompted with your Cloud Account Name – Click ***'Continue'***. If prompted to sign in – Click ***'Continue'***.	

From your Launcher Home Page – Click ***'Terminal'***.



We can use the following command to list our existing conda environments.

conda info --envs

```
(base) bash-4.2$ conda info --envs
# conda environments:
#
                         /home/datascience/conda/dataexpl_p37_cpu_v3
                         /home/datascience/conda/generalml_p37_cpu_v1
                         /home/datascience/conda/isy-base-p37-condav1_0
                         /home/datascience/conda/mlcpuv1
base                  *  /opt/conda

(base) bash-4.2$
(base) bash-4.2$
```

We can create a new R Conda Environment using the following command:

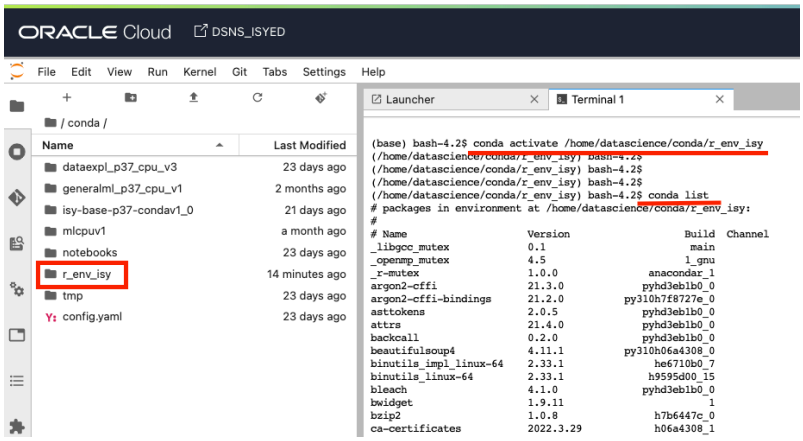
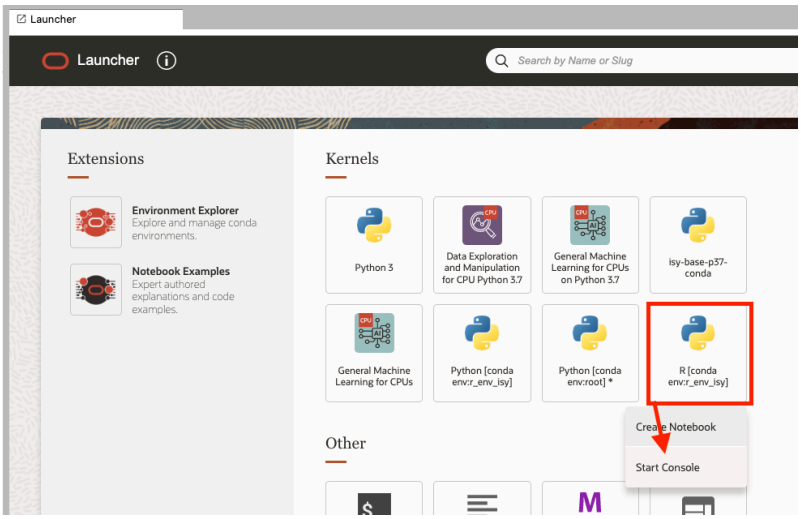
conda create -p /home/datascience/conda/r_env_isy r-essentials r-base

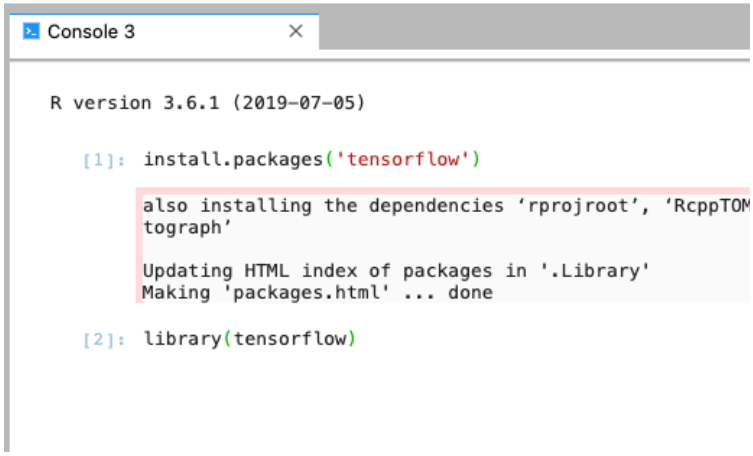
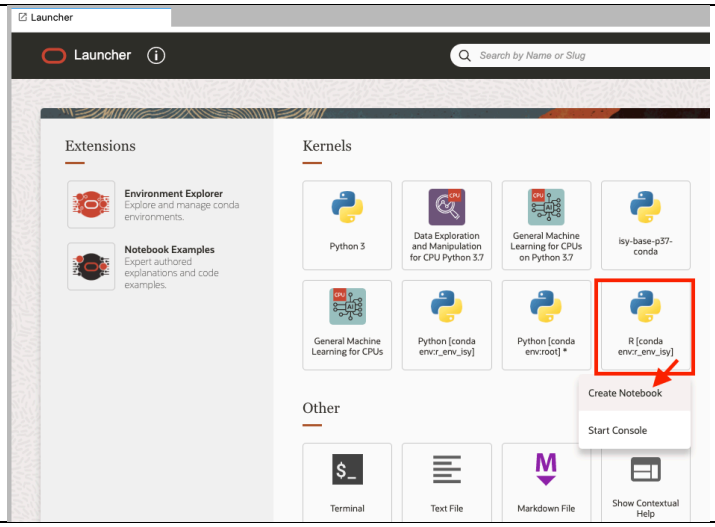
Where ***-p*** determines the location of the Conda Environment and ***r-essentials*** and ***r-base*** are the packages to install.

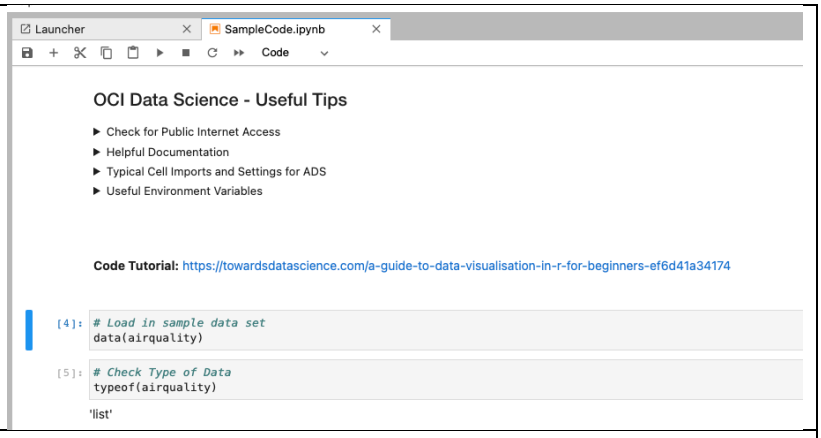
This might take a minute or two to start installing packages.

When prompted to ***'Proceed'*** enter ***y***.

```
(base) bash-4.2$
(base) bash-4.2$ conda create -p /home/datascience/conda/r_env_isy r-essentials r-base
Collecting package metadata (current_repodata.json): done
Solving environment: failed with repodata from current_repodata.json, will retry with next repodata source.
Collecting package metadata (repodata.json): done
Solving environment: done

## Package Plan ##

  environment location: /home/datascience/conda/r_env_isy

  added / updated specs:
    - r-base
    - r-essentials


The following NEW packages will be INSTALLED:

  _libgcc_mutex      pkgs/main/linux-64::_libgcc_mutex-0.1-main
  _openmp_mutex      pkgs/main/linux-64::_openmp_mutex-4.5-1_gnu
  _r-mutex           pkgs/r/linux-64::_r-mutex-1.0.0-anacondar_1



Proceed ([y]/n)? y

Preparing transaction: done
Verifying transaction: done
Executing transaction: done
#
# To activate this environment, use
#
#     $ conda activate /home/datascience/conda/r_env_isy
#
# To deactivate an active environment, use
#
#     $ conda deactivate

(base) bash-4.2$
```

As you can see in our conda install directory we see a new Conda Environment present. We can activate the Conda using: ***conda activate /home/datascience/conda/r_env_isy*** where we point to the installation directory of the Conda. We can now list all the R packages installed by using: ***conda list*** We can now exit the Terminal: ***exit***	
From the Launcher we can now see the new R Kernel based on the installed Conda Environment. Click on it and Select ***'Start Console'.***	

Within the R console we can see the Version of R Displayed at the top ***(R Version 3.6.1)*** We can start installing additional packages using install.packages('<name>') Here I installed tensorflow: ***install.packages('tensorflow')*** We can then check it is installed by trying to load in the library: ***library(tensoflow)*** Once installed we can close the console.	
Next, we can create a Jupyter Notebook. From the Launcher select the ***'R Kernel'*** and then ***'Create Notebook'***.	

Let's start writing sample code to load in some sample data and perform data manipulation.	
See to the right the sample code used in the notebook.	***Code Tutorial:*** https://towardsdatascience.com/a-guide-to-data-visualisation-in-r-for-beginners-ef6d41a34174
See to the right the output of the sample code.