Introduction to Anaconda

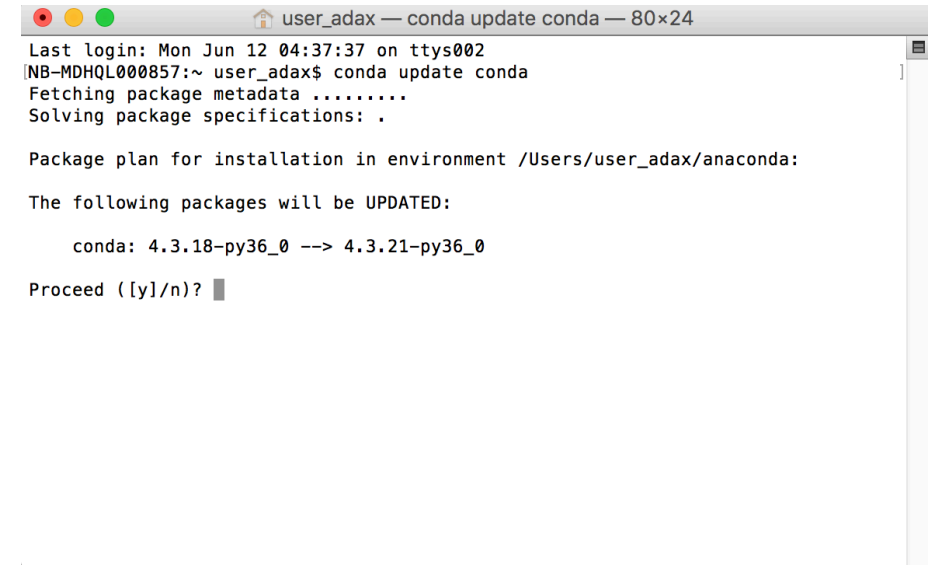Poo Kuan Hoong

What is Anaconda?

- Anaconda is a Python distribution that is particularly popular for data analysis and scientific computing
  - Open source project developed by [Continuum Analytics, Inc](#).
  - Available for Windows, Mac OS X and Linux
  - Includes many popular packages: NumPy, SciPy, Matplotlib, Pandas, IPython, Cython
  - Includes Spyder, a Python development environment
  - Includes conda, a platform-independent package manager

Installing Anaconda

- Anaconda is easy to install
- Download installer from https://www.continuum.io/download
- Execute the installer and follow the instructions

Introduction to Conda

- Simplifies installation of Python packages
  - Platform-independent package manager
  - Doesn't require administrative privileges
  - Installs non-Python library dependencies (MKL, HDF5, Boost)
  - Provides "virtual environment" capabilities
  - Many channels exist that support additional packages
  - Documentation at http://conda.pydata.org.docs/

```
Last login: Mon Jun 12 04:37:37 on ttys002
[NB-MDHQL000857:~ user_adax$ conda update conda
Fetching package metadata .........
Solving package specifications: .

Package plan for installation in environment /Users/user_adax/anaconda:

The following packages will be UPDATED:

    conda: 4.3.18-py36_0 --> 4.3.21-py36_0

Proceed ([y]/n)?
```

Installing Python packages with Conda

- It can be as easy as:

```
$ conda install wxpython
```

- Specific versions of packages can be requested:

```
$ conda install wxpython=3.0
```

- Some packages are only available in special channels:

```
$ conda install -c vpython vpython
```

- Pip can also be used:

```
$ pip install intervaltree
```

More conda operations

- Display help for conda command (and sub-commands):

```
$ conda —help
$ conda list --help
```

- List packages in current conda environment:

```
$ conda list
```

- Display all information about conda installation:

```
$ conda info -a
```

- Search for available packages (using regular expressions):

```
$ conda search '^doc' # packages that start with "doc"
```

- Update package:

```
$ conda update wxpython
```

- Uninstall package:

```
$ conda remove wxpython
```

Warning about installing/updating packages

- Installing packages into existing environment may cause problems
  - best to install all necessary packages at same time
  - install command may ask permission to update existing packages which may result in version conflicts
  - install packages into new environments if possible to avoid conflicts

Virtual Environments

- Environments allow different versions of packages on same machine
- Create environment "test" and install numpy version 1.7

```
$ conda create --name test numpy=1.7
```
- Environments must be activated On Mac OS X and Linux:

```
$ source activate test
$ python
...

$ source deactivate
```
- On Windows:

```
> activate test
> python
...
> deactivate
```