Rrrrrrr...

An intro to the magic of R!

Getting Set up!

Hopefully everyone will be set up and ready to go!

- R (www.r-project.org)
- R-studio (https://rstudio.com/products/rstudio/download/)

WARNING……

this presentation will contain coding

Quiz : How much do I know about R?

Rrrrrrrrr

- What is R?
- What can you do with r?

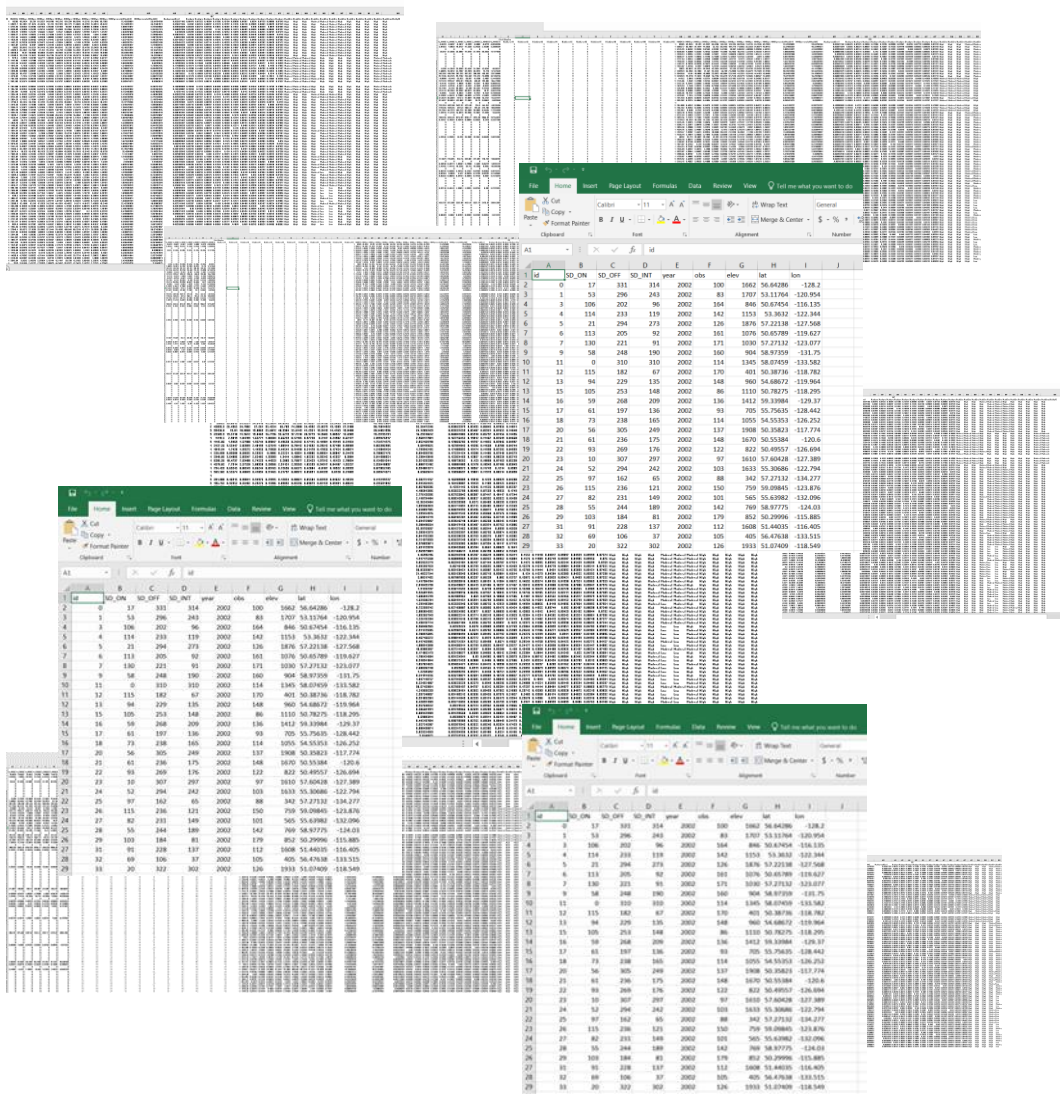
…….Getting your hands dirty!

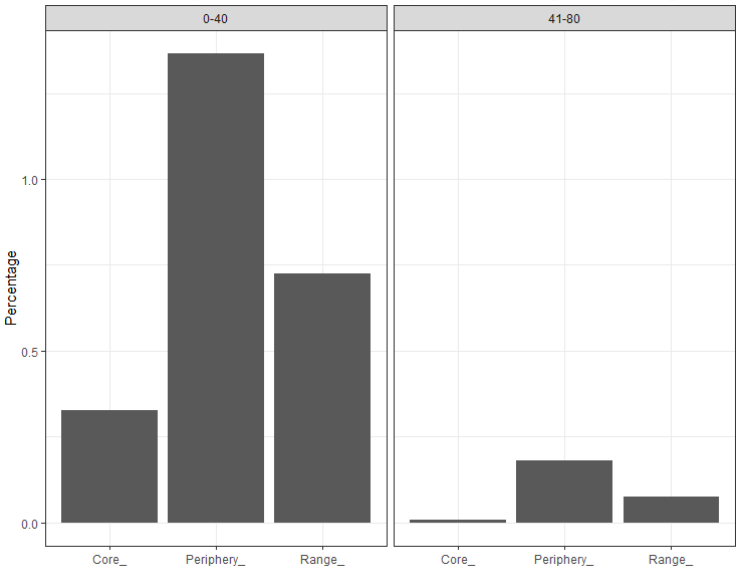
What is R?

- A language and program
- Origins in research and data analysis
- Open source
- Flexible
- State of the art …….+13909 packages
- Extensive support & community

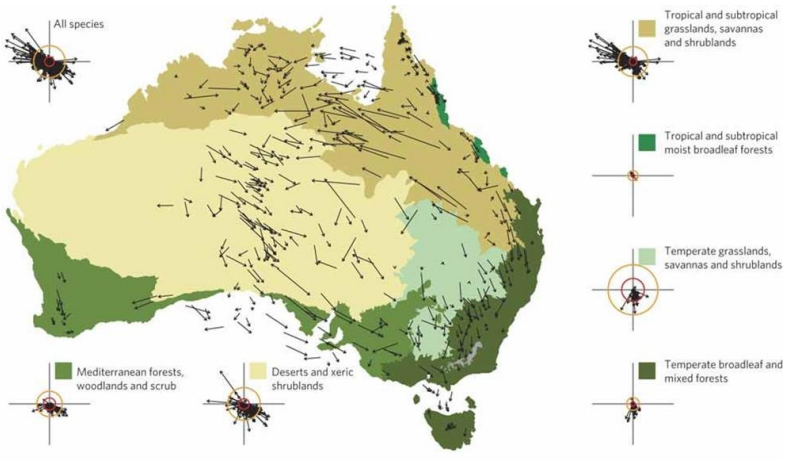
What can you do with R?

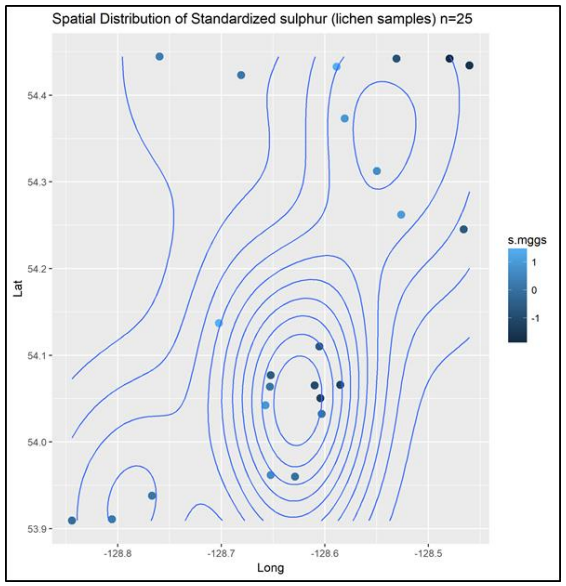
Data manipulation and error checking

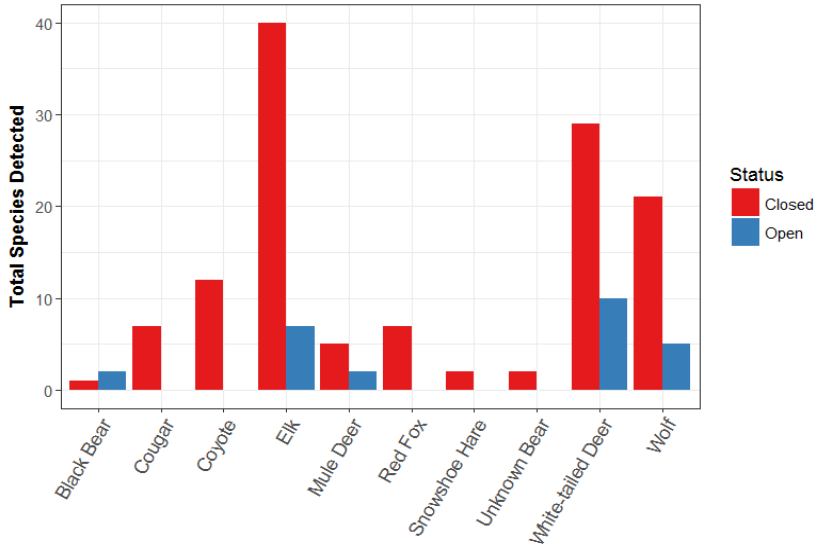


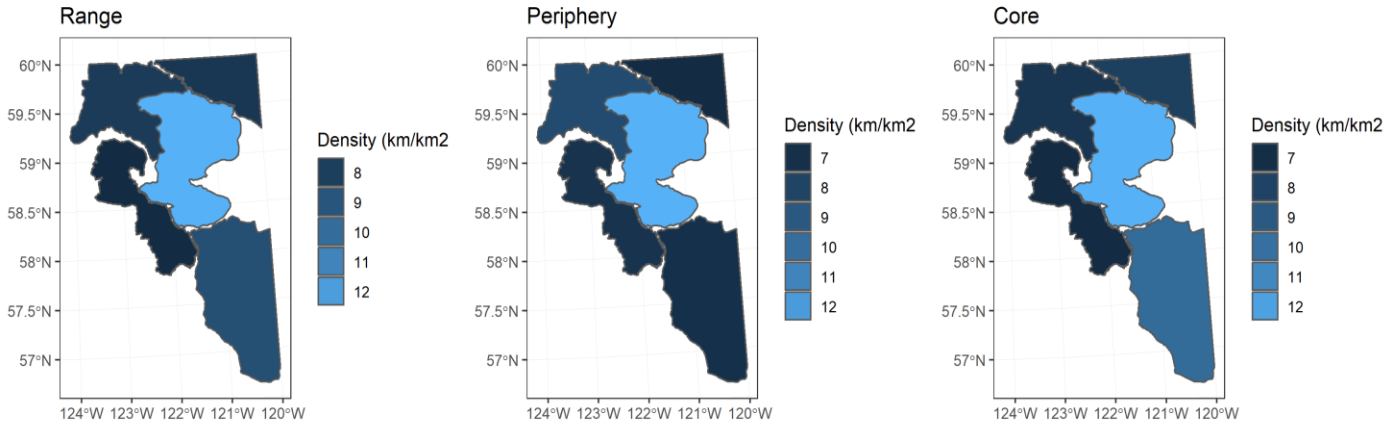


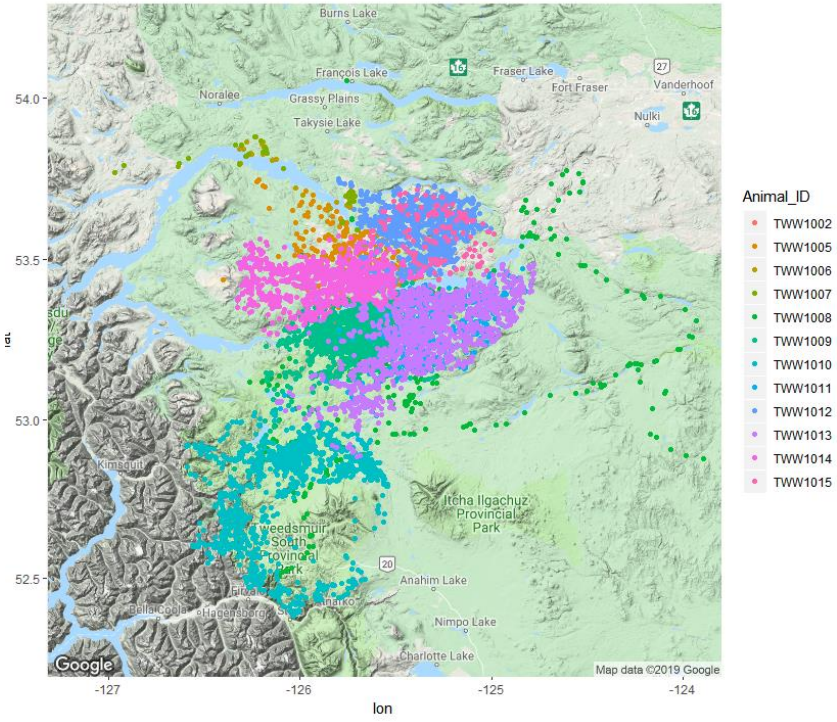
Graphing and Visualisation



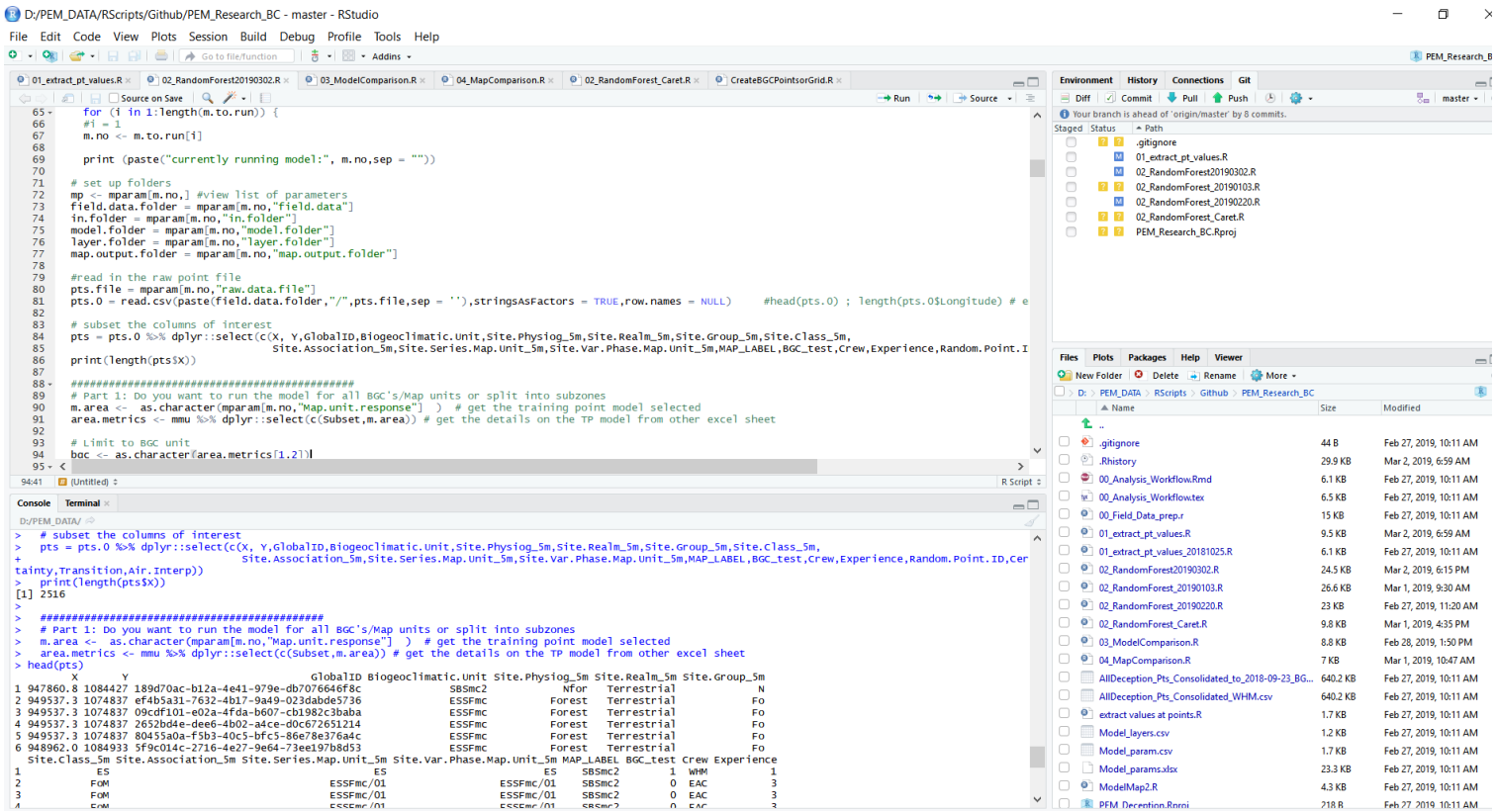








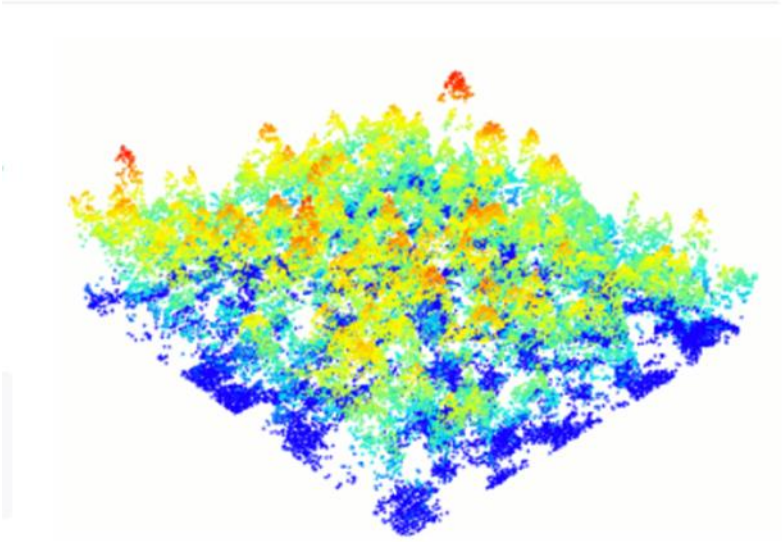
Analysis : Statistical



- Regression
- Mixed models
- Random forest
- Bayesian statistical
- Time-lapse Analysis
- Classification/ Machine Learning

Spatial Analysis /GIS

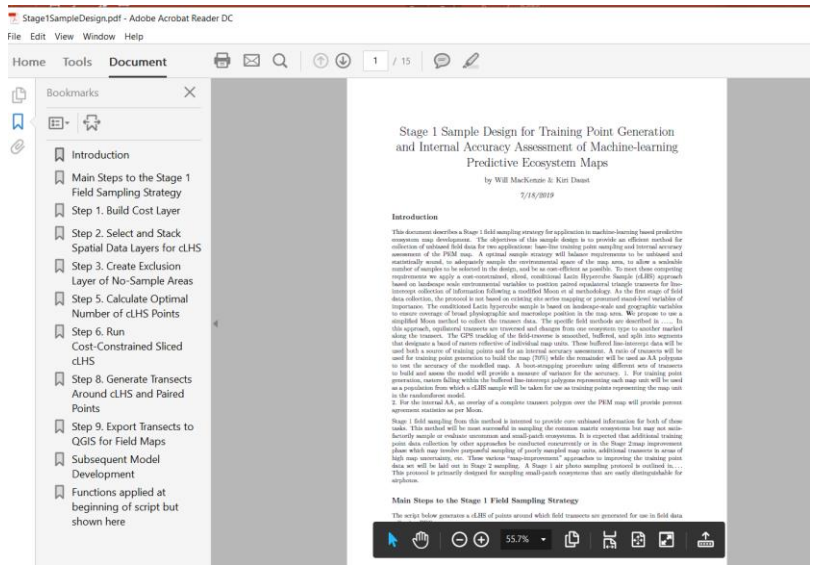
- Shapefiles / Geopackage
- Maps
- KML
- Lidar data
- Sampling Plans

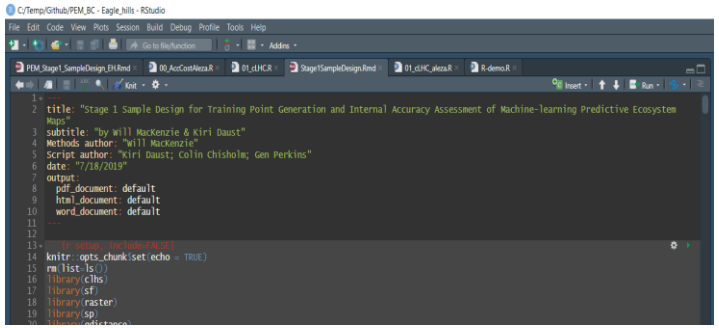


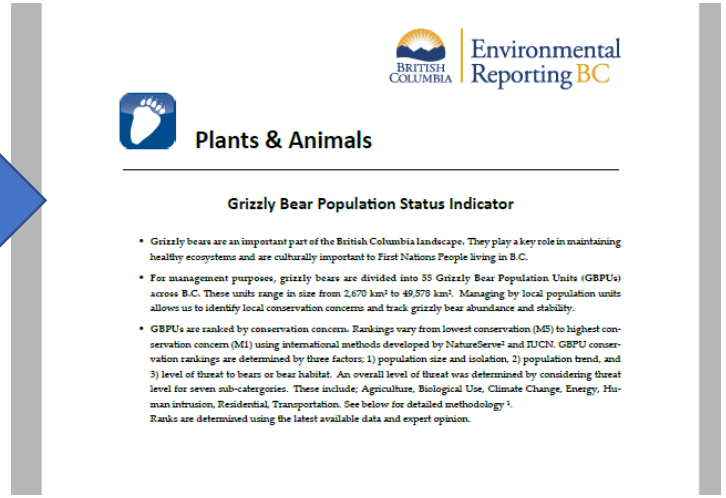
….. Stay tuned for the Demo!

Outputs: Documents

- R markdown to script your outputs
- Word
- Powerpoints / Slides







Grizzly Bear Population Status Indicator

- **Grizzly bears are an important part of the British Columbia landscape.** They play a key role in maintaining healthy ecosystems and are culturally important to First Nations People living in B.C.
- **For management purposes, grizzly bears are divided into 55 Grizzly Bear Population Units (GBPUs) across B.C.** These units range in size from 2,670 km² to 49,578 km². Managing by local population units allows us to identify local conservation concerns and track grizzly bear abundance and stability.

Outputs: Interactive data display

- Shiny App / leaflet mapping
  - Roads and Roadless Areas in British Columbia

    http://www.env.gov.bc.ca/soe/indicators/land/roads.html

Packages to use provincial datasets

BC gov specific packages :

- bcmaps
- bcdata
- tidyhydat

Why Do I Use R ?

The Bad

Steep learning curve

… but lots of resources available

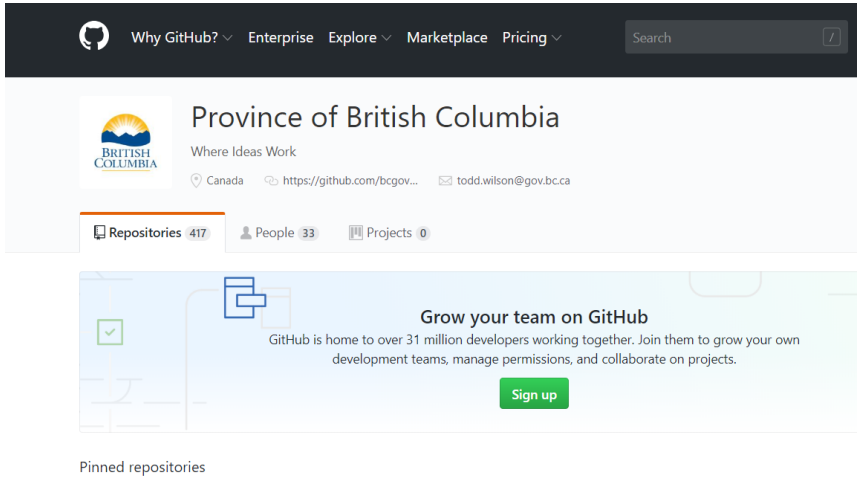
Can be slow with large datasets

… but work arounds (postgres/packages)

Why Do I Use R ?

The Good

- Efficiency !!
- Transparency & documentation
- Repeatability
- Flexible and ever expanding
- Community to share code – Github BCGov
- Compatible with other software



Lets get started……