Report on History and birth of numbers, probabilities, and statistics in different civilizations and your own culture.

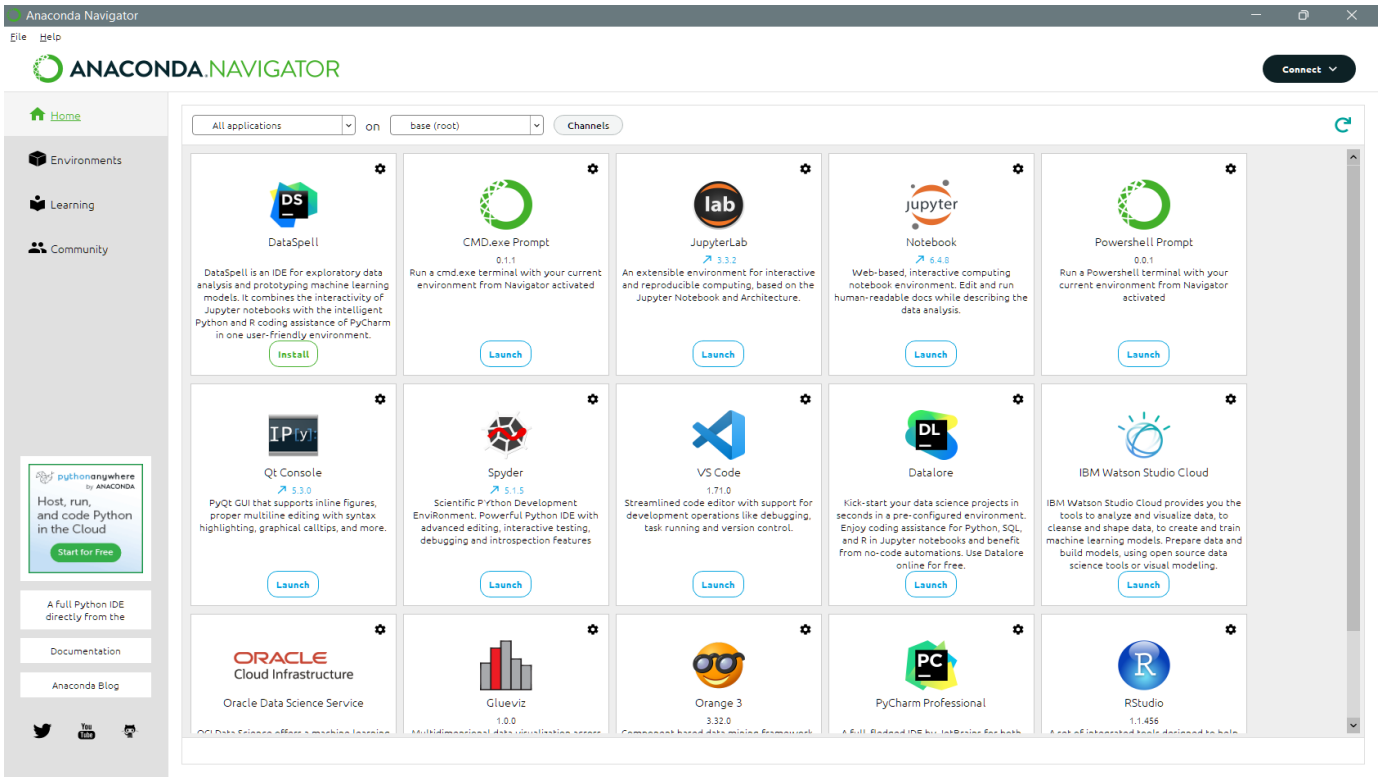
Earlier number systems made use of positional systems which allowed to re-use the same symbols by assigning them different values based on their position in that sequence. In the 7^{th} century, Indian mathematicians had developed a decimal system which was also known as a base 10 system that could represent any numbers using only 10 unique symbols. The discovery of numbers in India can be attributed to Srinivas Ramanujan and his discovery of the theory of numbers. Ramanujan discovered a property that the denominators of the fractions of Bernoulli numbers are always divisible by six. A huge advancement in the world of numbers was done in India around 500 AD; this was the invention of zero. Due to this, Indian scientists could make numbers infinitely small or infinitely big. This had a profound application in the field of astronomy, where the Indian astronomers laid out the theory that the Earth spins on its axis, and it moves around the sun.

Between the 5^{th} and 15^{th} century, the terms like "verisimils" – which meant truth like were introduced. But there wasn't any quantitative approach to the concept of probability. It was around the 15^{th} and 16^{th} centuries; the numerical dimensions of probability were developed in Europe. Initially, all the studies about probability revolved around gambling. It was later found out that the term of probability can also be used for scientific research. The theory of permutations and combinations is very essential to finding probabilities in games of chances. This aspect of permutation and combination was first developed in India. The reason is that this theory of permutation and combination was basic to Indian theatre and music. The composers at that time depended on the combination of two syllables deep (long) and short. To find all the possible combinations of these two syllables in a metre containing 'n' syllables, an Indian poet and mathematician Acharya Pingala presented a rule which basically involved a binomial expansion of those two syllables; the form of the binomial expansion was: $(a+b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$

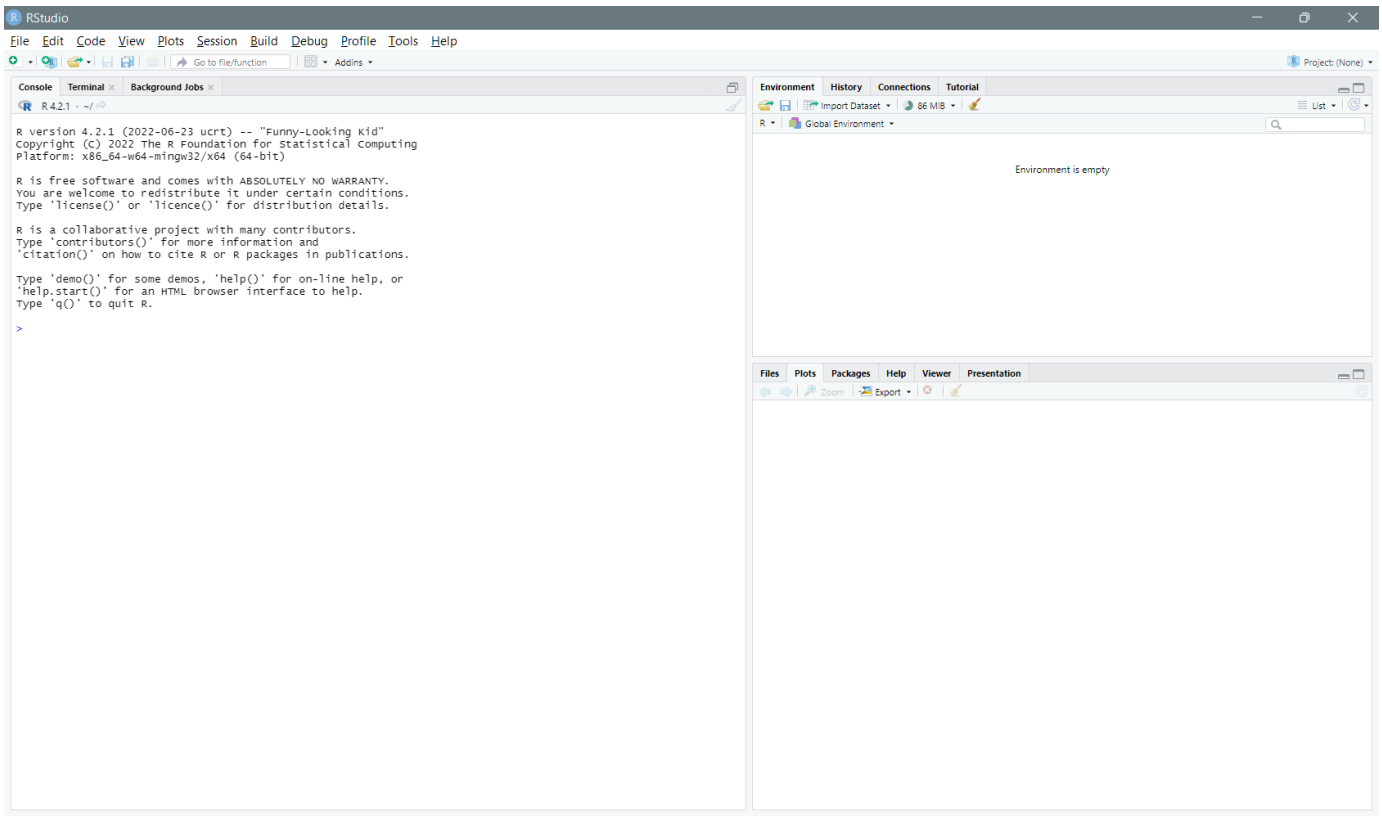
Earlier civilizations like the Han Dynasty and the Roman Empire collected data on population size, wealth and geographical extension of their empires. These were some of the initial noted uses of statistics in history. During the 5^{th} century BCE, historian Thucydides had described how the Athenians calculated the height of the wall of Platea by finding the most frequently appeared count of bricks (modern terminology being called "mode"). Then then multiplied the mode value to the height of the bricks to find the height of the ladders necessary to scale the wall. Later, mathematician Carl Friedrich Gauss made the discovery of statistical regression. "Statistics must have a clearly defined purpose, one aspect of which is scientific advancement and the other human welfare and national development" This was said by Prof. Prasanta Chandra Mahalanobis who is considered as the father of Indian Statistics. Statistics in India originated around the 300 BC. Prof. Prasanta Mahalanobis was appointed as the Statistical Advisor to the Government of India which was mainly geared towards statistical work done in various ministries, government agencies of India and to provide consultancy to various international statistical organizations. Here Prof. Prasanta Mahalanobis developed and introduced the concept of D^2, which was a statistic for classifying populations. It is a powerful technique in multivariate analysis for classification problems.

Installation screenshots:

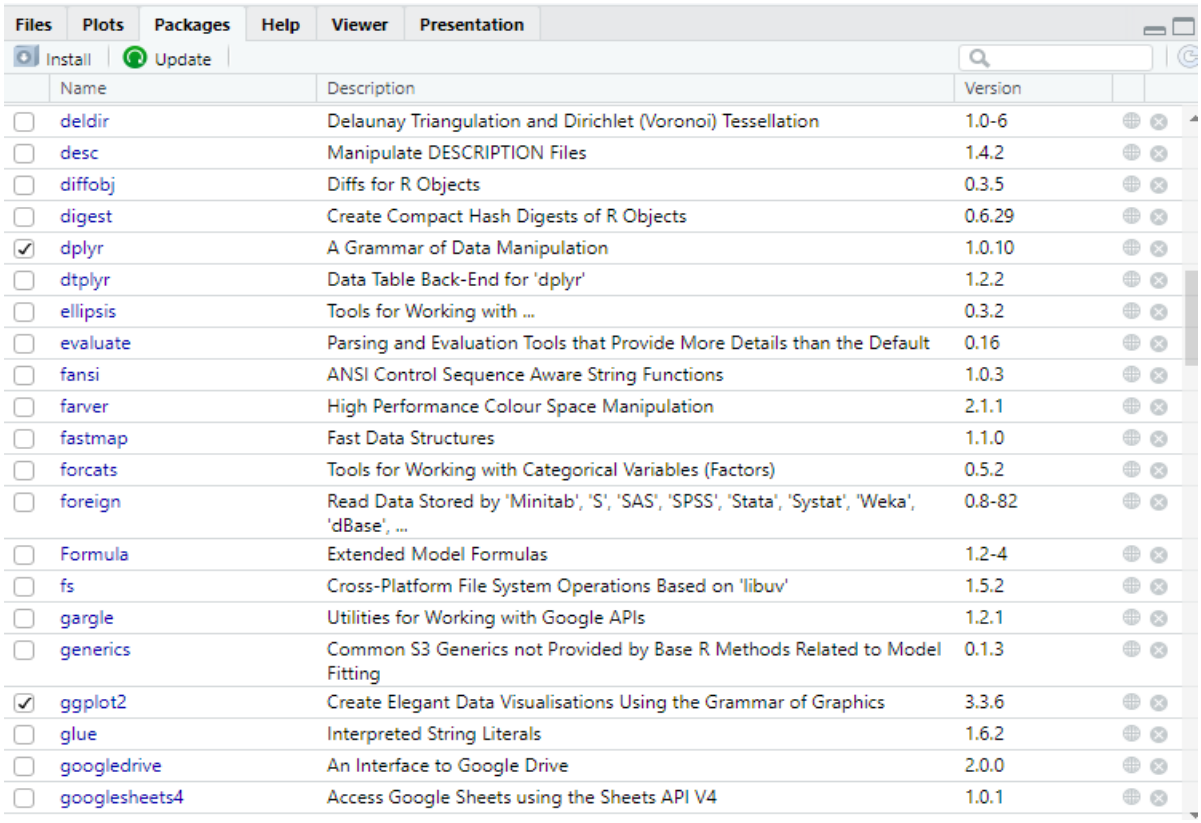
Anaconda



RStudio



Packages: dplyr and ggplot2



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	Name	Description	Version
☐	deldir	Delaunay Triangulation and Dirichlet (Voronoi) Tessellation	1.0-6
☐	desc	Manipulate DESCRIPTION Files	1.4.2
☐	diffobj	Diffs for R Objects	0.3.5
☐	digest	Create Compact Hash Digests of R Objects	0.6.29
☑	dplyr	A Grammar of Data Manipulation	1.0.10
☐	dtplyr	Data Table Back-End for 'dplyr'	1.2.2
☐	ellipsis	Tools for Working with ...	0.3.2
☐	evaluate	Parsing and Evaluation Tools that Provide More Details than the Default	0.16
☐	fansi	ANSI Control Sequence Aware String Functions	1.0.3
☐	farver	High Performance Colour Space Manipulation	2.1.1
☐	fastmap	Fast Data Structures	1.1.0
☐	forcats	Tools for Working with Categorical Variables (Factors)	0.5.2
☐	foreign	Read Data Stored by 'Minitab', 'S', 'SAS', 'SPSS', 'Stata', 'Systat', 'Weka', 'dBase', ...	0.8-82
☐	Formula	Extended Model Formulas	1.2-4
☐	fs	Cross-Platform File System Operations Based on 'libuv'	1.5.2
☐	gargle	Utilities for Working with Google APIs	1.2.1
☐	generics	Common S3 Generics not Provided by Base R Methods Related to Model Fitting	0.1.3
☑	ggplot2	Create Elegant Data Visualisations Using the Grammar of Graphics	3.3.6
☐	glue	Interpreted String Literals	1.6.2
☐	googledrive	An Interface to Google Drive	2.0.0
☐	googlesheets4	Access Google Sheets using the Sheets API V4	1.0.1