

CM1606: Computational Mathematics

Introduction to R & RStudio

Week 01 | Prashan Rathnayaka (prshan.r@iit.ac.lk)

Learning Outcomes

On completion of this lecture, students are expected to be able to:

- Grasp knowledge on A-B-C of R
- Use R Studio for basic statistical applications with additional help in future lessons and tutorials

Overview

In this lesson,

- You will be introduced to R and R Studio
- Some basic commands will be shown with examples
- A few commands for computing basic statistics will be given
- However, this is not a hands-on session.
- From Lesson 1 and Tutorial 1 onwards, more commands will be introduced as needed
- Some examples in lessons and problems of tutorials will be done with R

R Download & Installation

- Download & Install R, <https://cran.r-project.org/mirrors.html>
- Download and install RStudio, <https://posit.co/download/rstudio-desktop/>

RStudio is an integrated development environment (IDE) is a set of tools built to help you be more productive with R and Python

Introduction to RStudio

- In RStudio you see a screen divided into 4 windows
- R Markdown file?

Specific commands

- While we move on with lessons and tutorials, we will come across more commands
- We will discuss them at relevant points
- For example, percentile calculation, probability calculation, simulations, regression and prediction, hypothesis testing, analysis of variance etc. will be discussed
- In this course, no advanced features of R will be introduced
- With time and experience students can learn them on their own