Week 2: Lab

Before you start the lab spend some time getting familiar with the Lab environment as a refresher:

- Open RStudio in your lab platform.

Exercise 1:

Write a code, to calculate the BMI of 4 people, whose heights are 180cm,172cm,140cm, and 210cm, and weights are 45kg, 65kg, 82kg, and 110kg.

The formula for BMI is

$$\frac{weight(kg)}{height(m)^2}$$

Exercise 2:

Generate 100 random numbers using **rnorm** function built in R, calculate its mean, remove all values less than -1, again calculate the mean, and produce the absolute difference between the mean (use seed 2422) (hint: This is not mean absolute difference)

Exercise 3:

Generate 100 random numbers by using **rnorm** (use seed 3244), and use the round function to round the vectors unto digits 1,2,3,4 and 5. Check out the mean absolute difference from the original generated number, the output will be a vector of length 5 each is the mean absolute difference before and after rounding off. (hint: This is known as mean absolute difference (MAD))

Exercise 4:

 Create a random vector of length 100 using **rnorm** (seed 2342), and get the index of the elements that are greater than -1.234 and less than 0.7643, then spit out the sum of indexes.

Exercise 5:

Set seed 6544, generate random numbers of length ten, hundred, thousand, ten-thousand, and calculate the mean and variance of the generated vectors. (Hint: The purpose of the code is to show that as n is increasing the randomly generated number's mean and variance will tend to be 0 and 1 respectively)