



**ACADGILD**

# SESSION 3: FOUNDATIONAL R PROGRAMMING

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Assignment 2



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## 1. Introduction

This assignment will help you understand the concepts learnt in the session.

## 2. Objective

This assignment will test your skills on Data Structures in R.

## 3. Prerequisites

Not applicable.

## 4. Associated Data Files

Not applicable.

## 5. Problem Statement

1. Create an  $m \times n$  matrix with `replicate(m, rnorm(n))` with  $m=10$  column vectors of  $n=10$  elements each, constructed with `rnorm(n)`, which creates random normal numbers.
  - Then we transform it into a dataframe (thus 10 observations of 10 variables) and perform an algebraic operation on each element using a nested for loop: at each iteration, every element referred by the two indexes is incremented by a sinusoidal function, compare the vectorized and non-vectorized form of creating the solution and report the system time differences.

Ans: Refer R code 3.2



## **6. Expected Format**

1. R file should be submitted where applicable.
2. R file should be in PDF or in .r format
3. Proper screenshots of the outputs should be submitted as well
4. The r codes, if submitted in any other format, will be subjected to deduction in marks

Note: Your solution will not be entertained if it is any other format, e.g., .zip, .doc, .rtf etc.

## **7. Approximate Time to Complete Task**

30 mins.