Statistical Data Analytics with R

Term Work

Till End Term

For

MCA 1

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Graphic Era (Deemed to be University)

Prerequisite:

Basic Computer Functionality

Basic Programming Knowledge

Software Requirement: RGui for Beginners

RStudio for Advanced Level

NOTE: A Lab Record should be maintained separately by each student which should contain

- Cover Page
- Practical Record Book
- Certificate
- Index Page
- **Problem Statement**: The Question Given (typed)
- **Objective**: on completing the problem you shall be able to design or develop something you have to give the objective (typed)
- **Theory**: Definitions and elements used in command or script in brief (Typed)
- **Command or Script**: (Typed)
- **Output**: (Typed or screen shot)

TERM WORK QUESTIONS

16. Program to check if the input year is a leap year or not.
17. Create, access, modify and delete following data structures in R
    a) Vectors
    b) Lists
    c) Data Frame
    d) Factor
    e) Matrix
18. Create a function to print squares of numbers in sequence.
19. Demonstrate various Numerical, Character and Statistical functions used in R.
20. The numbers below are the first ten days of rainfall amounts in 1996.Read them in to a vector using the c() function 0.1, 0.6, 33.8, 1.9, 9.6, 4.3, 33.7, 0.3, 0.0, 0.1
    a. What was the mean rainfall, how about the standard deviation?
    b. Calculate the cumulative rainfall ('running total') over these ten days. Confirm that the last value of the vector that this produces is equal to the total sum of the rainfall.
    c. Which day saw the highest rainfall?
21. Demonstrate the various function used for Graphical Analysis like creating box plot, scatters plot, line graph and pie charts and bar chart.
22. Demonstrate Implementation of ANOVA in R Studio