

FDA Lab

Q1. Declare a data frame named as **Stu_Result** of 15 students with attributes Reg.No, Name, M1, M2, M3, M4 and M5.

- (a) Calculate the Average of Marks in another vector and append it to the **Stu_Result**.
- (b) Then append another column as Grade with respect to the table given below. The resultant data frame name should be **Updated_Stu_Result**

Average	Grade
>90	S
81-90	A
71-80	B
61-70	C
51-60	P
<=50	F

- (c) Create another data frame named as **New_Stu_Result** with the attributes Reg.No, Name, M1, M2, M3, M4, M5, Avarage, and Grade.

Q2. Create a data frame as given below

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.4	3.4	1.5	0.4	setosa
5.2	4.1	1.5	0.1	setosa
5.8	2.6	4	1.2	versicolor
5.1	3.5	1.4	0.3	setosa
6.3	2.5	4.9	1.5	versicolor
5.7	3.8	1.7	0.3	setosa
6.7	3.1	5.6	2.4	virginica
5.4	3.4	1.7	0.2	setosa
6.7	3.1	4.4	1.4	versicolor
5.5	3.5	1.3	0.2	setosa

- (a) What are the mean and median of the column “Sepal.Length”?
- (b) What is the mode of the column “Species”?
- (c) What are standard deviation and variance of the column “Petal.Width”?
- (d) What is the normalized value of 2.5 in the column “Sepal.Width” using min-max normalization having new minimum value as 11 and new maximum value is 13.
- (e) What is the normalized value of 2.5 in the column “Petal.length” using z-score normalization?

Q3 Write a R program to enter any number and calculate its factorial.

Q4. Write a R program to print all Armstrong numbers between 1 to n.

Q5. Create a data frame given below

EmployeeID	ManagerID	Title	BirthDate	Age	Marital	Gender
1	0	Chief Executive Officer	1/29/1969		S	M
2	1	Vice President of Engineering	8/1/1971		S	F
3	2	Engineering Manager	11/12/1974		M	M
4	3	Senior Tool Designer	12/23/1974		S	M
5	3	Design Engineer	9/27/1952	[[@BirthDate]]/365	M	F
6	3	Design Engineer	3/11/1959		M	M
7	3	Research and Development Manager	2/24/1987		M	M
8	4	Research and Development Engineer	6/5/1986		S	F
9	4	Research and Development Engineer	1/21/1979		M	F
10	4	Research and Development Manager	11/30/1984		M	M
11	3	Senior Tool Designer	1/17/1978		S	M
12	4	Tool Designer	7/29/1959		M	M
13	4	Tool Designer	5/28/1989		M	F
14	3	Senior Design Engineer	6/16/1979		S	M
15	3	Design Engineer	5/2/1961		M	F
16	1	Marketing Manager	3/19/1975		S	M
17	2	Marketing Assistant	5/3/1987		S	M
18	2	Marketing Specialist	3/6/1978		S	M
19	2	Marketing Assistant	1/29/1978		S	F
20	2	Marketing Assistant	3/17/1975		M	F

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- Append another column as **Age** by calculating the age from date of birth.
- Calculate the mean, median, variance and SD of age
- Display the details of Gender=Female(F)
- Display the details of Gender= Male and who are married(M)
- Count no of person having Title= Market Assistant and Marital status as Single(S)