

LAB Manual
for
Applied Statistical Analysis using R

The Neotia University

Programs:

1. Write a Program in R to find the Arithmetic Mean.
2. Write a Program in R to find the Median
3. Write a Program in R to find the Mode
4. Write a Program in R to find the Standard Deviation
5. Write a Program in R to find the Pearson's Correlation Coefficient
6. Write a Program in R to find Spearman's Rank Correlation Coefficient
7. Write a Program in R to plot the Regression Line

RStudio

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Go to file/function Addins

CardioGoodFitness of

	Product	Age	Gender	Education	MaritalStatus	Usage	Fitness	Income	Miles
1	TM195	18	Male	14	Single	3	4	29562	112
2	TM195	19	Male	15	Single	2	3	31636	75
3	TM195	19	Female	14	Partnered	4	3	30699	66
4	TM195	19	Male	12	Single	3	3	32973	85
5	TM195	20	Male	13	Partnered	4	2	35247	47
6	TM195	20	Female	14	Partnered	3	3	32973	66
7	TM195	21	Female	14	Partnered	3	3	35247	75
8	TM195	21	Male	13	Single	3	3	32973	85
9	TM195	21	Male	15	Single	5	4	35247	141
10	TM195	21	Female	15	Partnered	2	3	37521	85
11	TM195	22	Male	14	Single	3	3	36384	85
12	TM195	22	Female	14	Partnered	3	2	35247	66
13	TM195	22	Female	16	Single	4	3	36384	75
14	TM195	22	Female	14	Single	3	3	35247	75
15	TM195	23	Male	16	Partnered	3	1	38658	47
16	TM195	23	Male	16	Partnered	3	3	40932	75
17	TM195	23	Female	14	Single	2	3	34110	103
18	TM195	23	Male	16	Partnered	4	3	39795	94
19	TM195	23	Female	16	Single	4	3	36658	113
20	TM195	23	Female	16	Partnered	3	3	34110	96

Showing 1 to 21 of 180 entries, 9 total columns

Console Terminal Jobs

```
~ %  
age_mean=mean(df$age)  
> print(age_mean)  
[1] 28.78889  
income_mean=mean(df$income)  
> print(income_mean)  
[1] 53719.58  
|
```

Environment History Connections Tutorial

Global Environment

Data

- CardioGoodFitness 180 obs. of 9 variables
- df 180 obs. of 9 variables

Values

	age_mean	income_mean
	28.7888888888889	53719.5777777778

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Go to file/function Addins

CardioGoodFitness df

	Product	Age	Gender	Education	MaritalStatus	Usage	Fitness	Income	Miles
1	TM195	18	Male	14	Single	3	4	29562	112
2	TM195	19	Male	15	Single	2	3	31836	75
3	TM195	19	Female	14	Partnered	4	3	32699	66
4	TM195	19	Male	12	Single	3	3	32973	85
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6	TM195	20	Female	14	Partnered	3	3	32973	66
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8	TM195	21	Male	13	Single	3	3	32973	85
9	TM195	21	Male	15	Single	5	4	35247	141
10	TM195	21	Female	15	Partnered	2	3	37521	85
11	TM195	22	Male	14	Single	3	3	36384	85
12	TM195	22	Female	14	Partnered	3	2	35247	66
13	TM195	22	Female	16	Single	4	3	36384	75
14	TM195	22	Female	14	Single	3	3	35247	75
15	TM195	23	Male	16	Partnered	3	1	36658	47
16	TM195	23	Male	16	Partnered	3	3	40932	75
17	TM195	23	Female	14	Single	2	3	34110	103
18	TM195	23	Male	16	Partnered	4	3	39795	94
19	TM195	23	Female	16	Single	4	3	36658	113
20	TM195	23	Female	15	Partnered	3	3	36658	113
21	TM195	23	Female	15	Partnered	3	3	36658	113

Showing 1 to 21 of 180 entries, 9 total columns

Environment History Connections Tutorial

Global Environment

Data

- CardioGoodFitness 180 obs. of 9 variables
- df 180 obs. of 9 variables

Values

	Value
median_age	26
median_income	50596.5

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Console Terminal Jobs

```
~/
> median_age=median(df$age)
> print(median_age)
[1] 26
> median_income=median(df$income)
> print(median_income)
[1] 50596.5
```

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Go to file/function Addins

CardioGoodFitness

	Product	Age	Gender	Education	MaritalStatus	Usage	Fitness	Income	Miles
1	TM195	18	Male	14	Single	3	4	29562	112
2	TM195	19	Male	15	Single	2	3	31636	75
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18	TM195	23	Male	16	Partnered	4	3	39795	94
19	TM195	23	Female	16	Single	4	3	36658	113
20	TM195	23	Female	16	Partnered	3	3	34110	94

Showing 1 to 21 of 180 entries, 9 total columns

Console Terminal Jobs

```
library(modest)
> mode_age=mvf(df$age)
> mode_income=mvf(df$income)
> print(mode_age, mode_income)
Error in print.default(mode_age, mode_income) :
  invalid printing digits 45480
> print(mode_age)
[1] 25
> print(mode_income)
[1] 45480
```

Environment History Connections Tutorial

Global Environment

Data

- CardioGoodFitness 180 obs. of 9 variables
- df 180 obs. of 9 variables

Values

- mode_age 25
- mode_income 45480

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Go to file/function Addins

CardioGoodFitness df

	Product	Age	Gender	Education	MaritalStatus	Usage	Fitness	Income	Miles
1	TM195	18	Male	14	Single	3	4	29562	112
2	TM195	19	Male	15	Single	2	3	31836	75
3	TM195	19	Female	14	Partnered	4	3	30699	66
4	TM195	19	Male	12	Single	3	3	32873	85
5	TM195	20	Male	13	Partnered	4	2	35347	47
6	TM195	20	Female	14	Partnered	3	3	32973	66
7	TM195	21	Female	14	Partnered	3	3	35247	75
8	TM195	21	Male	13	Single	3	3	32973	85
9	TM195	21	Male	15	Single	5	4	35247	141
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12	TM195	22	Female	14	Partnered	3	2	35247	66
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14	TM195	22	Female	14	Single	3	3	35247	75
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18	TM195	23	Male	16	Partnered	4	3	39795	94
19	TM195	23	Female	16	Single	4	3	38658	113
20	TM195	23	Female	16	Single	3	3	38658	113
21	TM195	23	Female	16	Single	3	3	38658	113
22	TM195	23	Female	16	Single	3	3	38658	113
23	TM195	23	Female	16	Single	3	3	38658	113
24	TM195	23	Female	16	Single	3	3	38658	113
25	TM195	23	Female	16	Single	3	3	38658	113
26	TM195	23	Female	16	Single	3	3	38658	113
27	TM195	23	Female	16	Single	3	3	38658	113
28	TM195	23	Female	16	Single	3	3	38658	113
29	TM195	23	Female	16	Single	3	3	38658	113
30	TM195	23	Female	16	Single	3	3	38658	113

Showing 1 to 21 of 180 entries, 9 total columns

Environment History Connections Tutorial

Global Environment

Data

- cardiogoodfitness 180 obs. of 9 variables
- df 180 obs. of 9 variables

Values

	std_age	std_income
1	6.943498	16506.6842262386

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Console Terminal Jobs

```
> std_age=sd(df$age)
> print(std_age)
[1] 6.943498
> std_income=sd(df$income)
> print(std_income)
[1] 16506.68
```

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Go to file/function Addins

CardioGoodFitness

	Product	Age	Gender	Education	MaritalStatus	Usage	Fitness	Income	Miles
1	TM195	18	Male	14	Single	3	4	29562	112
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18	TM195	23	Male	16	Partnered	4	3	39795	94
19	TM195	23	Female	16	Single	4	3	38658	113
20	TM195	23	Female	16	Partnered	3	3	34110	99

Showing 1 to 21 of 180 entries, 9 total columns

Console

```
> cor_age_inc=cor(df$Age,df$Income)
> print(cor_age_inc)
[1] 0.5134137
> cor_age_mile=cor(df$Age,df$Miles)
> print(cor_age_mile)
[1] 0.03661757
> cor_inc_mile=cor(df$Income,df$Miles)
> print(cor_inc_mile)
[1] 0.5434733
>
```

Environment History Connections Tutorial

Global Environment

Data

- CardioGoodFitness 180 obs. of 9 variables
- df 180 obs. of 9 variables

Values

- cor_age_inc 0.513413685120833
- cor_age_mile 0.0366175690582711
- cor_inc_mile 0.54347325894583

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Go to file/function Addins

CardioGoodFitness

	Product	Age	Gender	Education	MaritalStatus	Usage	Fitness	Income	Miles
1	TM195	18	Male	14	Single	3	4	29562	112
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16	TM195	23	Male	16	Partnered	3	3	40932	75
17	TM195	23	Female	14	Single	2	3	34110	103
18	TM195	23	Male	16	Partnered	4	3	39795	94

Showing 1 to 20 of 180 entries, 9 total columns

Environment History Connections Tutorial

Global Environment

Data

- cardioGoodFitness 180 obs. of 9 variables
- coef List of 12
- df 180 obs. of 9 variables

values

cor_edu_age 0.332769383151036

Files Plots Packages Help Viewer

Console Terminal Jobs

```
> cor_edu_age=cor(df$Age,df$Education, method="spearman")
> print(cor_edu_age)
[1] 0.3327694
> |
```


