

R version 3.3.0 (2016-05-03) -- "Supposedly Educational"
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Platform: x86_64-w64-mingw32/x64 (64-bit)

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Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

```
> Name<- "Nishant Sinha"
> Sys.time()
[1] "2016-05-29 02:25:43 CDT"
> help.start()
starting httpd help server ... done
If nothing happens, you should open
'http://127.0.0.1:28037/doc/html/index.html' yourself
Making 'packages.html' ... done
> x<-rnorm(50)
> y<-rnorm(x)
> plot(x,y)
> save.image("D:\\Study_material_MS_MIS\\summer16\\workspace\\.RData")
> ls()
[1] "Name" "x"      "y"
> rm(x,y)
> ls()
[1] "Name"
> x<-1:20
> w<-1+sqrt(x)/2
> dummy<-data.frame(x=x,y=x+rnorm(x)*w)
> dummy
   x      y
1  1 -0.2265314
2  2  1.4123523
3  3  5.5098389
4  4  3.3575567
5  5  5.0877364
6  6  8.7943351
7  7  7.5369758
8  8  4.1208377
9  9 12.2238366
10 10 12.1448310
11 11  8.4236513
12 12 15.0174489
13 13 14.6557620
14 14 17.1385289
15 15 13.1252696
16 16 17.2386893
17 17 10.2853784
18 18 19.9290979
19 19 19.4112305
20 20 27.1496463
> fm<-lm(y~x,data=dummy)
> summary(fm)
```

Call:
lm(formula = y ~ x, data = dummy)

Residuals:

	Min	1Q	Median	3Q	Max
	-7.8185	-0.9148	0.1961	2.2666	5.8209

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.1700	1.4227	-0.119	0.906
x	1.0749	0.1188	9.051	4.05e-08 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 3.063 on 18 degrees of freedom

Multiple R-squared: 0.8199, Adjusted R-squared: 0.8098

F-statistic: 81.92 on 1 and 18 DF, p-value: 4.05e-08

> fml<-lm(y~x,data=dummy,weight=1/w^2)

> summary(fml)

Call:

lm(formula = y ~ x, data = dummy, weights = 1/w^2)

Weighted Residuals:

Min	1Q	Median	3Q	Max
-2.56540	-0.44525	0.07668	0.79570	1.78136

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.2520	1.0068	-0.25	0.805
x	1.0819	0.1027	10.54	3.96e-09 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.113 on 18 degrees of freedom

Multiple R-squared: 0.8605, Adjusted R-squared: 0.8528

F-statistic: 111 on 1 and 18 DF, p-value: 3.965e-09

> attach(dummy)

The following object is masked _by_ .GlobalEnv:

x

> lrf<-lowess(x,y)

> plot(x,y)

> libes(x,lrf\$y)

Error: could not find function "libes"

> lines(x,lrf\$y)

> abline(0,1,lty=3)

> abline(coef(fm))

> abline(coef(fml),col="red")

> detach()

> ls()

[1] "dummy" "fm" "fml" "lrf" "Name" "w" "x"

> plot(fitted(fm), resid(fm), xlab="Fitted values",ylab="Residuals",main="Residuals vs Fitted")

> qqnorm(resid(fm), main="Residuals Rankit Plot")

> rm(fm, fml, lrf, x, dummy)

> filepath <- system.file("data", "morley.tab" , package="datasets")

> filepath

[1] "C:/PROGRA~1/R/R-33~1.0/library/datasets/data/morley.tab"

> file.show(filepath)

> mm <- read.table(filepath)

> mm

	Expt	Run	Speed
001	1	1	850
002	1	2	740
003	1	3	900
004	1	4	1070
005	1	5	930
006	1	6	850
007	1	7	950
008	1	8	980
009	1	9	980
010	1	10	880
011	1	11	1000

012	1	12	980
013	1	13	930
014	1	14	650
015	1	15	760
016	1	16	810
017	1	17	1000
018	1	18	1000
019	1	19	960
020	1	20	960
021	2	1	960
022	2	2	940
023	2	3	960
024	2	4	940
025	2	5	880
026	2	6	800
027	2	7	850
028	2	8	880
029	2	9	900
030	2	10	840
031	2	11	830
032	2	12	790
033	2	13	810
034	2	14	880
035	2	15	880
036	2	16	830
037	2	17	800
038	2	18	790
039	2	19	760
040	2	20	800
041	3	1	880
042	3	2	880
043	3	3	880
044	3	4	860
045	3	5	720
046	3	6	720
047	3	7	620
048	3	8	860
049	3	9	970
050	3	10	950
051	3	11	880
052	3	12	910
053	3	13	850
054	3	14	870
055	3	15	840
056	3	16	840
057	3	17	850
058	3	18	840
059	3	19	840
060	3	20	840
061	4	1	890
062	4	2	810
063	4	3	810
064	4	4	820
065	4	5	800
066	4	6	770
067	4	7	760
068	4	8	740
069	4	9	750
070	4	10	760
071	4	11	910
072	4	12	920
073	4	13	890
074	4	14	860
075	4	15	880
076	4	16	720
077	4	17	840
078	4	18	850
079	4	19	850
080	4	20	780
081	5	1	890

```

082      5      2      840
083      5      3      780
084      5      4      810
085      5      5      760
086      5      6      810
087      5      7      790
088      5      8      810
089      5      9      820
090      5     10      850
091      5     11      870
092      5     12      870
093      5     13      810
094      5     14      740
095      5     15      810
096      5     16      940
097      5     17      950
098      5     18      800
099      5     19      810
100      5     20      870
> mm$Expt <- factor(mm$Expt)
> mm$Run<-factor(mm$Run)
> attach(mm)
> plot(Expt, Speed, main="Speed of Light Data", xlab="Experiment No.")
> fm <- aov(Speed ~ Run + Expt, data=mm)
> summary(fm)

          Df Sum Sq Mean Sq F value   Pr(>F)
Run          19 113344      5965    1.105 0.36321
Expt          4  94514      23629    4.378 0.00307 **
Residuals    76 410166       5397

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

> fm0 <- update(fm, . ~ . - Run)
> anova(fm0, fm)
Analysis of Variance Table

Model 1: Speed ~ Expt
Model 2: Speed ~ Run + Expt
  Res.Df    RSS Df Sum of Sq    F Pr(>F)
1      95 523510
2      76 410166 19    113344 1.1053 0.3632
> detach()
> rm(fm, fm0)
> x <- seq(-pi, pi, len=50)
> y<-x
> f <- outer(x, y, function(x, y) cos(y)/(1 + x^2))
> oldpar <- par(no.readonly = TRUE)
> par(pty="s")
> contour(x, y, f)
> contour(x, y, f, nlevels=15, add=TRUE)
> fa <- (f-t(f))/2
> contour(x, y, fa, nlevels=15)
> par(oldpar)
> image(x, y, f)
> image(x, y, fa)
> objects(); rm(x, y, f, fa)
[1] "f"      "fa"      "filepath" "mm"      "Name"    "oldpar"  "w"
[8] "x"      "y"
> th <- seq(-pi, pi, len=100)
> z <- exp(1i*th)
> par(pty="s")
> plot(z, type="l")
> w <- rnorm(100) + rnorm(100)*1i
> w <- ifelse(Mod(w) > 1, 1/w, w)
> plot(w, xlim=c(-1,1), ylim=c(-1,1), pch="+", xlab="x", ylab="y")
> lines(z)
> w <- sqrt(runif(100))*exp(2*pi*runif(100)*1i)
> plot(w, xlim=c(-1,1), ylim=c(-1,1), pch="+", xlab="x", ylab="y")
> lines(z)
> w <- sqrt(runif(100))*exp(2*pi*runif(100)*1i)
> plot(w, xlim=c(-1,1), ylim=c(-1,1), pch="+", xlab="x", ylab="y")

```

```
> lines(z)
> contour(x, y, f, nlevels=15, add=TRUE)
Error in contour(x, y, f, nlevels = 15, add = TRUE) :
  object 'x' not found
>
```