Descriptive Statistics With R Software

Graphics and Plots

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Subdivided Bar Plots and Pie Diagrams

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Subdivided or component bar diagram

Subdivided or component bar diagram divides the total magnitude of variables into various parts.

Subdivided or component bar diagram

Example

The data on the number of customers visiting 3 shops during 10-11 AM on 4 consecutive days is as follows:

No. of customers	Shop 1	Shop 2	Shop 3
Day 1	2	20	30
Day 2	26	53	40
Day 3	42	15	25
Day 4	30	75	100

```
cust = matrix(nrow=4, ncol=3, data =c(2,20,
30,26,53,40,42,15,25,30,75,100), byrow = T)

> cust
     [,1] [,2] [,3]
[1,]    2   20   30
[2,]   26   53   40
[3,]   42   15   25
[4,]   30   75  100
```

Subdivided or component bar diagram

Usage

```
barplot(variable in matrix format)
```

will create a subdivided or component bar diagram with columns of matrix as bars.

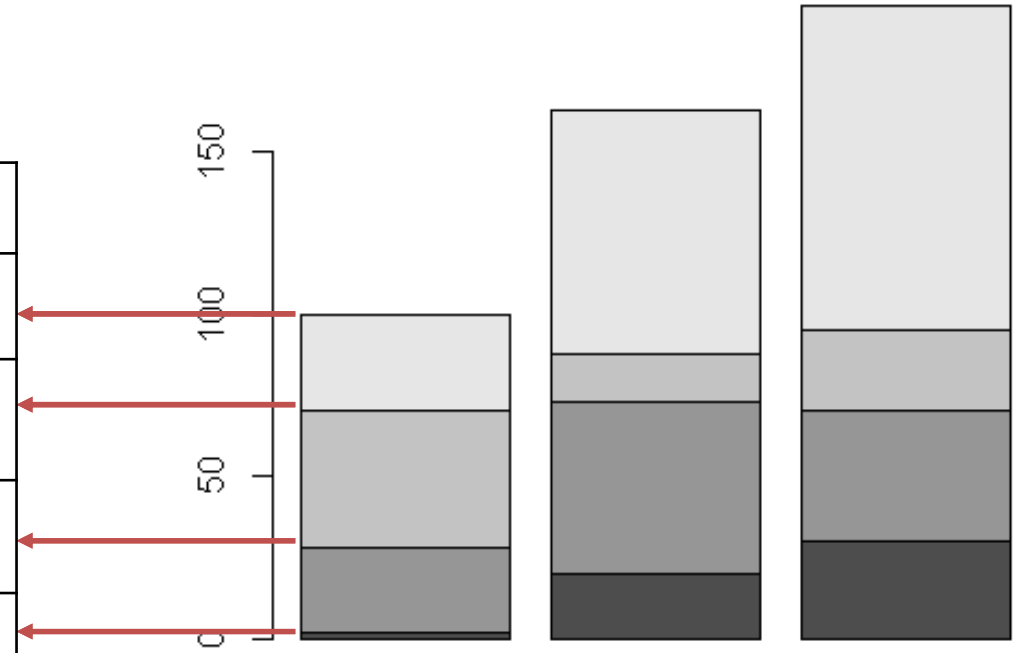
Sections inside bars indicate the values in cumulative form.

Subdivided or component bar diagram

```
> barplot(cust)
```

No. of customers	Shop 1	Shop 2	Shop 3
Day 1	2	20	30
Day 2	26	53	40
Day 3	42	15	25
Day 4	30	75	100

Shop 1
2+26+42+30 = 100
2+26+42 = 70
2+26 = 28
2

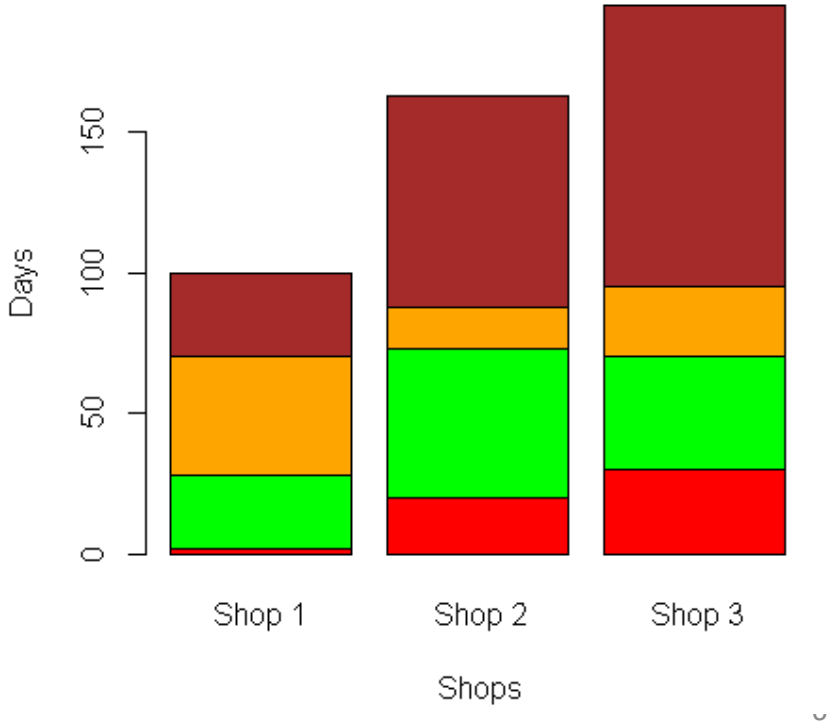


Subdivided or component bar diagram

Adding labels and colours

```
> barplot(cust, names.arg=c("Shop 1", " Shop
2", " Shop 3"), xlab = " Shops", ylab = "Days",
col= c("red","green","orange","brown"))
```

No. of customers	Shop 1	Shop 2	Shop 3
Day 1	2	20	30
Day 2	26	53	40
Day 3	42	15	25
Day 4	30	75	100



Pie diagram

Pie charts visualize the absolute and relative frequencies.

A pie chart is a circle partitioned into segments where each of the segments represents a category.

The size of each segment depends upon the relative frequency.

The size of each segment is determined by the angle

(relative frequency X 360^0).

Pie diagram

Usage

```
pie(x, labels = names(x), …)

pie(x, labels, radius, main, col, clockwise)
```

Details

`x` : **Vector containing the numeric values.**

`labels` : **Gives description to the slices.**

`radius` : **Indicates the radius of the circle of the pie chart.**

(Assume values between –1 and +1).

`main` : **Title of the chart.**

`col` : **Provides colours to the slices.**

`clockwise` : **Used to indicate if the slices are drawn clockwise or anti clockwise by using logical `FALSE` or `TRUE`.**

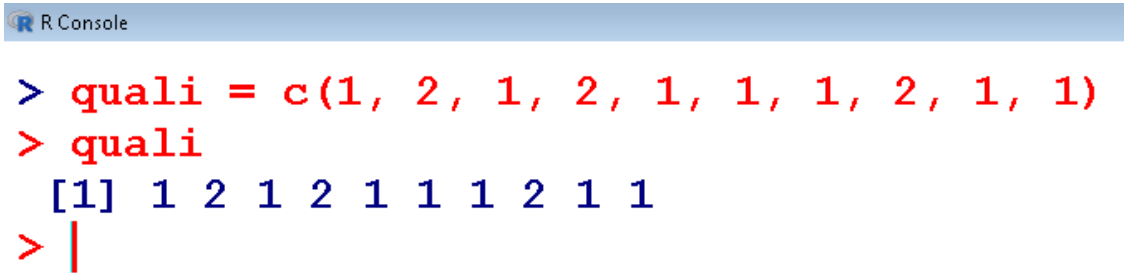
Pie diagram

Example

Code of qualification of 10 persons by using, say 1 for graduate (G) and 2 for non-graduate (N).

G,	N,	G,	N,	G,	G,	G,	N,	G,	G
1,	2,	1,	2,	1,	1,	1,	2,	1,	1

```
> quali = c(1, 2, 1, 2, 1, 1, 1, 2, 1, 1)
> quali
 [1] 1 2 1 2 1 1 1 2 1 1
```

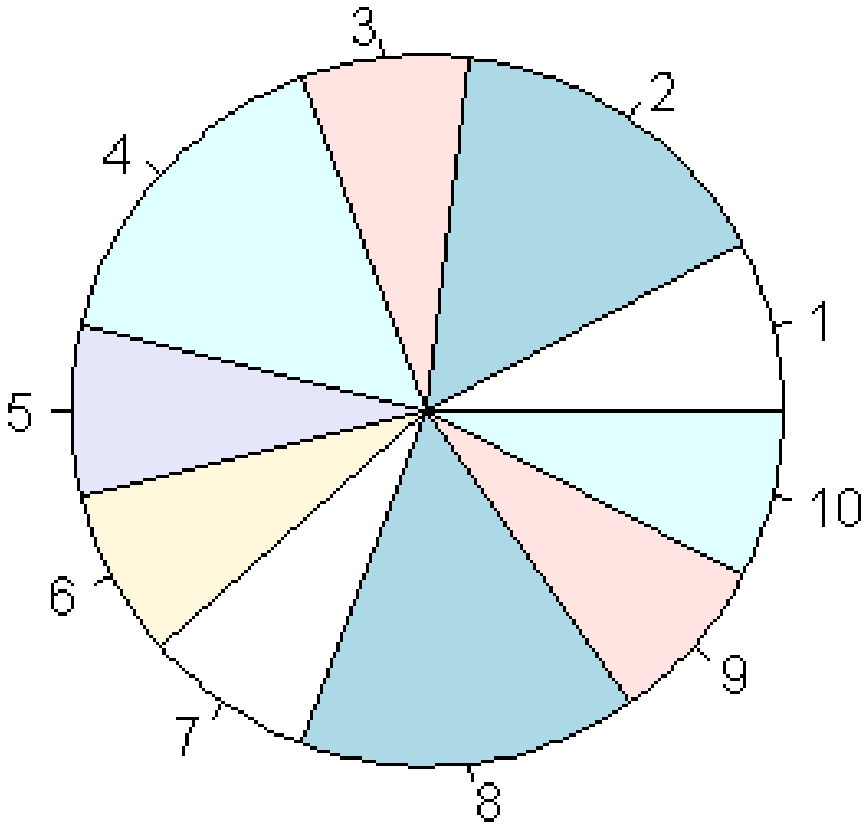


Pie diagram

Example

```
> pie(quali)
```

Do you want this?

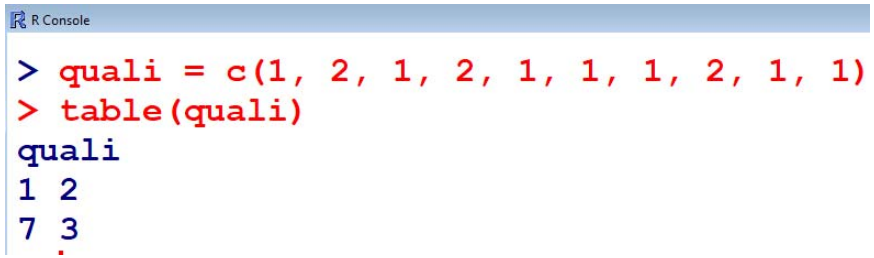


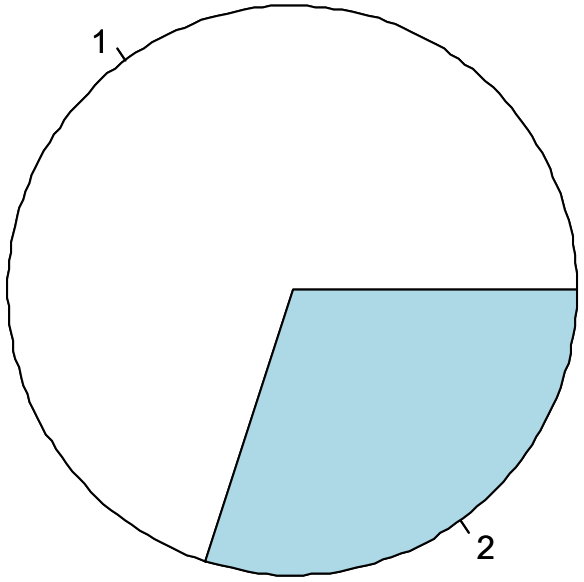
Pie diagram

Example

```
> table(quali)
quali
1 2
7 3

> pie(table(quali))
```





Pie diagram

Example : Adding labels and colours

```
> pie(table(quali), labels = c("Graduate",
"Nongraduate"), main = "Persons with
Qualification", col=c("red", "blue"))
```

Pie diagram

Example

There are three salespersons in a shop. They are denoted as 1, 2 and 3. Which of the salesperson serves which of the first 100 customers is recorded as follows:

1,1,2,1,2,3,2,2,3,3,3,1,2,3,2,2,3,1,1,3,3,1,2,1,3,3,3,2,2,2,2,1,2,2,1,1,

1,3,2,2,1,2,3,2,2,1,2,3,3,2,1,2,2,3,1,1,2,1,2,3,2,3,2,2,3,1,2,3,3,3,2,1,

1,1,2,1,1,2,1,2,3,3,1,2,3,3,2,1,2,3,2,1,3,2,2,2,2,3,2,2

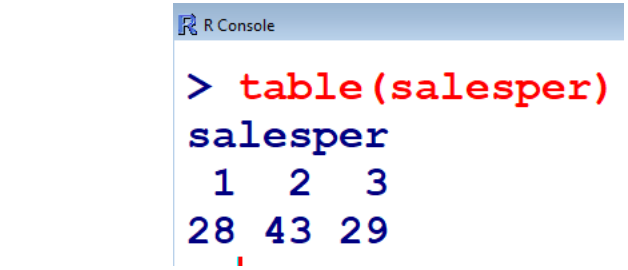
```
salesper = c(1,1,2,1,2,3,2,2,3,3,3,1,2,3,2,2,3,
1,1,3,3,1,2,1,3,3,3,2,2,2,2,1,2,2,1,1,1,3,2,2,
1,2,3,2,2,1,2,3,3,2,1,2,2,3,1,1,2,1,2,3,2,3,2,
2,3,1,2,3,3,3,2,1,1,1,2,1,1,2,1,2,3,3,1,2,3,3,
2,1,2,3,2,1,3,2,2,2,2,3,2,2)
```

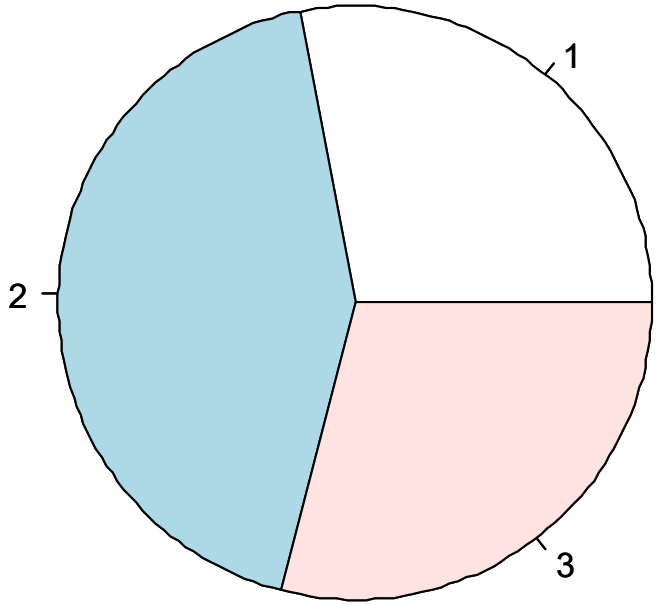
Pie diagram

Example

```
> table(salesper)
salesper
 1  2  3
28 43 29

> pie(table(salesper))
```





Pie diagram

Example : Adding labels, headings and colours

```
> pie(table(salesper), labels = c("SP1",
"SP2", "SP3"), main = "Salespersons attending
customer", col=c("green", "red", "blue"))
```