

Lecture 14 - R Software

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Viewing and Setting names

★ The most basic command that enables the viewing of column or row is `names()`. The result you get depends on the object you are looking at:

```
> names(fw)
```

```
[1] "abund" "flow"
```

```
> names(mf)
```

```
[1] "Length" "Speed" "Algae" "NO3" "BOD"
```

```
> names(bird)
```

```
NULL
```

Notes:

- The first example shows the result from looking at a list.
- The second and third examples are both data frames, and the last is a matrix.
- The above command is not suitable for matrix.

★ For the matrix, the command will be `row.names()`.

```
> row.names(bird)
```

```
[1] "Blackbird" "Chaffinch" "Great Tit" "House Sparrow"
```

```
[5] "Robin" "Song Thrush"
```

★ We can also use `colnames()` in a similar way:

```
> colnames(mf)
```

```
[1] "Length" "Speed" "Algae" "NO3" "BOD"
```

```
> colnames(bird)
```

```
[1] "Garden" "Hedgerow" "Parkland" "Pasture" "Woodland"
```

★ The command `dimnames()` looks at both the row and column names at the same time:

```
> dimnames(bird)
```

```
[[1]]
```

```
[1] "Blackbird" "Chaffinch" "Great Tit" "House Sparrow"
```

```
[5] "Robin" "Song Thrush"
```

```
[[2]]
```

```
[1] "Garden" "Hedgerow" "Parkland" "Pasture" "Woodland"
```

The command shows the row names first and then the column names, as like
`[row, col] = [[[1]], [[2]]]`.

Following commands are to create names as well as seeing what the current names are set to, like so:

```
> names(mf)
[1] "Length" "Speed" "Algae" "NO3" "BOD"
```

```
names(mf) = c('len','sp', 'alg', 'no3', 'bod')
```

```
> names(mf)
[1] "len" "sp" "alg" "no3" "bod"
```

`colnames()` or `rownames()` are the commands, that can be used to change the name of columns or rows respectively.

```
> sites = c('Taw', 'Torridge', 'Ouse', 'Exe', 'Lyn', 'Brook', 'Ditch')
> rownames(fw) = sites
> fw
```

	abund	flow
Taw	9	2
Torridge	25	3
Ouse	15	5
Exe	2	9
Lyn	14	14
Brook	25	24
Ditch	24	29

We can also use the `dimnames()` command to set both row and column names simultaneously; the general form of the command is like so:

```
dimnames(our.object) = list(rows, columns)
```

```
> species = c('Bbird', 'C.Finch', 'Gt.Tit', 'Sparrow', 'Robin', 'Thrush')
```

```
> habitats = c('Gdn', 'Hedge', 'Park', 'Field', 'Wood')
```

```
> dimnames(bird) = list(species, habitats)
```

```
> bird
```

	Gdn	Hedge	Park	Field	Wood
Bbird	47	10	40	2	2
C.Finch	19	3	5	0	2
Gt.Tit	50	0	10	7	0
Sparrow	46	16	8	4	0
Robin	9	3	0	0	2
Thrush	4	0	6	0	0

TABLE : Commands to View and Set Names for Data Objects

COMMAND	APPROPRIATE OBJECTS
<code>names()</code>	Works on list, matrix, and data frame
<code>rownames()</code>	Works on matrix and data frame
<code>colnames()</code>	Works on matrix and data frame
<code>dimnames(row, col)</code>	Will get and set names for matrix and data frame

Rotating data tables

We can easily rotate a frame or a matrix so that the rows become the columns and the columns become the rows. To do this, we use the `t()` command:

```
> fw
```

	count	speed
Taw	9	2
Torrige	25	3
Ouse	15	5
Exe	2	9
Lyn	14	14
Brook	25	24
Ditch	24	29
Fal	47	34

```
> fw.t = t(fw)
```

```
> fw.t
```

	Taw	Torrige	Ouse	Exe	Lyn	Brook	Ditch	Fal
count	9	25	15	2	14	25	24	47
speed	2	3	5	9	14	24	29	34