

# Day 3 Cheatsheet

## Subsetting Data in R

### Functions

| Library/Package | Piece of code                     | Example of usage   | What it does  |
|-----------------|-----------------------------------|--|---|
| Base R          | <code>nrow(x); ncol(x)</code>     | <code>nrow(x); ncol(x)</code>  | Get the number of rows and the number of columns in an object <code>x</code> , respectively.  |
| Base R          | <code>dim(x)</code>               | <code>dim(x)</code>  | Get the number of rows <i>and</i> number of columns in an object <code>x</code>   |
| dplyr           | <code>glimpse(x)</code>           | <code>glimpse(mtcars)</code>   | Get an overview of data frame <code>x</code>  |
| dplyr           | <code>slice_sample(x)</code>      | <code>slice_sample(mtcars)</code>  | See a random subset of the rows of <code>x</code>   |
| Base R          | <code>data.frame()</code>         | <code>df &lt;- data.frame(1:3)</code>  | Creates a data frame where the named arguments will be the same length.   |
| Base R          | <code>tibble()</code>             | <code>tibble(mtcars)</code>  | Creates a tibble from a data.frame or matrix.   |
| tibble          | <code>column_to_rownames()</code> | <code>df &lt;- df %&gt;%<br/>column_to_rownames('existing_variable_name')</code> | Transforms an existing <code>column_to_rownames()</code> string into the rownames.  |
| tibble          | <code>rownames_to_column()</code> | <code>df &lt;- df %&gt;%<br/>rownames_to_column('new_variable_name')</code>      | Transforms the <code>rownames_to_column()</code> data frame into a column (which is added to the start of the data frame). The string supplied as an argument will be the name of the new column. |
| dplyr           | <code>rename()</code>             | <code>df &lt;- dplyr::rename(df,<br/>MPG = mpg)</code>                           | Renames designated columns while keeping all variables of the data.frame  |
| dplyr           | <code>pull()</code>               | <code>pull(df,<br/>'existing_variable_name')</code>                              | Extract a column as a vector  |
| dplyr           | <code>select()</code>             | <code>select(df,<br/>'existing_variable_name')</code>                            | Selects columns that match the specified argument   |
| dplyr           | <code>filter()</code>             | <code>filter(df, mpg &gt; 20)</code>   | Returns a subset of rows matching the conditions of the specified logical argument  |

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|-----------------|-----------------------------------|--|--|
| Base R          | <code>==, &lt;=, &gt;=, !=</code> | <code>filter(df, mpg &gt; 20)</code>                                       | These are binary operators which allow for the comparison of values in an object. They are handy for use with <code>dplyr::filter()</code>   |
| Base R          | <code>%in%</code>                 | <code>filter(df, mpg %in% c(20,21,22))</code>                              | Checks if the given value(s) on the left side of the operator are in the vector or other R object defined on the right side of the operator. It returns a logical TRUE or FALSE statement. |
| dplyr           | <code>%&gt;%</code>               | <code>df &lt;- df %&gt;%<br/>select('new_variable_name')</code>            | Filters a data.frame through tidyverse operations  |
| dplyr           | <code>mutate()</code>             | <code>df &lt;- mutate(df, newcol = wt/2.2)</code>                          | Adds a new column that is a function of existing columns   |
| dplyr           | <code>relocate()</code>           | <code>df_carb &lt;-<br/>relocate(.data = df,<br/>wt, .before = mpg)</code> | Reorder columns in a data frame or tibble  |
| dplyr           | <code>arrange()</code>            | <code>df &lt;- arrange(df, mpg)</code>                                     | Reorders rows in ascending order.  |
| dplyr           | <code>case_when()</code>          | <code>df &lt;- arrange(df, mpg)</code>                                     | <code>arrange(desc())</code> would reorder rows in descending order. This function allows you to vectorise multiple <code>if_else()</code> statements. If no cases match, NA is returned.  |
| Base R          | <code>colnames()</code>           | <code>colnames(df)</code>  | Gets or sets the column names of a matrix or data frame.   |

- See `tidyselect` helpers for handy things to use with `select()`.

\* This format was adapted from the cheatsheet format from AlexsLemonade.