Pictorial week 5 Non-Parametrics

How to import the dataset:

The examples from your lectures are used to demonstrate:
Flexi_time.csv, Meds.xlsx, and the built-in faithful dataset

```
Work_times <- read.csv("Flexi_time.csv")
```

How to perform the Wilcoxon Signed Rank Sum Test:

```
result_WSRS = wilcox.test(Work_times$Normal, Work_times$Flexi, exact = FALSE, paired = TRUE, alternative = "greater")
```

Understanding what you are writing:

This gets all of the data from the column named Normal stored in the Work_times object.

```
Work_times$Normal
```

Next the exact parameter is only set to TRUE if there are no ties in the data. Otherwise, if there are ties it will give you an approximate p-value.

```
, exact = FALSE
```

The paired parameter is how you specify whether this is the Wilcoxon signed rank sum test or if it is the Mann-Whitney Wilcoxon test. If set to true it is the Wilcoxon, if set to false. It will perform the Mann-Whitney test.

```
paired = TRUE,
```

Alternative is the H1 (the alternative hypothesis). It can be set to either ‘greater’, ‘less’, or ‘two.sided’

```
alternative = "less"
```

If there is still confusion run the ? command and it will display an explanation of the test on the screen.

```
?wilcox.test
```

How to use an excel file:

If the data you are dealing with is not from a .csv file and rather a .xlsx then you first need to import the readxl package by running

```
library(readxl)
```

Then instead of using the read.csv() function, you would instead use the read.xlsx() function.

```
read.xlsx("Meds.xlsx")
```

How to perform the Mann-Whitney Wilcoxon Test:

```
result_MWW = wilcox.test(Med_data$New, Med_data$Asprin, exact = FALSE, paired = FALSE, alternative = "less")
```

How to use a built-in data set on R:

```
datasets::faithful
```

How to perform the Kruskal Wallis test:

```
kruskal.test(faithful$eruptions, faithful$waiting)
```

For the above test the data needs to be structured in such a way that all observations are in a single column, and all the varying treatments are in a single column.