Assignment 2

Nesta Ndungu

```
rm(list=ls())
library(tidyverse)
```

```
-- Attaching packages --------------------------------------- tidyverse 1.3.2 --
v ggplot2 3.4.0     v purrr   1.0.1
v tibble  3.1.8     v dplyr   1.1.0
v tidyr   1.3.0     v stringr 1.5.0
v readr   2.1.3     v forcats 1.0.0
-- Conflicts ------------------------------------------ tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()    masks stats::lag()
```

```
library(rvest)
```

```
Attaching package: 'rvest'

The following object is masked from 'package:readr':

    guess_encoding
```

```
# Scraping the html code from the page source.

motor <- minimal_html('<table class="" style="">

  <thead>
  <tr>
  <td>
```

```
  Modell (temp. varierte fra 0° til -10°)
</td>
  <td>
  WLTP-tall
</td>
  <td>
  STOPP
</td>
  <td>
  Avvik
</td>
  </tr>
  </thead>

  <tbody>
  <tr><td>Tesla Model 3 LR Dual motor</td><td>614 km&#x2F;14,7 kWh</td><td>521 km</td><td>
  <tr><td>Mercedes-Benz EQS 580 4matic</td><td>645 km&#x2F;18,3 kWh</td><td>513 km</td><td
  <tr><td>BMW iX xDrive50</td><td>591 km&#x2F;21,4 kWh</td><td>503 km</td><td>-14,89 %</td
  <tr><td>Tesla Model Y LR Dual motor</td><td>507 km&#x2F;16,9 kWh</td><td>451 km</td><td>
  <tr><td>Volkswagen ID.3 PRO S</td><td>539 km&#x2F;16,3 kWh</td><td>435 km</td><td>-19,29
  <tr><td>Kia EV6 2WD</td><td>528 km&#x2F;16,5 kWh</td><td>429 km</td><td>-18,75 %</td></t
  <tr><td>NIO ES8 LR 7-seter</td><td>488 km&#x2F;21,5 kWh</td><td>425 km</td><td>-12,91 %<
  <tr><td>Kia EV6 4WD</td><td>484 km&#x2F;18,0 kWh</td><td>423 km</td><td>-12,60 %</td></t
  <tr><td>Volkswagen ID.4 Pro</td><td>485 km&#x2F;18,4 kWh</td><td>414 km</td><td>-14,64 %
  <tr><td>Hyundai Ioniq 5 2WD</td><td>481 km&#x2F;16,8 kWh</td><td>408 km</td><td>-15,18 %
  <tr><td>BMW i4 M50</td><td>497 km&#x2F;19,0 kWh</td><td>406 km</td><td>-18,31 %</td></tr
  <tr><td>Skoda Enyaq iV80X</td><td>477 km&#x2F;18,2 kWh</td><td>403 km</td><td>-15,51 %</
  <tr><td>Porsche Taycan 4 Cross Turismo</td><td>456 km&#x2F;22,4 kWh</td><td>402 km</td><
  <tr><td>Polestar 2 LR Single motor</td><td>517 km&#x2F;18,6 kWh</td><td>400 km</td><td>-
  <tr><td>Audi e-tron GT</td><td>463 km&#x2F;21,1 kWh</td><td>392 km</td><td>-15,33 %</td>
  <tr><td>Xpeng P7</td><td>470 km&#x2F;19,4 kWh</td><td>383 km</td><td>-18,51 %</td></tr>
  <tr><td>Audi e-tron Q4 40</td><td>485 km&#x2F;18,6 kWh</td><td>380 km</td><td>-21,65 %</
  <tr><td>Hyundai Ioniq 5 4WD (19-tommer)</td><td>460 km&#x2F;17,7 kWh</td><td>369 km</td>
  <tr><td>Hyundai Ioniq 5 LR 4WD (20-tommer)</td><td>430 km&#x2F;17,7 kWh</td><td>x</td><t
  <tr><td>BYD Tang</td><td>400 km&#x2F;21,6 kWh</td><td>356 km</td><td>-11,00 %</td></tr>
  <tr><td>Volkswagen ID.4 GTX</td><td>466 km&#x2F;18,6 kWh</td><td>353 km</td><td>-24,20 %
  <tr><td>Audi e-tron Q4 50 quattro</td><td>459 km&#x2F;19,1 kWh</td><td>349 km</td><td>-2
  <tr><td>Skoda Enyaq iV80</td><td>509 km&#x2F;17,7 kWh</td><td>347 km</td><td>-31,83 %</t
  <tr><td>Tesla Model 3 SR</td><td>448 km&#x2F;14,0 kWh</td><td>346 km</td><td>-22,87 %</t
  <tr><td>Polestar 2 LR Dual motor</td><td>476 km&#x2F;20,2 kWh</td><td>340 km</td><td>-28
  <tr><td>Polestar 2 LR Dual motor (m bagasje)</td><td>470 km&#x2F;19,5 kWh</td><td>x</td>
```

```
  <tr><td>Cupra Born</td><td>395 km&#x2F;15,4 kWh</td><td>339 km</td><td>-14,18 %</td></tr
  <tr><td>Volvo C40 Recharge</td><td>437 km&#x2F;21,1 kWh</td><td>333 km</td><td>-23,80 %<
  <tr><td>Mercedes-Benz EQA 250</td><td>401 km&#x2F;17,7 kWh</td><td>331 km</td><td>-17,46
  <tr><td>BMW iX xDrive40</td><td>402 km&#x2F;20,7 kWh</td><td>316 km</td><td>-21,39 %</td
  <tr><td>Mercedes-Benz EQB 350 4matic</td><td>407 km&#x2F;18,1 kWh</td><td>315 km</td><td
  <tr><td>Opel Mokka-e</td><td>338 km&#x2F;16,2 kWh</td><td>263 km</td><td>-22,19 %</td></
  <tr><td>Peugeot e-2008</td><td>320 km&#x2F;15,6 kWh</td><td>228 km</td><td>-28,75 %</td>
  </tbody>
  </table>')
```

```
# Making the dataframe.

df_motor <- motor %>%
  html_element("table") %>%
  html_table()
```

```
# Renaming the columns.

df_motor <- rename(df_motor, Modell = "X1", WLTP_tall = "X2", STOPP = "X3", Avvik = "X4")
```

```
# Removing the first row.

df_motor <- df_motor[-1,]
```

```
# Removing characters that are unnecessary.

df_motor$WLTP_tall <- substr(df_motor$WLTP_tall,1,nchar(df_motor$WLTP_tall)-12)
df_motor$STOPP <- substr(df_motor$STOPP,1,nchar(df_motor$STOPP)-3)
```

```
# Making the values in the columns as numeric.

df_motor$WLTP_tall <- as.numeric(as.character(df_motor$WLTP_tall))
df_motor$STOPP <- as.numeric(as.character(df_motor$STOPP))
```

```
# Making the plot.
# Found the code for the diagonal line at: https://statisticsglobe.com/add-diagonal-line-p

df_motor  %>%
```

```r
ggplot() +
geom_point(aes(x = WLTP_tall, y = STOPP)) +
geom_abline(intercept = 0, slope = 1, color = "red") +
labs (title = "WLTP test of electric cars", y = "STOPP", x = "WLTP") +
theme_bw()
```

```
Warning: Removed 2 rows containing missing values (`geom_point()`).
```