Purchasing power of English workers from the 16th to the 19th century

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```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --

## v ggplot2 3.3.5      v purrr   0.3.4
## v tibble  3.1.5      v dplyr   1.0.7
## v tidyr   1.1.4      v stringr 1.4.0
## v readr   2.0.2      v forcats 0.5.1

## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

Introduction

The purpose of this peer-reviewed exercise to do a visualization of the data describing the purchasing power of workers in England between the 16th and 19th century. The data and accompanying visualization was first produced by William Playfair in his book: "A Letter on Our Agricultural Distresses, Their Causes and Remedies". After exploring the data, we divide this report into three main sections:

1. Reproducing Playfair's graph
2. Improving Playfair's graph
3. More graphical enhancements

Data exploration

We start by importing the data, displaying a few rows and showing some statistics.

```
data = read.csv('data.csv')
data[1:5,]
```

```
##   X Year Wheat Wages
## 1 1 1565  41.0  5.00
## 2 2 1570  45.0  5.05
## 3 3 1575  42.0  5.08
## 4 4 1580  49.0  5.12
## 5 5 1585  41.5  5.15
```

```
str(data)
```

```
## 'data.frame':    53 obs. of  4 variables:
##  $ X    : int  1 2 3 4 5 6 7 8 9 10 ...
##  $ Year : int  1565 1570 1575 1580 1585 1590 1595 1600 1605 1610 ...
```

```
##  $ Wheat: num  41 45 42 49 41.5 47 64 27 33 32 ...
##  $ Wages: num  5 5.05 5.08 5.12 5.15 5.25 5.54 5.61 5.69 5.78 ...
```

1. Reproducing Playfair's graph

```
ggplot(data=data, aes(x=Year, y=Wheat)) +
  geom_bar(aes(y=Wheat), position=position_dodge(0.9), colour="black", stat="identity", width=4.5, binw
  geom_area(aes(y=Wages), fill = "lightblue", color='red', alpha=0.91)
```

```
## Warning: Ignoring unknown parameters: binwidth
```

```
## Warning: position_dodge requires non-overlapping x intervals
```

```
## Warning: Removed 3 rows containing missing values (position_stack).
```