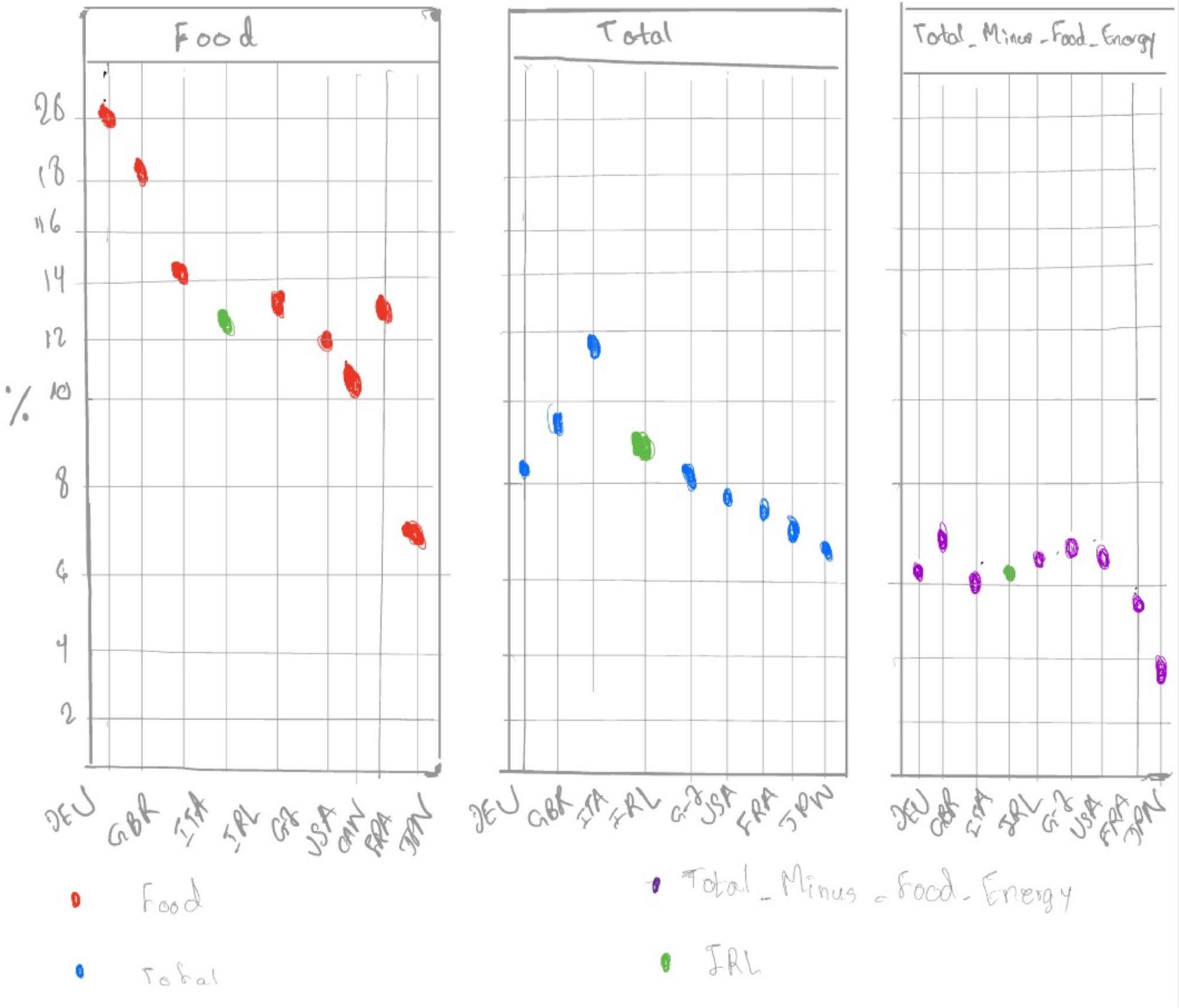
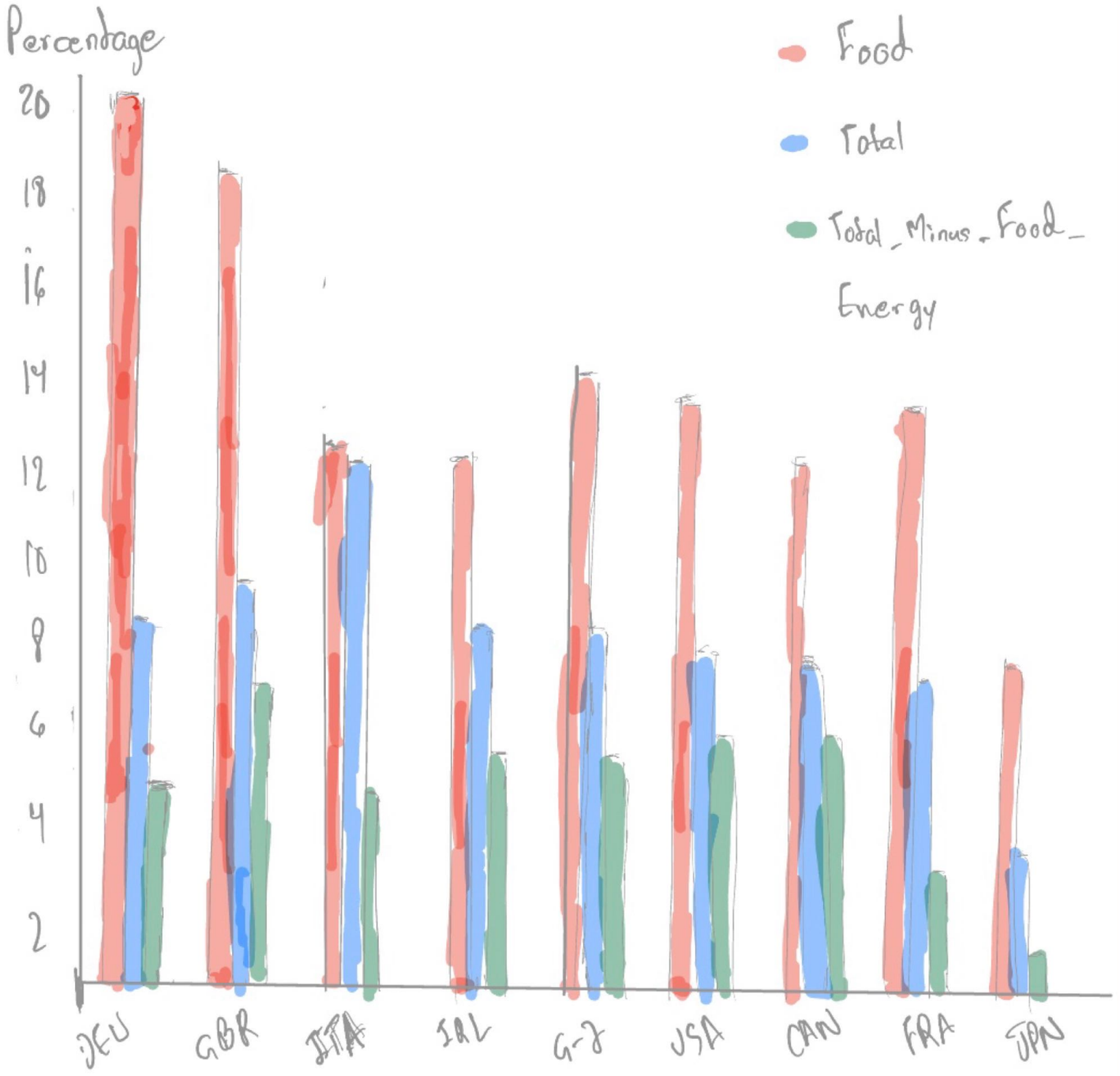
Consumer Price Index between Ireland & G-7 countries



Consumer Price Index (CPI) between Ireland & G7 countries



Data_Visualisation_Assignment1

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Part1 (1)

3. For the filtering the data from the data frame, Ireland, G-7 association members(7 countries) and G-7 data is chosen. For the aesthetic mapping of dot plots, countries are as X- axis and percentage unit is as Y-axis. Geometrics is dot and faceting is applied for differentiation among Total, Food, Total_Minus_Food_Energy. For the colour specific, food is red, total is blue, the last category is purple while Ireland is green. Different colour of Ireland will help to compare and contrast CPI data among Ireland and other countries for better visualization.

Grammar of Graphics of Bar chart is same with Layer 1 and Layer 2. For geometrics, bar is applied and no faceting is included in that graph. Grouping multiple bars(Total, Food and Total_Minus_Food_Energy) is used in each country. Colour application is also similar except Ireland data.

The data is not narrow range of variance. Therefore, bar plot or dot plot is still suitable in that perspective. According to William Cleverland, position on a scale (dot plot) is higher ranking (accurate data) than length/bar chart. In this dataset, for example, Food CPI of CAN is 6.319445. For that kind of data visitation, dot plot is more effective.

Part2 1.

```
setwd("~/Downloads")
cp<- read.csv('Counsumer_Price_Index.csv')
library('dplyr')
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library('ggplot2')
library('tidyr')

B<-cp%>% filter( cp$Time=='2022-12',cp$Frequency=='Monthly', cp$Subject %in%c('Total','Food','Total_Minus_Food_En
ergy'),cp$Location %in%c('CHE','EU27_2020','GBR','IRL','JPN','SWE','EST','FIN','LUX'))
colo=c(0,0,'IRL','IRL',0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,"IRL",0,0,0,0,0)
B<-cbind(B,colo)
B
```

Location <chr>	Subject <chr>	Frequency <chr>	Time <chr>	Percentage <dbl>	colo <chr>
FIN	Food	Monthly	2022-12	16.033470	0
FIN	Total	Monthly	2022-12	9.145037	0
IRL	Food	Monthly	2022-12	11.746360	IRL
IRL	Total	Monthly	2022-12	8.224299	IRL
JPN	Food	Monthly	2022-12	7.227723	0
JPN	Total	Monthly	2022-12	4.000000	0
LUX	Food	Monthly	2022-12	10.903780	0
LUX	Total	Monthly	2022-12	5.374021	0
SWE	Food	Monthly	2022-12	18.244180	0
SWE	Total	Monthly	2022-12	12.338640	0

1-10 of 27 rows Previous 1 2 3 Next

```
b<-ggplot(B, aes(x=reorder(Location,Percentage),y=Percentage,color=colo))+geom_point(size=3.5)+ggtitle('CPI of Ir
eland in comparison with 8 countries and 1 group')
b<-b+ theme(panel.spacing = unit(1,'lines'))+
  facet_wrap(~Subject,scales = 'free_x')
b<-b+ xlab('')+ylab('Percentage')
b<-b+
  scale_y_continuous(breaks = seq(1,31,by=3),limits = c(1,30))
b<-b+theme_bw()+theme(
  plot.title = element_text(face='bold',size=15),
  axis.text.x = element_text(angle=30,vjust=1,hjust=1,size=5),
  axis.line.y = element_blank(),
  axis.line.x = element_blank(),
  panel.border = element_blank()
)
b
```

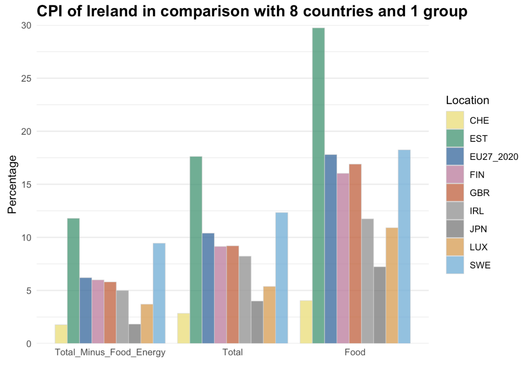
2.

```
setwd("~/Downloads")
cp<- read.csv('Counsumer_Price_Index.csv')
library('dplyr')
library('ggplot2')
library('tidyr')
library('colorspace')
library('colorblindr')
cb<-desaturate(palette_OkabeIto,0.25)
cb1<-cb[c(4,3,5,7,6,8,9,1,2)]
C<-cp%>% filter( cp$Time=='2022-12',cp$Frequency=='Monthly', cp$Subject %in% c('Total','Food','Total_Minus_Food_E
nergy'),cp$Location %in% c('CHE','EU27_2020','GBR','IRL','JPN','SWE','EST','FIN','LUX'))

c<-ggplot(C,(aes(x=reorder(Subject,Percentage),y=Percentage,fill=Location)))+geom_col(colour ='grey85',size=0.2,p
osition='dodge',alpha=0.8)+
ggtitle('CPI of Ireland in comparison with 8 countries and 1 group')+xlab('')+ scale_y_continuous(breaks = c(0,5,
10,15,20,25,30),limits = c(0,30),expand=c(0,0))+ scale_fill_manual(values = cb1)+
theme_bw()+
theme(plot.title = element_text(face='bold',size=15), axis.line = element_blank(),
axis.ticks = element_blank(), panel.border = element_blank(), axis.line.y=element_blank(), axis.ticks.y=element_b
lank(), panel.grid.major.x = element_blank())
```

```
## Warning: Using `size` aesthetic for lines was deprecated in ggplot2 3.4.0.
## ℹ Please use `linewidth` instead.
```

```
c
```



3. For both plots, the data set is changed. For dot plot, the order is ascending although it is neither ascending nor descending in pen & paper draw. The Y-axis scale brakes and limits are changed. In part2 dot plot, panel border is blank. Total colour is 2 (one for my country, Ireland, and one for other countries and group) while there are 4 colours in part1 dot plot. Title is described in bold letter.

In bar plot part2, major groups in X-axis are 3 based on subject although major groups in X- axis are 9 based on location in part1 bar plot. The Y-axis scale brakes and limits are changed. In part2 bar plot, panel border is blank. There are 9(8 countries and 1 group) in one major group of X-axis. Therefore, there are 9 different colours in part2 bar plot. These colours are suitable for colourblind people (using 'colorblindr' package). Title is described in bold letter.