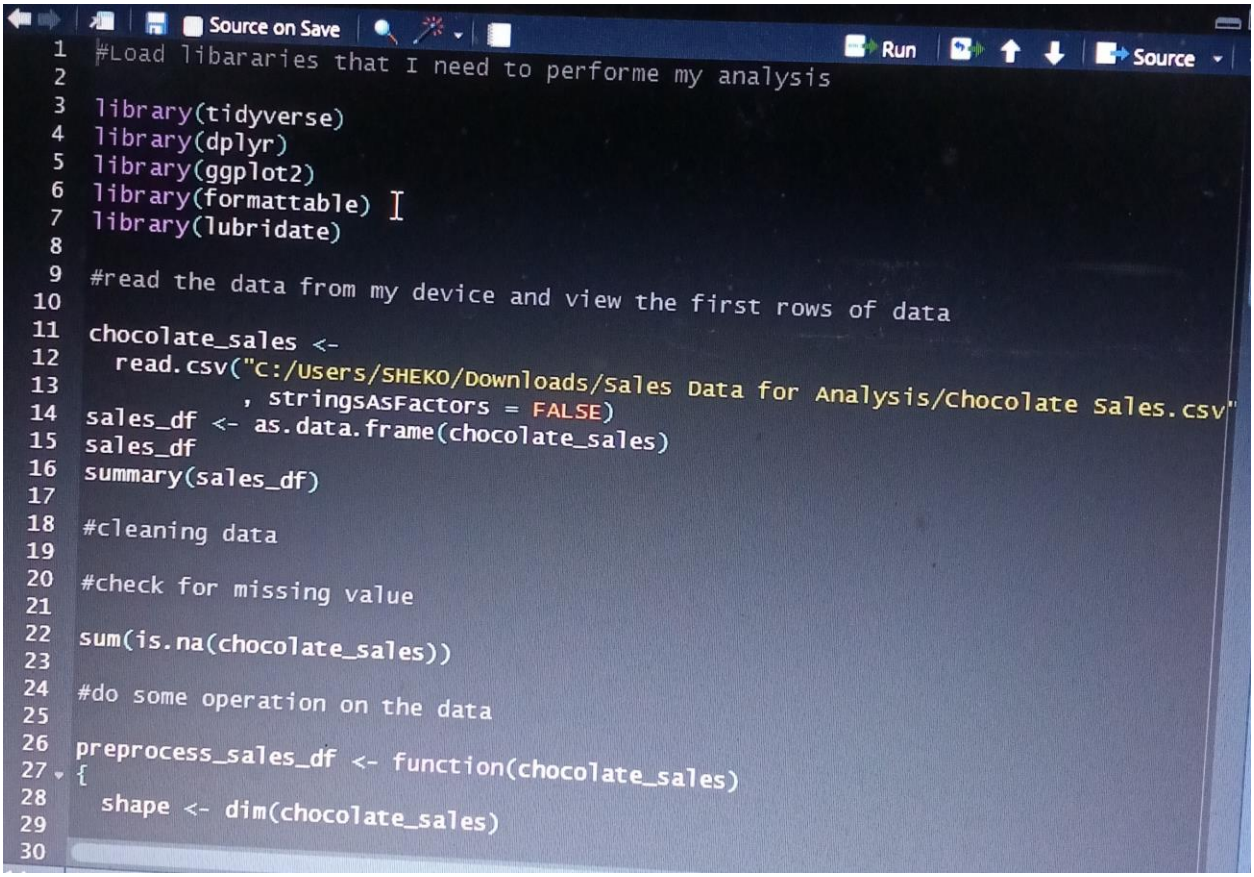
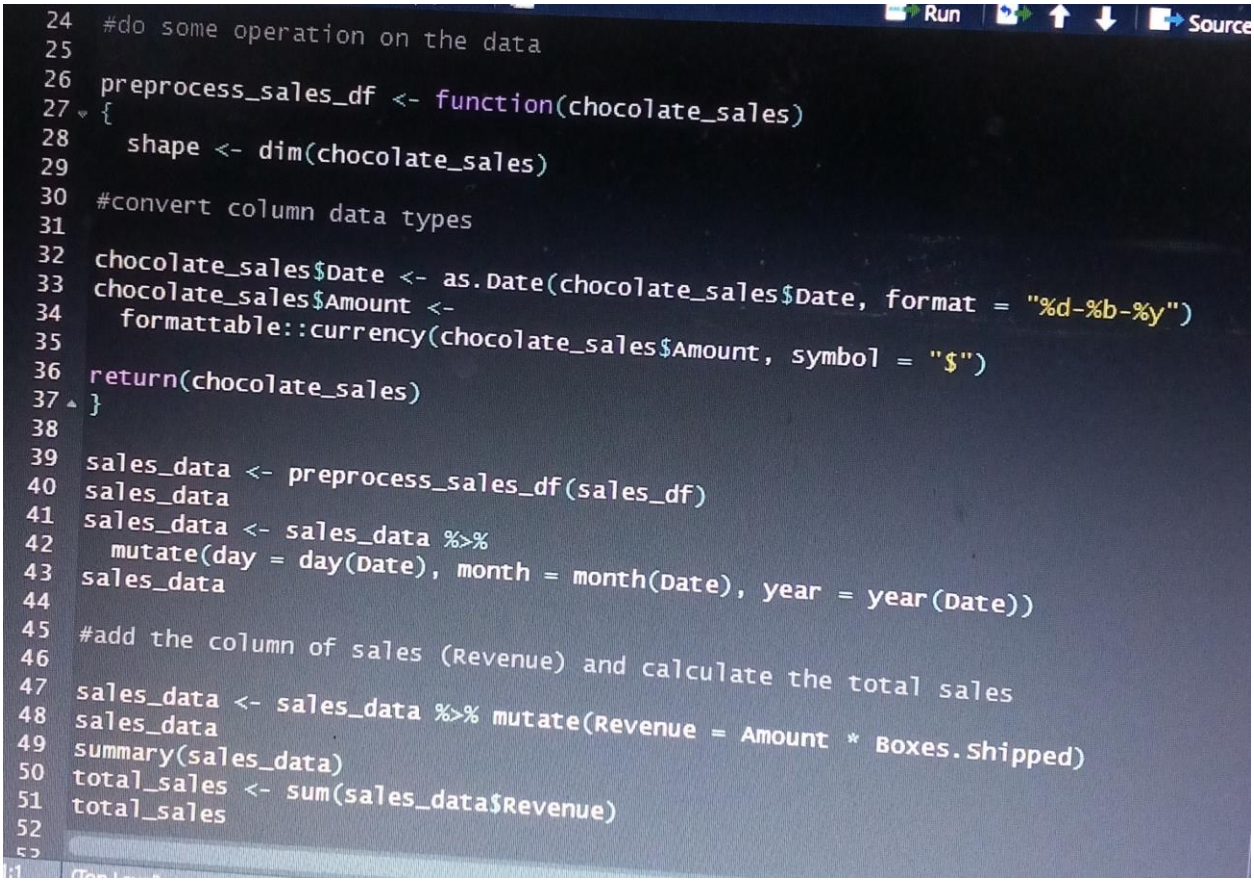
Brainwave Matrix Solution:

Task1: Analysis of Chocolate Data using R



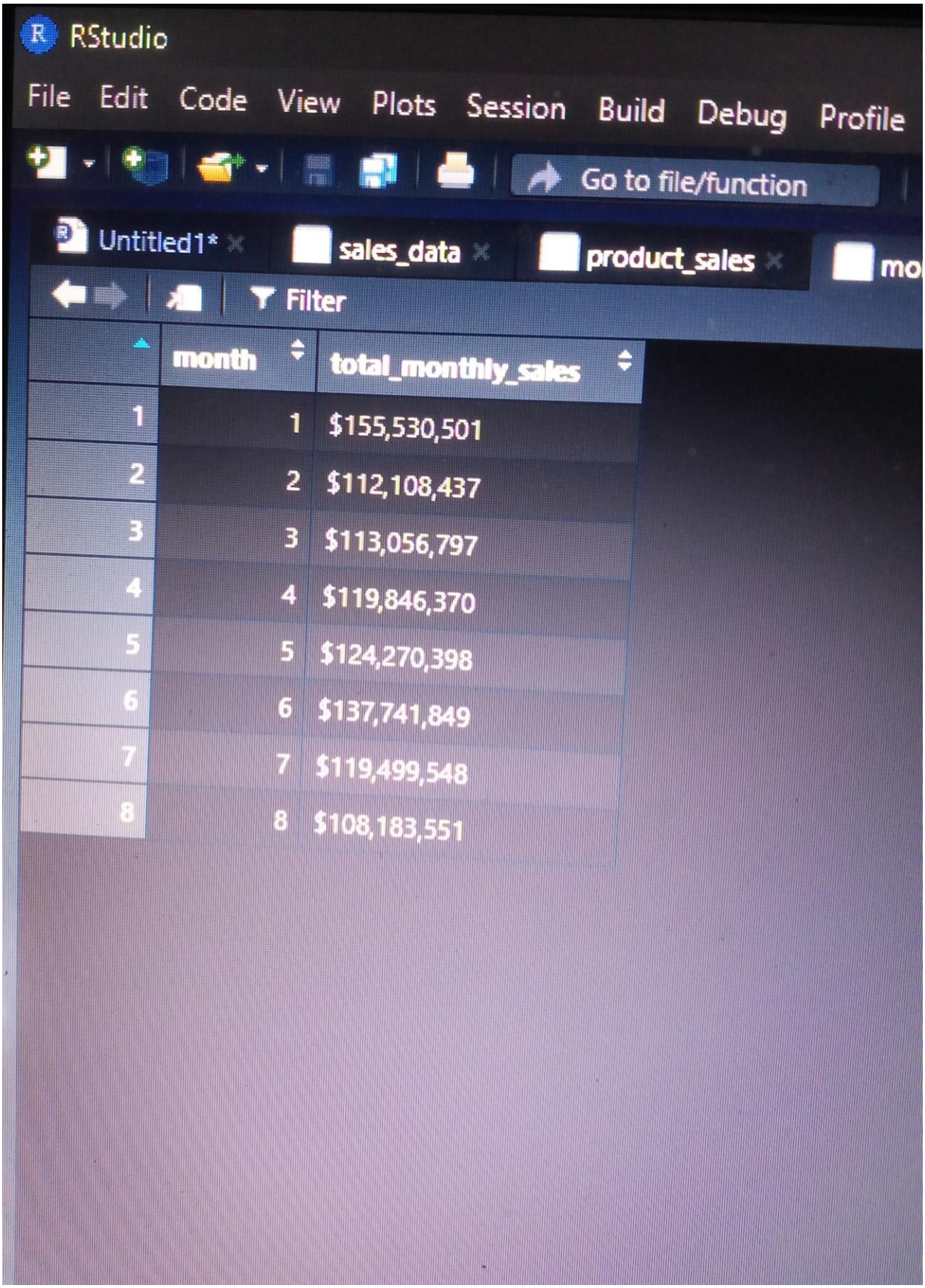


```r
#do some operation on the data

preprocess_sales_df <- function(chocolate_sales)
{
  shape <- dim(chocolate_sales)

#convert column data types

chocolate_sales$Date <- as.Date(chocolate_sales$Date, format = "%d-%b-%y")
chocolate_sales$Amount <-
  formattable::currency(chocolate_sales$Amount, symbol = "$")

return(chocolate_sales)
}

sales_data <- preprocess_sales_df(sales_df)
sales_data
sales_data <- sales_data %>%
  mutate(day = day(Date), month = month(Date), year = year(Date))
sales_data

#add the column of sales (Revenue) and calculate the total sales

sales_data <- sales_data %>% mutate(Revenue = Amount * Boxes.Shipped)
sales_data
summary(sales_data)
total_sales <- sum(sales_data$Revenue)
total_sales
```

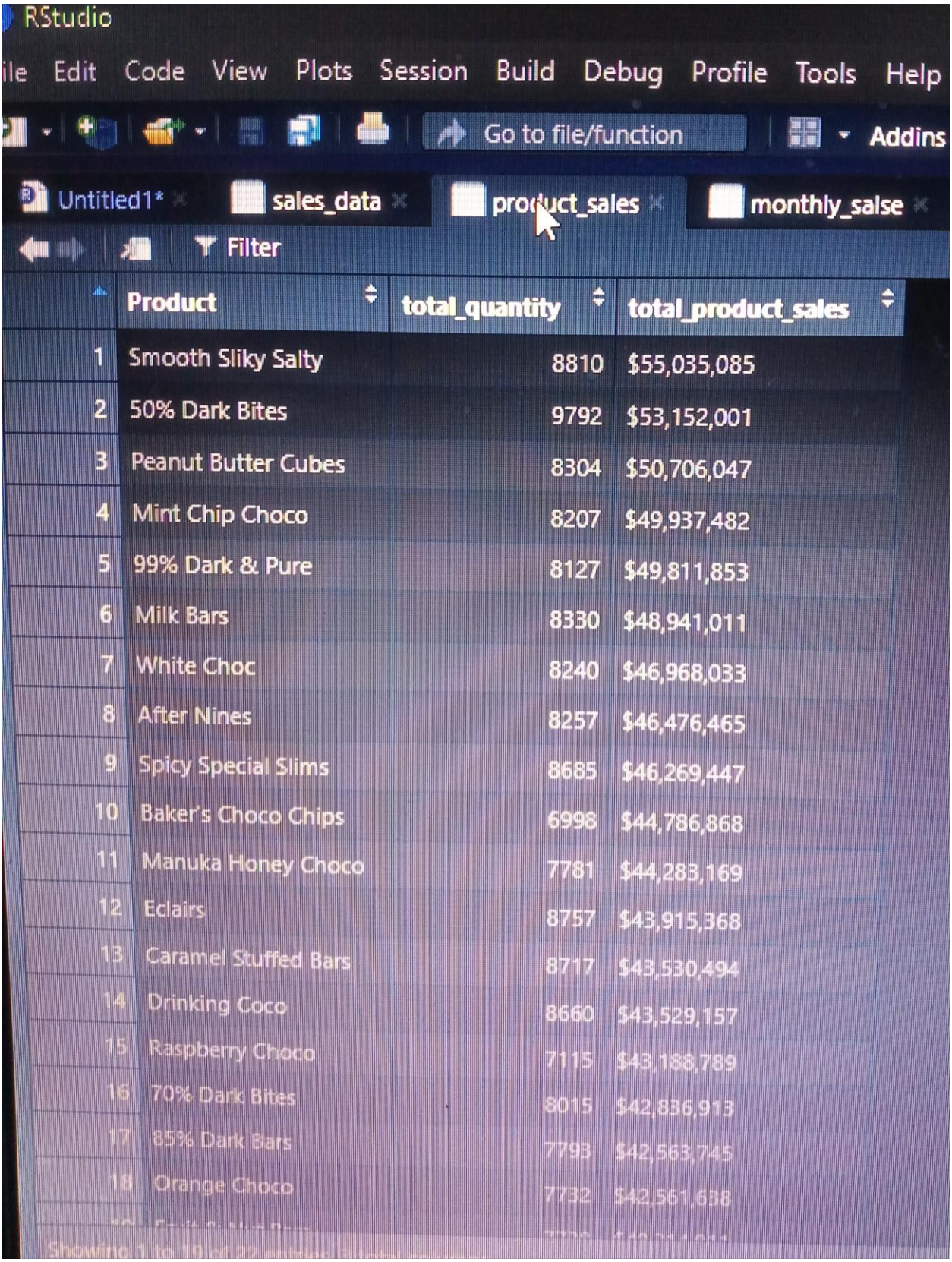
```r
#calculate daily and monthly sales

daily_salse <- sales_data %>% group_by(day) %>%
  summarise(total_daily_sales = sum(Revenue, na.rm = TRUE))
daily_salse
monthly_salse <- sales_data %>% group_by(month) %>%
  summarise(total_monthly_sales = sum(Revenue, na.rm = TRUE))
monthly_salse

#chart of daily and monthly sales

ggplot(daily_salse,
       aes(x = day, y = total_daily_sales)) + geom_line(color = "black") +
  labs(title = "Daily Sales", x = "Day", y = "Total Daily Sales")
ggplot(monthly_salse,
       aes(x = month, y = total_monthly_sales)) + geom_line(color = "red") +
  labs(title = "Monthly Sales", x = "Month", y = "Total Monthly Sales")

#analysis according to product

product_sales <- sales_data %>% group_by(Product) %>%
  summarise(total_quantity = sum(Boxes.Shipped),
            total_product_sales = sum(Revenue, na.rm = TRUE)) %>%
  arrange(desc(total_product_sales))
product_sales
```

```r
#chart of best-selling products

ggplot(product_sales, aes(x = reorder(Product, -total_product_sales),
                          y = total_product_sales)) +
  geom_bar(stat = "identity", fill = "blue") + coord_flip() +
  labs(title = "Sales Distribution by product", x = "Product",
       y = "Total Product Sales")

#analysis according to best-selling country

country_sales <- sales_data %>% group_by(Country) %>%
  summarise(total_country_sales = sum(Revenue, na.rm = TRUE)) %>%
  mutate(Percentage = percent(total_country_sales / sum(total_country_sales)),
         Lables = scales::percent(Percentage), ypos = cumsum(Percentage) -
           0.5 * Percentage)
country_sales

#chart of best-selling country

ggplot(country_sales, aes(x = "", y = Percentage, fill = Country)) +
  geom_bar(stat = "identity", width = 1, color = "blue") +
  coord_polar(theta = "y") +
  geom_text(aes(y = ypos, label = Percentage)) + theme_void() +
  labs(title = "Sales Distribution by Country", fill = "Country")
```

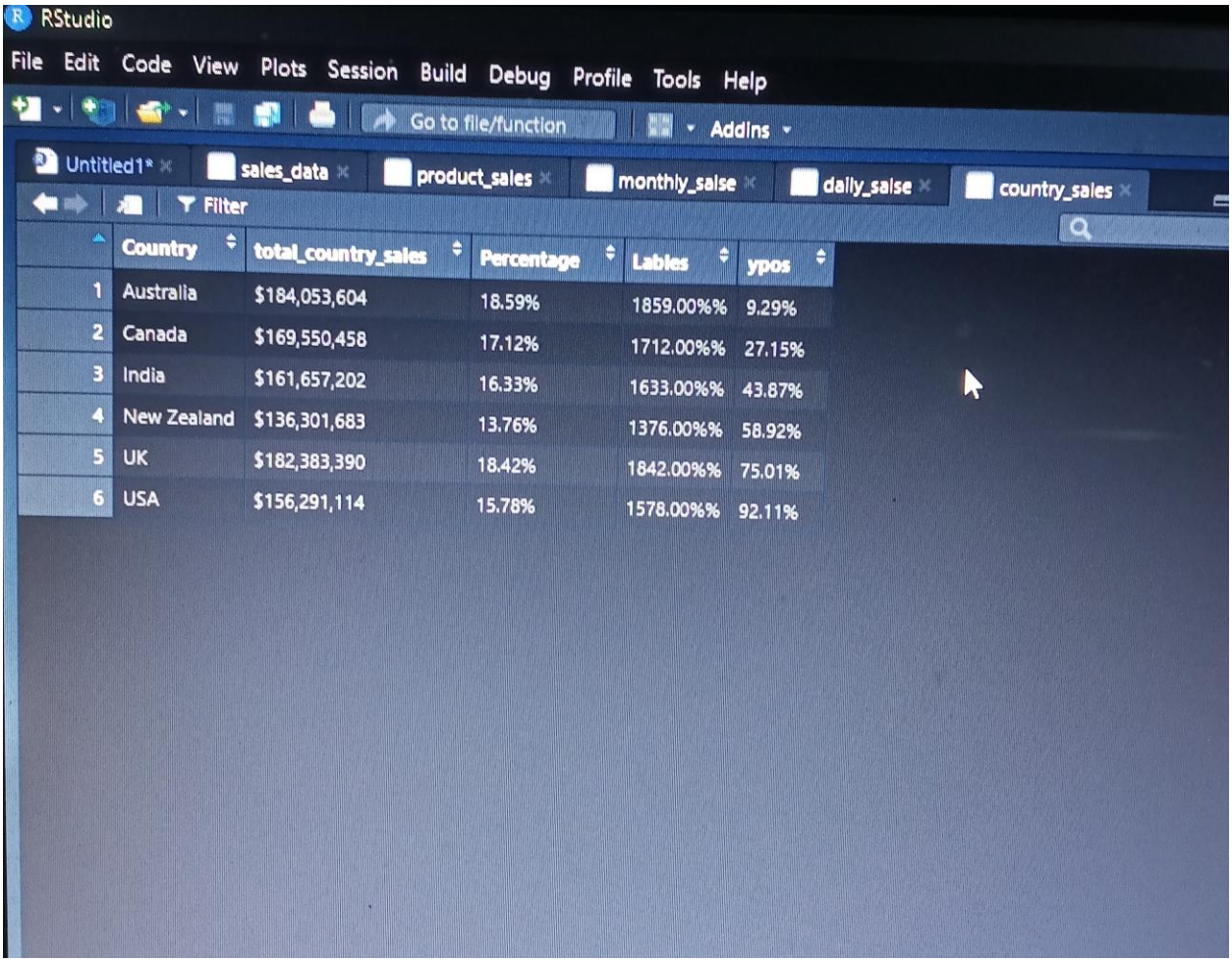
	day	total_daily_sales
1	1	$19,610,766
2	2	$20,495,468
3	3	$34,011,453
4	4	$56,749,000
5	5	$32,651,381
6	6	$12,000,583
7	7	$38,783,087
8	8	$24,740,331
9	9	$22,440,404
10	10	$26,665,849
11	11	$46,375,861
12	12	$29,702,533
13	13	$39,230,107
14	14	$35,011,403
15	15	$62,660,346
16	16	$33,445,104
17	17	$33,739,713



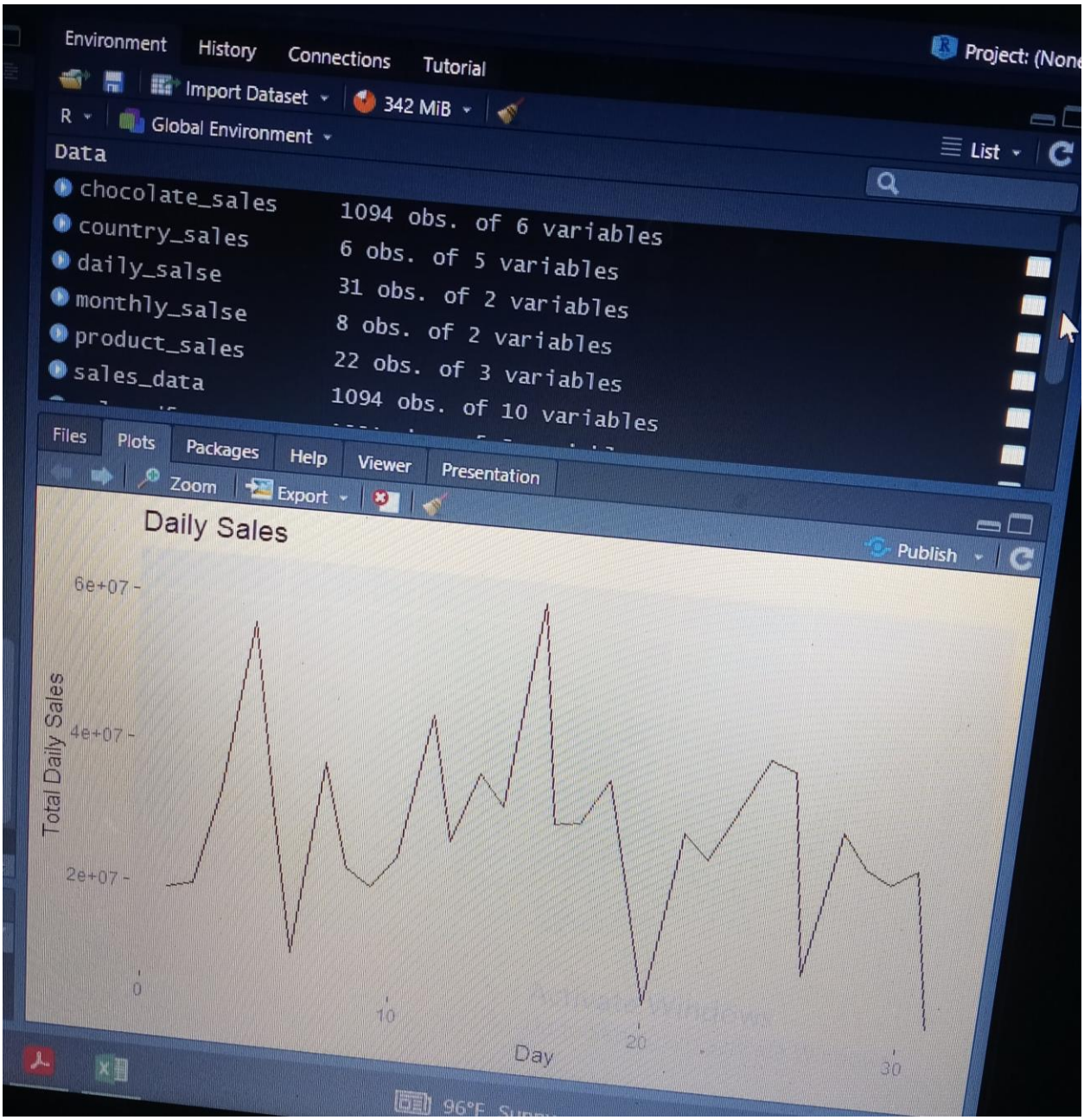
	month	total_monthly_sales
1	1	$155,530,501
2	2	$112,108,437
3	3	$113,056,797
4	4	$119,846,370
5	5	$124,270,398
6	6	$137,741,849
7	7	$119,499,548
8	8	$108,183,551

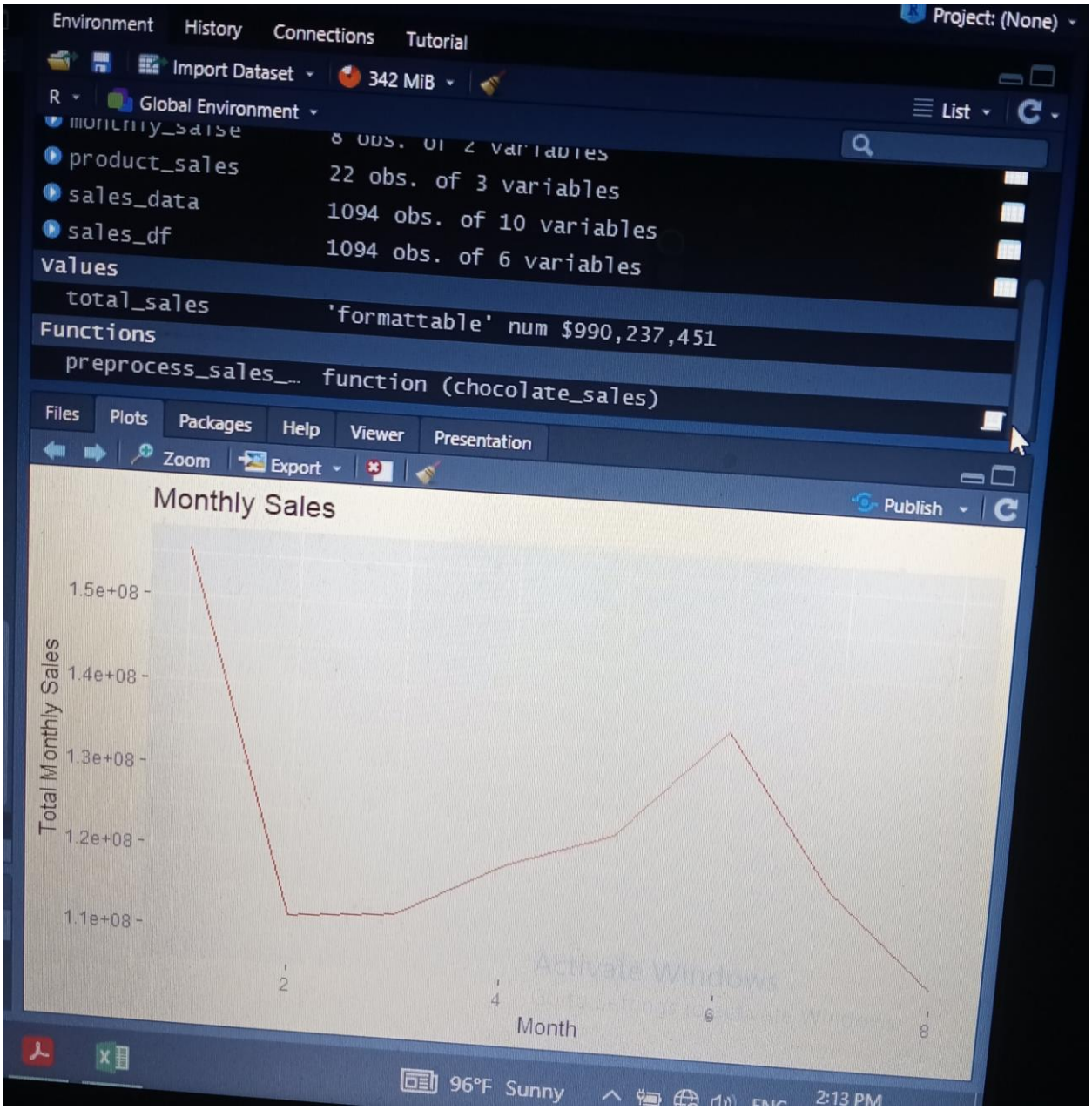


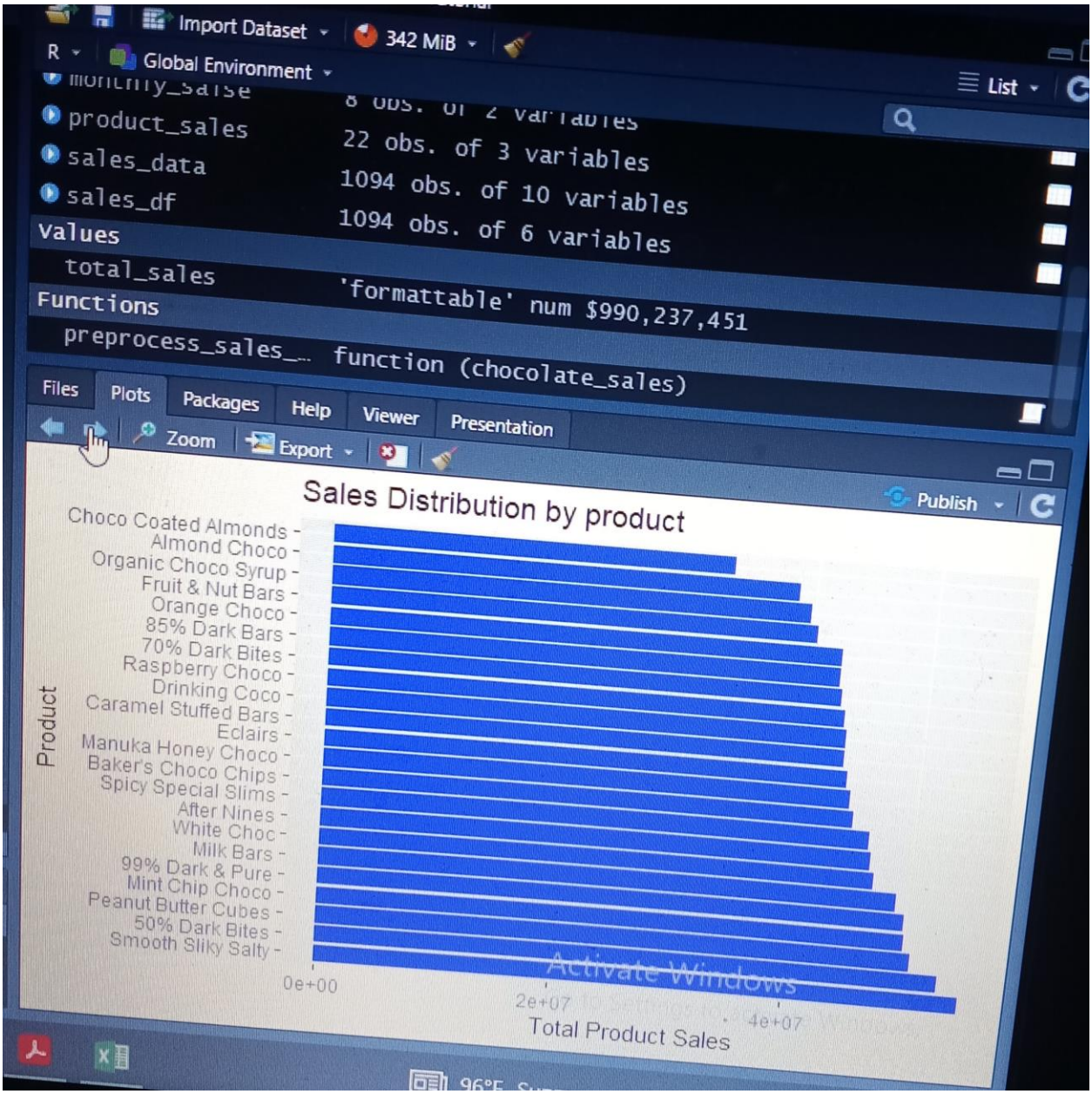
	Product	total_quantity	total_product_sales
1	Smooth Sliky Salty	8810	$55,035,085
2	50% Dark Bites	9792	$53,152,001
3	Peanut Butter Cubes	8304	$50,706,047
4	Mint Chip Choco	8207	$49,937,482
5	99% Dark & Pure	8127	$49,811,853
6	Milk Bars	8330	$48,941,011
7	White Choc	8240	$46,968,033
8	After Nines	8257	$46,476,465
9	Spicy Special Slims	8685	$46,269,447
10	Baker's Choco Chips	6998	$44,786,868
11	Manuka Honey Choco	7781	$44,283,169
12	Eclairs	8757	$43,915,368
13	Caramel Stuffed Bars	8717	$43,530,494
14	Drinking Coco	8660	$43,529,157
15	Raspberry Choco	7115	$43,188,789
16	70% Dark Bites	8015	$42,836,913
17	85% Dark Bars	7793	$42,563,745
18	Orange Choco	7732	$42,561,638



	Country	total_country_sales	Percentage	Lables	ypos
1	Australia	$184,053,604	18.59%	1859.00%%	9.29%
2	Canada	$169,550,458	17.12%	1712.00%%	27.15%
3	India	$161,657,202	16.33%	1633.00%%	43.87%
4	New Zealand	$136,301,683	13.76%	1376.00%%	58.92%
5	UK	$182,383,390	18.42%	1842.00%%	75.01%
6	USA	$156,291,114	15.78%	1578.00%%	92.11%


Environment
History
Connections
Tutorial
Import Dataset
342 MiB
R
Global Environment
Data
List
chocolate_sales 1094 obs. of 6 variables
country_sales 6 obs. of 5 variables
daily_salse 31 obs. of 2 variables
monthly_salse 8 obs. of 2 variables
product_sales 22 obs. of 3 variables
sales_data 1094 obs. of 10 variables
Files
Plots
Packages
Help
Viewer
Presentation
Zoom
Export
Publish
Daily Sales
Total Daily Sales
6e+07
4e+07
2e+07
0
10
20
30
Day


Environment
History
Connections
Tutorial
Project: (None)
Import Dataset
342 MiB
R
Global Environment
List
product_sales 22 obs. of 3 variables
sales_data 1094 obs. of 10 variables
sales_df 1094 obs. of 6 variables
Values
total_sales 'formattable' num $990,237,451
Functions
preprocess_sales_... function (chocolate_sales)
Files
Plots
Packages
Help
Viewer
Presentation
Zoom
Export
Publish
Monthly Sales
Total Monthly Sales
1.5e+08
1.4e+08
1.3e+08
1.2e+08
1.1e+08
2
4
6
8
Month
96°F Sunny
2:13 PM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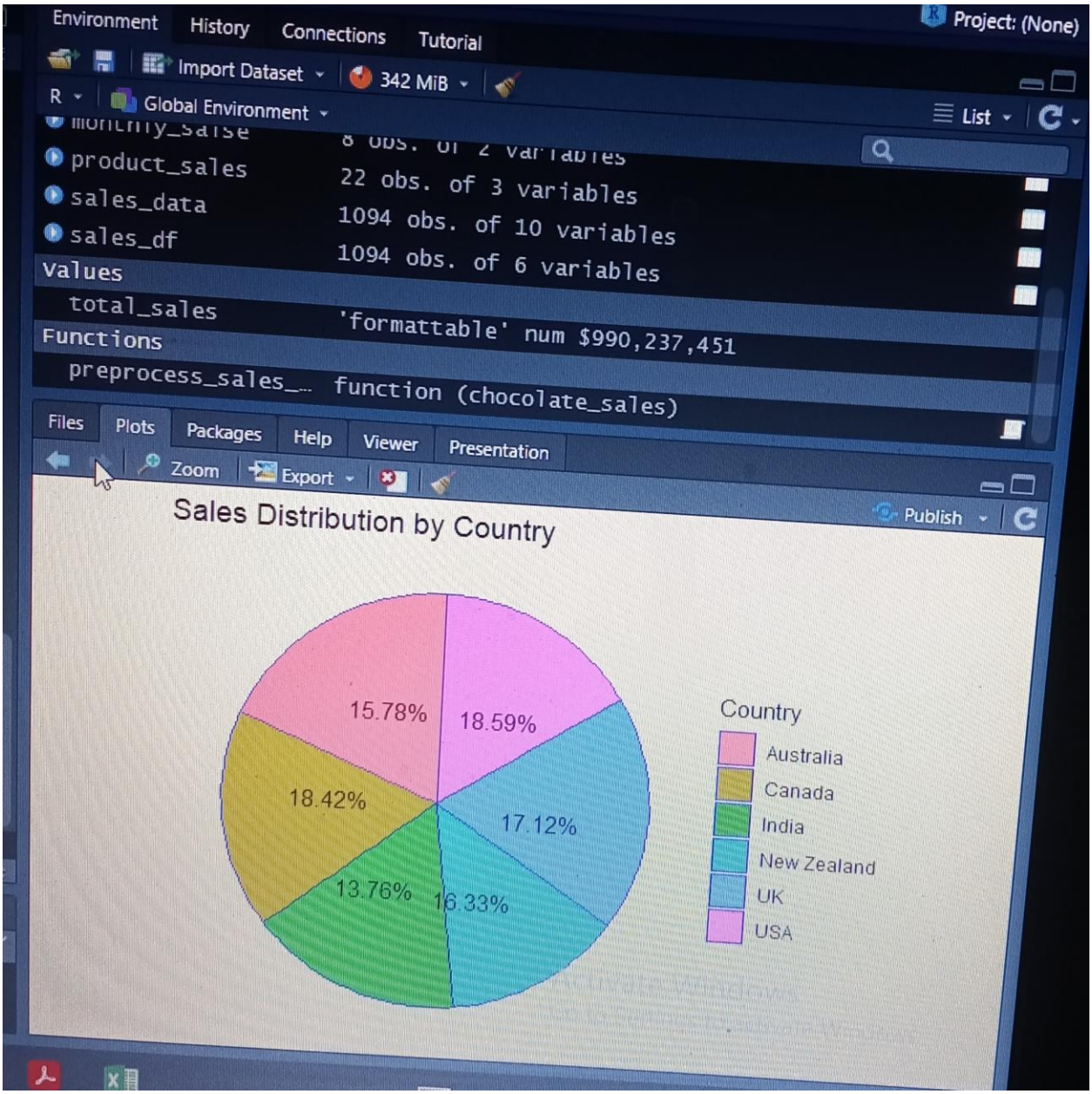
342 MiB
R
Global Environment
List
monthly_sales
product_sales
22 obs. of 3 variables
sales_data
1094 obs. of 10 variables
sales_df
1094 obs. of 6 variables
Values
total_sales
'formattable' num $990,237,451
Functions
preprocess_sales_... function (chocolate_sales)
Files
Plots
Packages
Help
Viewer
Presentation
Zoom
Export
Publish
Sales Distribution by product
Choco Coated Almonds
Almond Choco
Organic Choco Syrup
Fruit & Nut Bars
Orange Choco
85% Dark Bars
70% Dark Bites
Raspberry Choco
Drinking Coco
Caramel Stuffed Bars
Eclairs
Manuka Honey Choco
Baker's Choco Chips
Spicy Special Slims
After Nines
White Choc
Milk Bars
99% Dark & Pure
Mint Chip Choco
Peanut Butter Cubes
50% Dark Bites
Smooth Sliky Salty
Product
0e+00
2e+07
4e+07
Total Product Sales
Activate Windows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Functions
preprocess_sales_... function (chocolate_sales)
Files
Plots
Packages
Help
Viewer
Presentation
Zoom
Export
Publish
Sales Distribution by Country
15.78%
18.59%
18.42%
17.12%
13.76%
16.33%
Country
Australia
Canada
India
New Zealand
UK
USA