Walmart Analytics

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## R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

# Load Data into a DataFrame  
library(readr)  
library(tidyverse)

## Loading tidyverse: ggplot2  
## Loading tidyverse: tibble  
## Loading tidyverse: tidyr  
## Loading tidyverse: purrr  
## Loading tidyverse: dplyr

## Warning: package 'tibble' was built under R version 3.4.1

## Warning: package 'tidyr' was built under R version 3.4.1

## Warning: package 'purrr' was built under R version 3.4.1

## Warning: package 'dplyr' was built under R version 3.4.2

## Conflicts with tidy packages ----------------------------------------------

## filter(): dplyr, stats  
## lag(): dplyr, stats

## library(plyr) #KILLS dplyr  
library(dplyr)  
library(lubridate)

##   
## Attaching package: 'lubridate'

## The following object is masked from 'package:base':  
##   
## date

# DateTime is stored as 13 digit integer  
# This enables loading via Double  
options(digits=13)  
options("digits")

## $digits  
## [1] 13

# 213,495 ROWS 10 VARIABLES  
# INITIAL FILE  
data\_org <- read\_tsv("~/Apps/Walmart/4729-2038.tsv",col\_names=TRUE,trim\_ws = TRUE,col\_types =   
 list(col\_character(),col\_character(),col\_double(),col\_integer(),col\_integer(),  
 col\_integer(),col\_double(),col\_character(),col\_character(),col\_character()))  
summary(data\_org[-(1:2)]) ## File spans Fri, July 21, 2017 8:48 PM to Sun, July 23, 2017 7:59 PM GMT - 4 DST

## order\_time store\_number department   
## Min. :1500681613000 Min. :2222.000000 Min. : 1.00000000   
## 1st Qu.:1500744398000 1st Qu.:2222.000000 1st Qu.:20.00000000   
## Median :1500768377000 Median :2222.000000 Median :76.00000000   
## Mean :1500781290150 Mean :2413.096475 Mean :58.02667978   
## 3rd Qu.:1500831888000 3rd Qu.:2222.000000 3rd Qu.:92.00000000   
## Max. :1500854397000 Max. :3333.000000 Max. :99.00000000   
## register amount upc   
## Min. : 2.00000000 Min. :-40004.00000000 Length:213495   
## 1st Qu.: 9.00000000 1st Qu.: 1.67000000 Class :character   
## Median :15.00000000 Median : 2.97000000 Mode :character   
## Mean :22.81323216 Mean : 5.60629359   
## 3rd Qu.:25.00000000 3rd Qu.: 5.88000000   
## Max. :98.00000000 Max. : 40004.00000000   
## name description   
## Length:213495 Length:213495   
## Class :character Class :character   
## Mode :character Mode :character   
##   
##   
##

# CHECK for DUPLICATED ROWS # NO DUPLICATES  
anyDuplicated(data\_org)

## [1] 0

# FILE AFTER CLEANING Before Extracting Finance & Gas  
# 213,475 ROWS  
data <- read\_tsv("~/Apps/Walmart/data\_clean.tsv",col\_names=TRUE,trim\_ws = TRUE,col\_types =   
 list(col\_character(),col\_character(),col\_double(),col\_integer(),col\_integer(),  
 col\_integer(),col\_double(),col\_character(),col\_character(),col\_character()))  
  
# VIEW DATA for Filtering and Anomalies  
# View(data) ## A data window  
  
# ANALYSIS FOR ANOMOLIES & ELIMINATION  
# Select amounts greater than 200 to examine  
greater\_200 <- subset(data, amount >= 200)  
# LIMIT Columns Displayed  
greater\_200\_01 <- greater\_200[c(-1,-3,-4,-6,-10)]  
# View(greater\_200\_01) ## Departments 86 & 99 are Financial Transactions  
  
# Control Number of lines to pring  
options(dplyr.print\_max = 500)  
options(max.print=300)  
tibble.print\_max = 500  
  
# Discovered the following Financial Transactions  
# Filter in finance file  
finance <- filter(data, (upc == '0000000000040638437479' | upc == '0000000000605388122360' |  
 upc == '0000000000605388122330' | upc == '0000000000605388190350' |  
 upc == '0000000000605388963090' | upc == '0000000000605388122390' |  
 upc == '0000000000079936640209' | upc == '0000000000060538802945' |  
 department == 86  
 ) )  
# View(finance) ## 582 entries  
# upc\_select <- subset(data, upc='0000000000605388122330')  
  
# ELIMINATE FINANCE for separate analysis  
# data\_01 212,893 ROWS  
data\_01 <- filter(data, (upc != '0000000000040638437479' & upc != '0000000000605388122360' &  
 upc != '0000000000605388122330' & upc != '0000000000605388190350' &  
 upc != '0000000000605388963090' & upc != '0000000000605388122390' &  
 upc != '0000000000079936640209' & upc != '0000000000060538802945' &  
 department != 86  
) )  
  
# Examine DISTRIBUTION OF DATA  
summary(data\_01[-(1:2)]) ## File spans Fri, July 21, 2017 8:00 PM to Sun, July 23, 2017 7:59 PM GMT - 4 DST

## order\_time store\_number department   
## Min. :1500681613000 Min. :2222.00000 Min. : 1.00000000   
## 1st Qu.:1500744398000 1st Qu.:2222.00000 1st Qu.:20.00000000   
## Median :1500768383000 Median :2222.00000 Median :76.00000000   
## Mean :1500781300020 Mean :2413.27154 Mean :57.95046338   
## 3rd Qu.:1500831888000 3rd Qu.:2222.00000 3rd Qu.:92.00000000   
## Max. :1500854368000 Max. :3333.00000 Max. :99.00000000   
## register amount upc   
## Min. : 2.00000000 Min. :-174.000000000 Length:212893   
## 1st Qu.: 9.00000000 1st Qu.: 1.660000000 Class :character   
## Median :15.00000000 Median : 2.970000000 Mode :character   
## Mean :22.66936442 Mean : 5.218476981   
## 3rd Qu.:25.00000000 3rd Qu.: 5.870000000   
## Max. :98.00000000 Max. :1498.000000000   
## name description   
## Length:212893 Length:212893   
## Class :character Class :character   
## Mode :character Mode :character   
##   
##   
##

# View(data\_01)  
  
# EXAMINE FLAG & ELIMINATE OUTLYERS  
# -40004.00 & 40004.00 Scan correction 2222 Dept 33 Reg 15 7/22 10:32 PM +/- 40004.00  
  
# Filter out Gas  
# 2,868 ROWS  
gasoline <- filter(data\_01, upc == '0000000000658441000000' | upc == '0000000000658455000000')  
  
# ELIMINATE GASOLINE for separate analysis 0000000000658455000000  
# 210,005 ROWS  
data\_02 <- filter(data\_01, upc != '0000000000658441000000' & upc != '0000000000658455000000')  
  
# EXAMINE SCAN ERRORS -- LARGE NEGATIVES # investigate UPC: 0000000006937419204870  
returns\_over\_100 <- filter(data\_02, amount <= -100.0)

# Examine suspicious returns  
# View(filter(data\_02, upc == '0000000006937419204870'))  
  
# SEGMENT by Stores  
# 2222 has 176,241 ROWS  
# 3333 has 33,774 ROWS  
s\_2222 <- filter(data\_02, store\_number == 2222)  
s\_3333 <- filter(data\_02, store\_number == 3333)  
  
# Convert from 13 integer POSIX to DateTime  
ms\_to\_date = function(ms, t0="1970-01-01", timezone) {  
 ## @ms: a numeric vector of milliseconds (big integers of 13 digits)  
 ## @t0: a string of the format "yyyy-mm-dd", specifying the date that  
 ## corresponds to 0 millisecond  
 ## @timezone: a string specifying a timezone that can be recognized by R  
 ## return: a POSIXct vector representing calendar dates and times   
 sec = ms / 1000  
 as.POSIXct(sec, origin=t0, tz=timezone)  
}  
  
# CONVERT POSIX time and add day & time  
store\_2222 <- mutate(s\_2222,day=day(ms\_to\_date(order\_time,timezone="")),hour=hour(ms\_to\_date(order\_time,timezone="")))  
store\_3333 <- mutate(s\_3333,day=day(ms\_to\_date(order\_time,timezone="")),hour=hour(ms\_to\_date(order\_time,timezone="")))  
  
# Do not display columns 1,4,6,8,10  
# View(select(store\_3333,order\_id,department,amount,day,hour))

# MISSING DATA? Examine by time  
# Store 3333 has MISSING DATA  
store\_2222 %>% group\_by(day,hour) %>% summarise(SpendbyHour=sum(amount)) %>% arrange(day,hour)

## # A tibble: 46 x 3  
## # Groups: day [3]  
## day hour SpendbyHour  
## <int> <int> <dbl>  
## 1 21 20 25912.25  
## 2 21 21 20707.92  
## 3 21 22 18970.96  
## 4 21 23 11369.90  
## 5 22 0 9049.69  
## 6 22 1 2414.80  
## 7 22 2 923.60  
## 8 22 3 647.97  
## 9 22 4 384.68  
## 10 22 5 974.56  
## 11 22 6 1856.06  
## 12 22 8 10544.09  
## 13 22 10 21835.16  
## 14 22 11 27616.64  
## 15 22 12 31467.89  
## 16 22 13 29576.63  
## 17 22 14 33147.27  
## 18 22 15 28161.90  
## 19 22 16 31361.90  
## 20 22 17 27783.40  
## 21 22 18 26570.16  
## 22 22 19 22957.41  
## 23 22 20 19869.80  
## 24 22 21 15921.24  
## 25 22 22 13254.55  
## 26 22 23 8036.19  
## 27 23 0 4962.68  
## 28 23 1 2563.82  
## 29 23 2 977.25  
## 30 23 3 700.04  
## 31 23 4 367.33  
## 32 23 5 791.59  
## 33 23 6 817.83  
## 34 23 7 5053.69  
## 35 23 8 7541.22  
## 36 23 9 15277.74  
## 37 23 10 21027.61  
## 38 23 11 26744.53  
## 39 23 12 27635.20  
## 40 23 13 33632.13  
## 41 23 14 31290.27  
## 42 23 15 33200.31  
## 43 23 16 34491.58  
## 44 23 17 28514.75  
## 45 23 18 26324.85  
## 46 23 19 22825.14

store\_3333 %>% group\_by(day,hour) %>% summarise(SpendbyHour=sum(amount)) %>% arrange(day,hour)

## # A tibble: 27 x 3  
## # Groups: day [3]  
## day hour SpendbyHour  
## <int> <int> <dbl>  
## 1 21 20 7628.14  
## 2 21 21 105.64  
## 3 22 5 2.91  
## 4 22 8 6324.64  
## 5 22 10 13349.96  
## 6 22 11 20217.38  
## 7 22 12 22402.12  
## 8 22 13 19525.44  
## 9 22 14 19042.04  
## 10 22 15 16761.69  
## 11 22 16 17429.35  
## 12 22 17 15426.82  
## 13 22 18 14879.04  
## 14 22 19 8553.88  
## 15 22 20 7529.24  
## 16 22 21 178.66  
## 17 23 6 45.93  
## 18 23 10 11487.82  
## 19 23 11 18653.40  
## 20 23 12 19400.49  
## 21 23 13 17878.92  
## 22 23 14 21758.59  
## 23 23 15 20386.51  
## 24 23 16 16650.87  
## 25 23 17 17981.33  
## 26 23 18 5081.24  
## 27 23 19 243.95

# Store to Store Comparison Spending by Day  
store\_2222 %>% group\_by(day) %>% summarise(SpendbyHour=sum(amount)) %>% arrange(day)

## # A tibble: 3 x 2  
## day SpendbyHour  
## <int> <dbl>  
## 1 21 76961.03  
## 2 22 364355.59  
## 3 23 324739.56

store\_3333 %>% group\_by(day) %>% summarise(SpendbyHour=sum(amount)) %>% arrange(day)

## # A tibble: 3 x 2  
## day SpendbyHour  
## <int> <dbl>  
## 1 21 7733.78  
## 2 22 181623.17  
## 3 23 149569.05

# dplyr::summarise(by\_order,sum(amount) )  
store\_3333 %>% group\_by(order\_id) %>% summarise(items=n(), basket=sum(amount)/items) %>% arrange(desc(basket))

## # A tibble: 4,561 x 3  
## order\_id items basket  
## <chr> <int> <dbl>  
## 1 613310228166486171558 1 778.00  
## 2 715431801330260347926 1 499.81  
## 3 503310425152486148538 1 399.98  
## 4 981114965216895289149 2 349.98  
## 5 303350924199482184548 1 329.91  
## 6 551154569216892299159 2 314.49  
## 7 686877295822514855401 1 299.00  
## 8 212086187411750427035 1 289.00  
## 9 684958977682935681213 1 269.98  
## 10 389441403390269319986 1 269.94  
## # ... with 4,551 more rows

# ITEMS > $100  
store\_2222 %>% filter(amount >= 100.0) %>% select(order\_id,department,amount,name) %>% arrange(desc(amount))

## # A tibble: 190 x 4  
## order\_id department amount name  
## <chr> <int> <dbl> <chr>  
## 1 7548467798821314609859 72 1498.00 SAM UHD TV  
## 2 946769956760105853705 38 1166.86 RX# 7332999  
## 3 774016286415959298468 72 898.00 SAM UHD TV  
## 4 971104567207797072286 72 698.00 60 VIZIO 4K  
## 5 086877092890314611869 72 559.00 HP 15-CD040  
## 6 86787192873319699899 38 543.87 RX# 7317882  
## 7 62206382405959277478 38 531.62 RX# 7335865  
## 8 533390429127685388152 72 429.00 IPAD  
## 9 08079752791103895725 38 408.39 RX# 7342888  
## 10 15330827106682322122 38 403.22 RX# 7341885  
## 11 889665736934028712983 72 399.00 IPAD MINI 4  
## 12 858625939962020773993 72 399.00 HP 17 A10  
## 13 486847197821314699829 72 398.00 ROKU 55 4K  
## 14 363292440057879104034 72 398.00 ROKU 55 4K  
## 15 92306981469958288488 38 378.48 RX# 7342951  
## 16 503320823151686373122 72 378.00 43 LED TV  
## 17 000086489484959236488 72 378.00 48 LED HDTV  
## 18 62206382405959277478 38 372.64 RX# 7335869  
## 19 15330827106682322122 38 365.91 RX# 7342284  
## 20 9135719574241910581 38 338.54 RX# 7342912  
## 21 919573413584242961541 72 328.00 50 1080P TV  
## 22 43614262257796062266 38 325.33 RX# 7342726  
## 23 7014303384460503300 38 319.65 RX# 7342971  
## 24 140252444002878189024 72 318.00 40 LED HDTV  
## 25 747605636934026742983 72 299.00 HP LAPTOP  
## 26 212016181483957295408 5 299.00 PS4 1TB SL  
## 27 335300527127685348172 5 299.00 PS4 1TB SL  
## 28 565421302371462502350 72 298.00 PHILIPS 40  
## 29 010134264214790034226 10 279.88 6.2 AM/FM  
## 30 244948771671538423667 5 279.00 PS4 COD  
## 31 201184662239791096236 72 279.00 HP CHROMEBO  
## 32 175340321198685382192 72 279.00 HP 15 CEL  
## 33 247729655779103832735 72 278.00 VIZIO 43HDTV  
## 34 061282449049873127054 71 269.00 FARM TVSTAND  
## 35 624998978603534417677 72 268.00 43 INCH SHA  
## 36 012154869284799043246 72 268.00 43 INCH SHA  
## 37 866779857709104881725 72 268.00 43 INCH SHA  
## 38 957533714535248925581 72 268.00 43 INCH SHA  
## 39 91806084439958284488 38 263.23 RX# 2233429  
## 40 021292942075874140054 79 250.00 TRAVEL SYSTE  
## 41 193370522111685342132 74 249.00 BI PH REV PT  
## 42 343390329121680340182 7 249.00 700C M SCH  
## 43 908615734934020722993 5 249.00 XB1 HDWR  
## 44 32206883469958288438 38 248.38 RX# 7301501  
## 45 737563819543244922531 74 239.00 SHARK VAC  
## 46 672928876603535417687 72 228.00 39 LED HDTV  
## 47 787719854752109810795 72 219.00 TAB E 9.6  
## 48 816789752752107800715 72 219.00 HP 14-AX030  
## 49 846887892858314622879 9 209.00 14FT COMBO  
## 50 252154966224795095286 9 198.00 20 X10 TENT  
## 51 309461904332468557310 72 198.00 32 LED HDTV  
## 52 71322545028876164054 38 194.28 RX# 2233481  
## 53 622978476603539447687 72 189.99 APPLE IPOD  
## 54 797709052736108886755 74 189.00 BIS PH 2X R  
## 55 768769754700104870705 9 188.00 SHOTGUN  
## 56 060184365254791067206 11 188.00 45PT DEHUM  
## 57 737749459766104883785 11 188.00 DEHUMIDIFIER  
## 58 494026584436954219498 11 188.00 DEHUMIDIFIER  
## 59 486928874676536498657 16 187.00 2N1 LW RDR  
## 60 220282941054873176064 72 179.00 11.6 TABLET  
## 61 507605930970028729913 7 179.00 26M MONGOOSE  
## 62 011232744092871136044 71 179.00 BUNK BED WN  
## 63 595300021198689382132 71 179.00 BUNK BED WN  
## 64 240134760224792005276 72 179.00 AC CHROME  
## 65 557605436934020742903 72 178.00 NETG AC1750  
## 66 589523017581245990561 72 178.00 MOTO AC1900  
## 67 588615335925029710963 74 178.00 NAV LIFT AWA  
## 68 558625136989023777963 16 174.00 HEDGETRIMMER  
## 69 587625331965028751913 79 169.00 DOUBLE SIT N  
## 70 759411201381461572300 14 169.00 10PC SET HA  
## 71 777685438911023730903 49 168.00 RX FRAME  
## 72 754827690873318649889 38 166.90 RX# 7342777  
## 73 432066981469958228438 38 160.00 RX# 7340582  
## 74 558625136989023777963 16 159.88 HEDGETRIMMER  
## 75 385563718516247984521 87 159.00 IPHNSE32GRY  
## 76 191310624101685362122 17 159.00 AREA RUG  
## 77 557615030975027725913 79 159.00 GRACO SOLANO  
## 78 567615834945020730983 79 159.00 TRAVELSYSTEM  
## 79 023340329151684343132 9 159.00 INST CANOPY  
## 80 411194865264793066266 14 159.00 MICROWAVE  
## 81 44487894841319695829 38 158.03 RX# 7303433  
## 82 450154866284796022296 74 157.74 HVR UPRIGHT  
## 83 754827690873318649889 38 155.50 RX# 7342775  
## 84 492948679668538464697 82 150.00 DEBIT LOAD  
## 85 492948679668538464697 82 150.00 DEBIT LOAD  
## 86 967709750773100864795 10 149.76 BATT-H7  
## 87 335543111555246991501 14 149.00 VEGGIEBULLET  
## 88 768709752729102881775 7 149.00 700 C L ADMR  
## 89 250114068254793067276 7 149.00 700C PATHWAY  
## 90 083390829121687380142 7 149.00 24 G SCH SI  
## 91 165300522180685366102 72 149.00 CHARGE 3  
## 92 169471308308469526360 87 149.00 ST Z936VL  
## 93 345401901301467527380 7 149.00 24 G SCH SI  
## 94 714817194887319630869 7 149.00 27.5 M GEN  
## 95 519411006323467547370 7 149.00 24 G SCH SI  
## 96 918615532989020747983 7 149.00 700 M PTHWAY  
## 97 926719656759104884785 79 149.00 FP ELPH SWNG  
## 98 155350529110683317142 74 149.00 SHARK NAVIGA  
## 99 203252949049873167074 87 149.00 FITBITALTAHR  
## 100 347543719563249940591 7 149.00 MENS BIKE  
## 101 19341808308463516310 87 149.00 FITBITALTAHR  
## 102 585513314535246925521 72 148.00 32 TCL ROKU  
## 103 976749857740101815725 72 148.00 32 TCL ROKU  
## 104 706759257777106845765 72 148.00 32 TCL ROKU  
## 105 442194363265796089276 10 147.87 DUAL DVD  
## 106 401134162239791096256 10 147.87 DUAL DVD  
## 107 660016686485954290418 16 147.00 GAS GRILL  
## 108 203292040057875134054 72 145.00 APPLE IPOD  
## 109 786847891885314616869 82 140.00 DEBIT LOAD  
## 110 708807292885311647889 79 139.00 TRAVSYSTM  
## 111 557605533935023786963 79 139.00 GR TRX NYC  
## 112 652998270667531433687 74 139.00 SHARK STM  
## 113 253232140057879164064 6 139.00 INST CAMERA  
## 114 597523114551245934591 71 139.00 EXEC CHAIR  
## 115 189461505381460582390 79 139.00 GR TRX NYC  
## 116 547685336989020797943 72 138.00 24 LED SMT  
## 117 025350221198686312172 72 138.00 24 LED SMT  
## 118 15330827106682322122 38 137.75 RX# 8819422  
## 119 892998271671539403627 72 134.00 BEATS HP  
## 120 494948372699537415637 49 130.00 COOPER CLENS  
## 121 494948372699537415637 49 130.00 COOPER CLENS  
## 122 091252746067873153014 9 129.00 13X13 CANOPY  
## 123 717759751749101813775 9 129.00 13X13 CANOPY  
## 124 507675239993028722943 7 129.00 MENS BICYCLE  
## 125 806817798839311663849 7 129.00 20 B REBEL  
## 126 319543211563246900561 72 129.00 HIGHQ TABLE  
## 127 716827194889311651889 7 129.00 MENS BICYCLE  
## 128 319593313553240986501 72 129.00 BT SPEAKER  
## 129 519411006323467547370 7 129.00 700C SPINFIT  
## 130 918615532989020747983 7 129.00 700C M HYPER  
## 131 063222240025871134094 71 129.00 MATTRESS TWN  
## 132 577573814575244919501 79 129.00 TRIUMPHFLYNN  
## 133 737563819543244922531 71 129.00 MATTRESS TWN  
## 134 13230929106682352112 38 128.56 RX# 7342666  
## 135 736827596898310687889 72 128.00 LG SOUNDBAR  
## 136 345573314573248937561 72 128.00 LED HDTV  
## 137 212006980477958289408 49 128.00 RX FRAME  
## 138 578685730939026745923 74 128.00 3.1C.F. 2 DR  
## 139 185481001331469558380 72 125.00 RCA 10.1  
## 140 377593115584241981551 72 125.00 RCA 10.1  
## 141 261232946052878106064 16 124.00 HT PUSHMOWER  
## 142 597523216505247968531 72 124.00 HP OJ 8702  
## 143 390194569228797013216 10 122.00 AUTO TIRES  
## 144 390194569228797013216 10 122.00 AUTO TIRES  
## 145 390194569228797013216 10 122.00 AUTO TIRES  
## 146 390194569228797013216 10 122.00 AUTO TIRES  
## 147 460104163247792036256 38 119.12 RX# 7342881  
## 148 692066182405954267478 38 119.12 RX# 2233464  
## 149 726887292807314673809 7 119.00 27.5MPARKSID  
## 150 672026982484959286498 7 119.00 27.5MPARKSID  
## 151 033330724130689350162 71 119.00 CHAIROTTOMAN  
## 152 776887891807314673809 16 119.00 40V COMBO  
## 153 948635636922021772973 7 119.00 27.5MPARKSID  
## 154 387523314515240923521 72 119.00 PARTY SPKR  
## 155 129431005367469513360 74 119.00 4.3 C.F. 1DR  
## 156 718749154752102890755 72 118.00 ELEMENT 21.  
## 157 718749154752102890755 72 118.00 ELEMENT 21.  
## 158 212006980477958289408 49 118.00 RX FRAME  
## 159 400124963247796046276 38 114.40 RX# 7342769  
## 160 587695832945028700933 14 114.00 MICROWAVE  
## 161 816877290897318609829 9 114.00 INST CANOPY  
## 162 045310827121685360122 9 114.00 INST CANOPY  
## 163 26687194855319693899 49 112.00 RX FRAME  
## 164 491114366269791081216 11 112.00 5K MECH AC  
## 165 031232441075878100024 11 112.00 5K MECH AC  
## 166 031232441075878100024 11 112.00 5K MECH AC  
## 167 518675637903024780983 10 109.88 AM/FM CD RE  
## 168 569563714550244958581 10 109.00 AUTO TIRES  
## 169 569563714550244958581 10 109.00 AUTO TIRES  
## 170 654036384436950259478 71 109.00 TBLSET  
## 171 579543914550241928531 10 108.00 AUTO TIRES  
## 172 579543914550241928531 10 108.00 AUTO TIRES  
## 173 492026786460957273448 10 108.00 PIO A5702  
## 174 349533118515242973581 3 108.00 84PLCE  
## 175 958625730991023756913 10 108.00 AUTO TIRES  
## 176 958625730991023756913 10 108.00 AUTO TIRES  
## 177 724887693885311662809 10 107.22 BATT-51R  
## 178 155411203367461563300 82 105.44 MC 100 DOTS  
## 179 33922443037877116074 38 103.90 RX# 7342982  
## 180 213242443037877156004 38 102.57 RX# 7330904  
## 181 97365330991023736933 99 100.00 W B  
## 182 602086986415958288488 5 100.00 ITUNES 100  
## 183 370124869228796013226 10 100.00 LT265/70R17/  
## 184 370124869228796013226 10 100.00 LT265/70R17/  
## 185 370124869228796013226 10 100.00 LT265/70R17/  
## 186 370124869228796013226 10 100.00 LT265/70R17/  
## 187 6278392898310677869 99 100.00 WALMART GEN  
## 188 105461005331469518380 82 100.00 TMOBILE 100  
## 189 88579551773105854755 99 100.00 W B  
## 190 936759852752105850755 5 100.00 XBOXGC 100

store\_3333 %>% filter(amount >= 100.0) %>% select(order\_id,department,amount,name) %>% arrange(desc(amount))

## # A tibble: 171 x 4  
## order\_id department amount name  
## <chr> <int> <dbl> <chr>  
## 1 613310228166486171558 5 778.00 55UHDSMARTCU  
## 2 90106183415758458055 74 712.49 IPHONE 7  
## 3 720086584448757451085 60 599.00 OAKBRIDGEQN  
## 4 551154569216892299159 60 591.00 ICOMFQN  
## 5 715431801330260347926 17 499.81 RECLINE SOFA  
## 6 677605436983122902822 16 499.00 GRILL  
## 7 503310425152486148538 16 399.98 EVENT GRILL  
## 8 981114965216895289149 10 399.98 BLACK MAX 3  
## 9 426847093899516873411 17 399.00 CONVERT SOFA  
## 10 456867692817510859441 20 398.00 IPAD  
## 11 40414064289896268139 27 395.32 RX# 6732532  
## 12 755431104320269358946 60 389.00 WYNSTONEFU  
## 13 605300426142485147508 60 389.00 WYNSTONEFU  
## 14 160016288468756469055 16 349.98 SMOKEHOLLOW  
## 15 978799759730305753640 27 349.46 RX# 6736330  
## 16 303350924199482184548 66 329.91 PERIDOT PEND  
## 17 111252143034678096367 16 299.98 PACCN120E  
## 18 523212246064672029357 15 299.98 ROOMBA 665  
## 19 981114965216895289149 11 299.98 MEGA STORAGE  
## 20 686877295822514855401 67 299.00 DIA BAND  
## 21 584938070627938633293 5 298.88 SHARP 40 TV  
## 22 584938070627938633293 5 298.88 SHARP 40 TV  
## 23 212086187411750427035 66 289.00 LAB SAPP NCK  
## 24 40414064289896268139 27 285.32 RX# 6736373  
## 25 604877093877511856451 6 279.00 SAMSUNG 8X4  
## 26 466817994849513855491 60 269.98 BRINDALEFULL  
## 27 684958977682935681213 60 269.98 BRINDALEFULL  
## 28 389441403390269319986 7 269.94 TRAMPOLINE  
## 29 63422449052674040347 99 265.03 SAM'S CELEB  
## 30 63422449052674040347 99 263.03 SAM'S CELEB  
## 31 63422449052674040347 99 263.03 SAM'S CELEB  
## 32 395461209390269372996 6 259.00 NIKON B500  
## 33 81522142067675026307 27 256.48 RX# 6734206  
## 34 454036381499758494005 9 249.81 Stand Up Pad  
## 35 605300426142485147508 17 249.00 94X120 - LA  
## 36 765451108344268313906 16 229.91 Masterbuilt  
## 37 806779650765300770640 20 217.00 BEATS  
## 38 663292645033675010367 50 213.97 235/60R18  
## 39 663292645033675010367 50 213.97 235/60R18  
## 40 663292645033675010367 50 213.97 235/60R18  
## 41 663292645033675010367 50 213.97 235/60R18  
## 42 061262349057674084397 5 200.02 VIZIO50SMART  
## 43 006827697849513804411 60 199.98 BRINDALETW  
## 44 050184169286896295109 60 199.98 BRINDALETW  
## 45 482056385478753493065 16 199.98 WAGON  
## 46 595310628166487141538 11 199.98 Seville Clas  
## 47 200104367266893207129 64 199.88 ION PA PRO  
## 48 599401408390262392986 64 199.88 ION PA PRO  
## 49 997523518576049508744 64 199.88 ION PA PRO  
## 50 466719555785309788640 32 199.86 LZB B&T SPR  
## 51 736857897851510825401 27 196.56 RX# 2218511  
## 52 731174665211892282109 50 193.82 235/45R18  
## 53 731174665211892282109 50 193.82 235/45R18  
## 54 731174665211892282109 50 193.82 235/45R18  
## 55 731174665211892282109 50 193.82 235/45R18  
## 56 200164662216895221159 5 189.77 VIZIO 32 1  
## 57 395390421152484125518 5 189.77 VIZIO 32 1  
## 58 682076489468759484035 61 184.98 GARMIN 60LMT  
## 59 250056883400754474015 92 179.82 DURACL 31DTM  
## 60 250056883400754474015 92 174.82 DURACL 31AGM  
## 61 826817094844517815491 29 169.87 OJ PRO 8715  
## 62 697593415570041522754 88 166.00 NL 1.67 NIKN  
## 63 697593415570041522754 88 166.00 NL 1.67 NIKN  
## 64 437593116577047555764 50 158.99 225/45R18XL  
## 65 437593116577047555764 50 158.99 225/45R18XL  
## 66 437593116577047555764 50 158.99 225/45R18XL  
## 67 437593116577047555764 50 158.99 225/45R18XL  
## 68 856739057763305751600 88 157.50 NL NIKON PF  
## 69 856739057763305751600 88 157.50 NL NIKON PF  
## 70 90106183415758458055 71 150.00 VZN  
## 71 937615434900122999872 21 149.98 Serta 4 Pil  
## 72 113390425180488182538 11 149.98 4 LEVEL RACK  
## 73 682928575697937651293 16 149.98 WINDOW AIR  
## 74 646759950765304730610 15 149.98 SHARK NV95  
## 75 874934438372622936659293 61 149.88 1350 BACKUP  
## 76 498779354766309777680 50 149.88 235/70R16  
## 77 498779354766309777680 50 149.88 235/70R16  
## 78 498779354766309777680 50 149.88 235/70R16  
## 79 163340928120486190528 64 149.00 IONOUTBACK  
## 80 650016587411750477055 66 149.00 GOLD NECK  
## 81 724827890849513835401 20 148.00 BEATS  
## 82 460134365239895236119 31 145.81 HP 15.6 NB  
## 83 142938871622937616233 50 145.16 235/65R16  
## 84 142938871622937616233 50 145.16 235/65R16  
## 85 142938871622937616233 50 145.16 235/65R16  
## 86 142938871622937616233 50 145.16 235/65R16  
## 87 9094571901390269399926 69 144.98 DISNEY  
## 88 9094571901390269399926 69 144.98 DISNEY  
## 89 9094571901390269399926 69 144.98 DISNEY  
## 90 9094571901390269399926 69 144.98 DISNEY  
## 91 9094571901390269399926 69 144.98 DISNEY  
## 92 9094571901390269399926 69 144.98 DISNEY  
## 93 9094571901390269399926 69 144.98 DISNEY  
## 94 9094571901390269399926 69 144.98 DISNEY  
## 95 9094571901390269399926 69 144.98 DISNEY  
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## 107 9094571901390269399926 69 144.98 DISNEY  
## 108 9094571901390269399926 69 144.98 DISNEY  
## 109 9094571901390269399926 69 144.98 DISNEY  
## 110 9094571901390269399926 69 144.98 DISNEY  
## 111 9094571901390269399926 69 144.98 DISNEY  
## 112 9094571901390269399926 69 144.98 DISNEY  
## 113 9094571901390269399926 69 144.98 DISNEY  
## 114 9094571901390269399926 69 144.98 DISNEY  
## 115 119481207371266393906 69 144.98 DISNEY  
## 116 319573318576045578724 64 140.02 MONSTER RR 3  
## 117 968719454765301783610 2 139.98 ORAL B 3000  
## 118 410036584448756411065 15 139.98 1.6MICROWAVE  
## 119 053262940036678088317 88 139.00 OPTICALFRAME  
## 120 775300227155481191588 50 130.99 235/60R17  
## 121 775300227155481191588 50 130.99 235/60R17  
## 122 775300227155481191588 50 130.99 235/60R17  
## 123 775300227155481191588 50 130.99 235/60R17  
## 124 987749357765309793680 15 129.98 5.1 CU FT C  
## 125 327563315571048527764 15 129.98 5.1 CU FT C  
## 126 327563315571048527764 15 129.98 5.1 CU FT C  
## 127 724867798849513814411 68 129.98 SAMSONITE  
## 128 832918971627938629293 10 129.98 BLACK MAX 1  
## 129 588665939993123946892 60 129.98 BOXSPRINGQN  
## 130 720086584448757451085 60 129.98 BOXSPRINGQN  
## 131 519553714501042546724 61 129.97 AC3200 TRI-B  
## 132 195451205390266382966 20 129.88 FITBITCHARGE  
## 133 061232447088674050367 20 129.88 Fitbit Charg  
## 134 466719555785309788640 32 129.88 COMM CHAIR  
## 135 602026187411750457035 66 129.00 925 SET  
## 136 467635036988121939822 50 128.53 225/50R17  
## 137 467635036988121939822 50 128.53 225/50R17  
## 138 467635036988121939822 50 128.53 225/50R17  
## 139 467635036988121939822 50 128.53 225/50R17  
## 140 567645136988127929842 50 127.99 225/55R16  
## 141 466817994849513855491 60 127.98 BOXSPRINGFU  
## 142 605300426142485147508 60 127.98 BOXSPRINGFU  
## 143 070194460216894248119 36 120.98 R-134A 30LB  
## 144 866837392844516868411 50 120.88 215/65R16  
## 145 866837392844516868411 50 120.88 215/65R16  
## 146 577523116577047545784 50 120.13 P245/65R17  
## 147 577523116577047545784 50 120.13 P245/65R17  
## 148 997523518576049508744 64 120.02 MONSTER RR 3  
## 149 778789354711307717620 12 119.91 Instant Gaze  
## 150 201282248044672008337 7 119.81 JUMPNPLAY  
## 151 776719552766306727680 50 119.14 215/55R17  
## 152 776719552766306727680 50 119.14 215/55R17  
## 153 327533615570041512704 88 119.00 COACH FRAME  
## 154 286807592844517868481 50 117.97 185/65R15  
## 155 286807592844517868481 50 117.97 185/65R15  
## 156 286807592844517868481 50 117.97 185/65R15  
## 157 286807592844517868481 50 117.97 185/65R15  
## 158 568695231966123911852 68 115.00 MICHAEL KORS  
## 159 270154763211891222119 50 109.99 215/55R16  
## 160 270154763211891222119 50 109.99 215/55R16  
## 161 938799355789301746620 16 109.98 WINDOW AIR  
## 162 329491007399269322956 16 109.98 CHLORINE  
## 163 727789254711309757680 12 109.91 Teak Porch R  
## 164 529655434913124964862 64 109.02 MONSTER RR 3  
## 165 872988871622934666263 92 105.88 DURACL 47  
## 166 481144665211894272169 92 104.54 DURACL 35  
## 167 577695334900125959802 92 103.88 Duracell Aut  
## 168 165401407399263383946 92 102.47 DURACL 24F  
## 169 470076384407758449065 88 102.00 SV 1.67 NKTR  
## 170 470076384407758449065 88 102.00 SV 1.67 NKTR  
## 171 432164963211892282159 92 100.87 DURACL 34

# Department Summary  
# Total Spending  
store\_2222 %>% summarise(items=n(), DeptTotal=sum(amount)) %>% arrange(desc(DeptTotal))

## # A tibble: 1 x 2  
## items DeptTotal  
## <int> <dbl>  
## 1 176241 766056.18

# Spending by Department  
store\_2222 %>% group\_by(department) %>% summarise(items=n(), DeptTotal=sum(amount)) %>% arrange(desc(DeptTotal))

## # A tibble: 66 x 3  
## department items DeptTotal  
## <int> <int> <dbl>  
## 1 92 22851 52264.89  
## 2 2 11345 47309.00  
## 3 95 16856 44217.87  
## 4 40 5524 35806.13  
## 5 90 13294 34784.46  
## 6 94 16851 33354.15  
## 7 13 5497 24742.46  
## 8 79 3050 23177.43  
## 9 46 4175 22560.50  
## 10 91 6722 22163.91  
## 11 72 466 22079.38  
## 12 10 1977 22043.02  
## 13 23 2216 21592.22  
## 14 9 2261 20985.58  
## 15 7 1517 20038.10  
## 16 4 4461 19893.37  
## 17 74 2152 18446.48  
## 18 3 8462 17848.18  
## 19 93 3138 16686.62  
## 20 14 2163 15069.48  
## 21 82 4870 14293.90  
## 22 34 1985 12746.57  
## 23 96 1364 12715.84  
## 24 38 395 12637.37  
## 25 8 2660 11808.21  
## 26 11 1425 11790.80  
## 27 1 2981 9847.04  
## 28 25 834 9784.05  
## 29 22 782 9710.30  
## 30 17 1132 9225.83  
## 31 81 3944 8996.84  
## 32 97 2744 8519.41  
## 33 16 1084 8321.48  
## 34 5 413 7661.16  
## 35 80 1531 6444.80  
## 36 20 1099 5961.89  
## 37 87 355 5740.88  
## 38 98 2268 5356.94  
## 39 33 940 5189.50  
## 40 26 996 5188.41  
## 41 49 182 5021.04  
## 42 71 169 4744.81  
## 43 29 569 4677.33  
## 44 24 700 4663.32  
## 45 67 1553 3850.38  
## 46 32 419 3711.64  
## 47 31 388 3077.30  
## 48 19 955 2968.66  
## 49 30 341 2931.58  
## 50 12 421 2021.79  
## 51 37 375 1961.33  
## 52 36 189 1801.22  
## 53 21 235 1410.38  
## 54 35 150 1276.82  
## 55 99 43 1157.54  
## 56 56 330 1147.37  
## 57 27 182 1039.73  
## 58 6 38 772.34  
## 59 28 96 405.44  
## 60 85 93 266.90  
## 61 60 12 98.00  
## 62 18 17 23.15  
## 63 52 1 13.70  
## 64 15 1 5.97  
## 65 39 1 2.99  
## 66 83 1 1.00

# Spending by Customer ID  
tibble.print\_max = Inf  
# View(store\_2222 %>% group\_by(order\_id) %>% summarise(items=n(), basket=sum(amount)/items) %>% arrange(desc(basket)))  
# View(store\_2222)