R_3_loops

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#1. Load and call data

```
library(readxl)
BlackFriday <- read_excel("C:/Users/mmsax/School_Portfolio/Coding_skills/BlackFriday.xlsx")
colnames(BlackFriday)
```

```
##  [1] "User_ID"                    "Product_ID"
##  [3] "Gender"                     "Age"
##  [5] "Occupation"                 "City_Category"
##  [7] "Stay_In_Current_City_Years" "Marital_Status"
##  [9] "Product_Category_1"         "Product_Category_2"
## [11] "Product_Category_3"         "Purchase"
```

```
#str(BlackFriday)
```

2. Find the average of purchase amount using for loop.

```
total2 <- 0

for (index2 in c(1: nrow(BlackFriday))){
  total2 <- total2 + BlackFriday[index2, 'Purchase']
}
### It not necessary to name a variable unless it will be used in the future.
average2 <- total2/nrow(BlackFriday)
print(paste('The average purchase amount is $', round(average2, 2), sep = ''))
```

```
## [1] "The average purchase amount is $9152.49"
```

3. Find the average of purchase amount using while loop.

```
total3 <- 0
index3 <- 1  ## must start at 1 - 0 index does not exist

while (index3 <= nrow(BlackFriday)){
  total3 <-  total3 + BlackFriday[index3, 'Purchase']
```

```
  index3 <- index3 + 1
}

# Unnecessary to name a variable unless required
# average3 <- total3/nrow(BlackFriday)
#print(paste('The average purchase amount is $', round(average3, 2), sep = ''))

print(paste('The average purchase amount is $', round((total3/nrow(BlackFriday)), 2), sep = ''))
```

```
## [1] "The average purchase amount is $9152.49"
```

4. Find the average of purchase amount using repeat loop.

```
total4 <- 0
index4 <- 1
repeat {
  total4 <- total4 + BlackFriday[index4, 'Purchase']
  index4 <- index4 + 1
if (index4 > nrow(BlackFriday)){
  break
}
}
# Unnecessary to name a variable unless required
# average4 <- total4 / nrow(BlackFriday)
# print(average4)
print(paste('The average purchase amount is $', round((total4 / nrow(BlackFriday)), 2), sep = ''))
```

```
## [1] "The average purchase amount is $9152.49"
```

5. Find the average of purchase amount for female shoppers using for loop

```
total5 <- 0
count5 <- 0
for (index5 in c(1: nrow(BlackFriday))){
  if(BlackFriday[index5, 'Gender'] == 'F'){
    total5 <- total5 + BlackFriday[index5, 'Purchase']
    count5 <- count5 + 1
  }
}

# Unnecessary to name a variable unless required
# average5 <- total5/count5
# print(average5)
print(paste('The average purchase amount by female shoppers is $', round(total5/count5, 2), sep = ''))
```

```
## [1] "The average purchase amount by female shoppers is $8550.2"
```

6. Find the average of purchase amount for female shoppers using while loop.

```
total6 <- 0
index6 <- 1  ## must start at 1 - 0 index does not exist
count6 <- 0
while (index6 <= nrow(BlackFriday)){
  if(BlackFriday[index6, 'Gender'] == 'F'){
    total6 <-  total6 + BlackFriday[index6, 'Purchase']
    count6 <- count6 + 1
  }
  index6 <- index6 + 1  # index counter has to be outside while loop or will enter infinite loop
}

# Unnecessary to name a variable unless required
#average6 <- total6/count6
#print(average6)
print(paste('The average purchase amount by female shoppers is $', round(total6/count6, 2), sep = ''))
```

```
## [1] "The average purchase amount by female shoppers is $8550.2"
```

7. Find the average of purchase amount for female shoppers using repeat loop.

```
total7 <- 0
count7 <- 0
index7 <- 1
repeat {
  if (index7 > nrow(BlackFriday)){
    break
  }
  if(BlackFriday[index7, 'Gender'] == 'F'){
    total7 <- total7 + BlackFriday[index7, 'Purchase']
    count7 <- count7 + 1
  }
  index7 <-  index7 + 1
}

print(paste('The average purchase amount by female shoppers is $', round(total7/count7, 2), sep = ''))
```

```
## [1] "The average purchase amount by female shoppers is $8550.2"
```

8. Find the differences between the average of purchase amount for female and male shoppers.

```
male_count <- 0
female_count <- 0
male_sum <- 0
female_sum <- 0
```

```r
for (index8 in 1: nrow(BlackFriday)){
  if (BlackFriday[index8, 'Gender'] == 'M'){
    male_sum <- male_sum + BlackFriday[index8, 'Purchase']
    male_count <- male_count + 1
  } else if (BlackFriday[index8, 'Gender'] == 'F') {
    female_sum <- female_sum + BlackFriday[index8, 'Purchase']
    female_count <-  female_count + 1
  }
}

## Several methods below:
#print(paste('The male purchase average is $', round((male_sum/male_count), 2), sep = ''))

#print(paste('The female purchse average is $', round((female_sum/female_count), 2), sep = ''))

print(paste('The male purchase average is $', round((male_sum / male_count), 2), ' and the female purcha
```

```
## [1] "The male purchase average is $9338.95 and the female purchase average is $8550.2"
```

```r
print(paste('Therefore the difference in purchase average between males and females is $', round((male_s
```

```
## [1] "Therefore the difference in purchase average between males and females is $ 788.75"
```