

# Data Manipulation - Assignment 4

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## Libraries and Data

```
library(DBI)
library(tibble)
library(RMySQL)
library(readr)
library(dplyr)
#install.packages("scales")
library(scales) #for the percent() function
library(knitr) #for kable function
```

## Connect to Classic Models database

```
conn<- dbConnect(RMySQL::MySQL(), 'richardtwatson.com', dbname="ClassicModels", user="student", password="student")
```

### Pulling in database tables as data frames

```
Customers<-dbReadTable(conn, "Customers")
Payments<-dbReadTable(conn, "Payments")
```

### Calculating total payments of all customers

```
tot_payment<-sum(Payments$amount)
```

### Creating a new data frame for customer payments

```
groupPayments<- Payments%>%
  group_by(customerNumber)%>%
  summarize(totalCustPayment = sum(amount))%>%
  mutate(percOfTotal = percent(totalCustPayment/tot_payment)) %>%
  mutate(rank = 99-row_number(totalCustPayment))%>%
  arrange(desc(totalCustPayment))
```

### Assign categories based on rank

```
groupPayments$category = case_when(
  groupPayments$rank <= (.20*nrow(groupPayments)) ~ "A",
  groupPayments$rank <= (.50*nrow(groupPayments)) & groupPayments$rank > (.20*nrow(groupPayments)) ~ "B",
  groupPayments$rank > (.50*nrow(groupPayments)) ~ "C")
```

## Joining the Customer and groupPayments tables

```
ABC<-select(inner_join(groupPayments, Customers), customerName, totalCustPayment, percOfTotal, category)
## Joining, by = "customerNumber"
```

## Creating and printing the final table of results

```
finalTable <- kable(ABC, row.names = FALSE, caption="ABC Analysis of Customers", col.names = c("Customer Name", "Total Cust Payment", "Percent", "Category"))
finalTable
```

Table 1: ABC Analysis of Customers

Customer name	Payments	Percent	Category
Euro+ Shopping Channel	715738.98	8.08%	A
Mini Gifts Distributors Ltd.	584188.24	6.60%	A
Australian Collectors, Co.	180585.07	2.04%	A
Muscle Machine Inc	177913.95	2.01%	A
Dragon Souveniers, Ltd.	156251.03	1.76%	A
Down Under Souveniers, Inc	154622.08	1.75%	A
AV Stores, Co.	148410.09	1.68%	A
Anna's Decorations, Ltd	137034.22	1.55%	A
Corporate Gift Ideas Co.	132340.78	1.49%	A
Saveley & Henriot, Co.	130305.35	1.47%	A
Rovelli Gifts	127529.69	1.44%	A
Reims Collectables	126983.19	1.43%	A
La Rochelle Gifts	116949.68	1.32%	A
Online Diecast Creations Co.	116449.29	1.32%	A
Kelly's Gift Shop	114497.19	1.29%	A
Corrida Auto Replicas, Ltd	112440.09	1.27%	A
Vida Sport, Ltd	108777.92	1.23%	A
Land of Toys Inc.	107639.94	1.22%	A
Danish Wholesale Imports	107446.50	1.21%	A
Tokyo Collectables, Ltd	105548.73	1.19%	B
Handji Gifts& Co	105420.57	1.19%	B
Technics Stores Inc.	104545.22	1.18%	B
Baane Mini Imports	104224.79	1.18%	B
Suominen Souveniers	103896.74	1.17%	B
Mini Creations Ltd.	101872.52	1.15%	B
Diecast Classics Inc.	98509.25	1.11%	B
Herkku Gifts	97562.47	1.10%	B
Oulu Toy Supplies, Inc.	95706.15	1.08%	B
Toys of Finland, Co.	95546.46	1.08%	B
Gift Depot Inc.	95424.63	1.08%	B
Toys4GrownUps.com	93803.30	1.06%	B
Souveniers And Things Co.	91655.61	1.04%	B
Marta's Replicas Co.	90545.37	1.02%	B
L'ordine Souveniers	90143.31	1.02%	B
Heintze Collectables	89909.80	1.02%	B
Toms Spezialit	89223.14	1.01%	B
FunGiftIdeas.com	88627.49	1.00%	B
Cruz & Sons Co.	87468.30	0.99%	B
La Corne D'abondance, Co.	86553.52	0.98%	B
Auto Canal+ Petit	86436.97	0.98%	B

Customer name	Payments	Percent	Category
Salzburg Collectables	85060.00	0.96%	B
Amica Models & Co.	82223.23	0.93%	B
Stylish Desk Decors, Co.	80556.73	0.91%	B
Collectable Mini Designs Co.	80375.24	0.91%	B
Signal Gift Stores	80180.98	0.91%	B
Mini Classics	78432.16	0.89%	B
Motor Mint Distributors Inc.	77726.59	0.88%	B
Scandinavian Gift Ideas	76776.44	0.87%	B
Blauer See Auto, Co.	75937.76	0.86%	B
Mini Caravy	75859.32	0.86%	C
Collectables For Less Inc.	73533.65	0.83%	C
Vitachrome Inc.	72497.64	0.82%	C
giftsbymail.co.uk	71783.75	0.81%	C
Marseille Mini Autos	71547.53	0.81%	C
Super Scale Inc.	70378.65	0.79%	C
Canadian Gift Exchange Network	70122.19	0.79%	C
Classic Legends Inc.	69214.33	0.78%	C
Norway Gifts By Mail, Co.	69059.04	0.78%	C
Qu	68977.67	0.78%	C
Enaco Distributors	68520.47	0.77%	C
Lyon Souveniers	67659.19	0.76%	C
Royal Canadian Collectables, Ltd.	66812.00	0.75%	C
Mini Wheels Co.	66710.56	0.75%	C
Extreme Desk Decorations, Ltd	66704.94	0.75%	C
Diecast Collectables	65541.74	0.74%	C
Osaka Souveniers Co.	62361.22	0.70%	C
Petit Auto	62253.85	0.70%	C
Daedalus Designs Imports	61781.70	0.70%	C
UK Collectables, Ltd.	61167.18	0.69%	C
Alpha Cognac	60483.36	0.68%	C
The Sharp Gifts Warehouse	59551.38	0.67%	C
Auto Associ	58876.41	0.66%	C
Classic Gift Ideas, Inc	57939.34	0.65%	C
GiftsForHim.com	56662.38	0.64%	C
Online Mini Collectables	55577.26	0.63%	C
Australian Gift Network, Co	55190.16	0.62%	C
Mini Auto Werke	51059.99	0.58%	C
Iberia Gift Imports, Corp.	50987.85	0.58%	C
Gift Ideas Corp.	49967.78	0.56%	C
Clover Collections, Co.	49898.27	0.56%	C
CAF Imports	46751.14	0.53%	C
King Kong Collectables, Co.	45480.79	0.51%	C
Australian Collectables, Ltd	44920.76	0.51%	C
West Coast Collectables Co.	43748.72	0.49%	C
Volvo Model Replicas, Co	43680.65	0.49%	C
Signal Collectibles Ltd.	42570.37	0.48%	C
Men 'R' US Retailers, Ltd.	41506.19	0.47%	C
Tekni Collectables Inc.	38281.51	0.43%	C
Gifts4AllAges.com	33533.47	0.38%	C
Cambridge Collectables Co.	32198.69	0.36%	C
Bavarian Collectables Imports, Co.	31310.09	0.35%	C
Double Decker Gift Stores, Ltd	29586.15	0.33%	C

Customer name	Payments	Percent	Category
Microscale Inc.	29230.43	0.33%	C
Royale Belge	29217.18	0.33%	C
Frau da Collezione	25358.32	0.29%	C
Atelier graphique	22314.36	0.25%	C
Auto-Moto Classics Inc.	21554.26	0.24%	C
Boards & Toys Co.	7918.60	0.09%	C