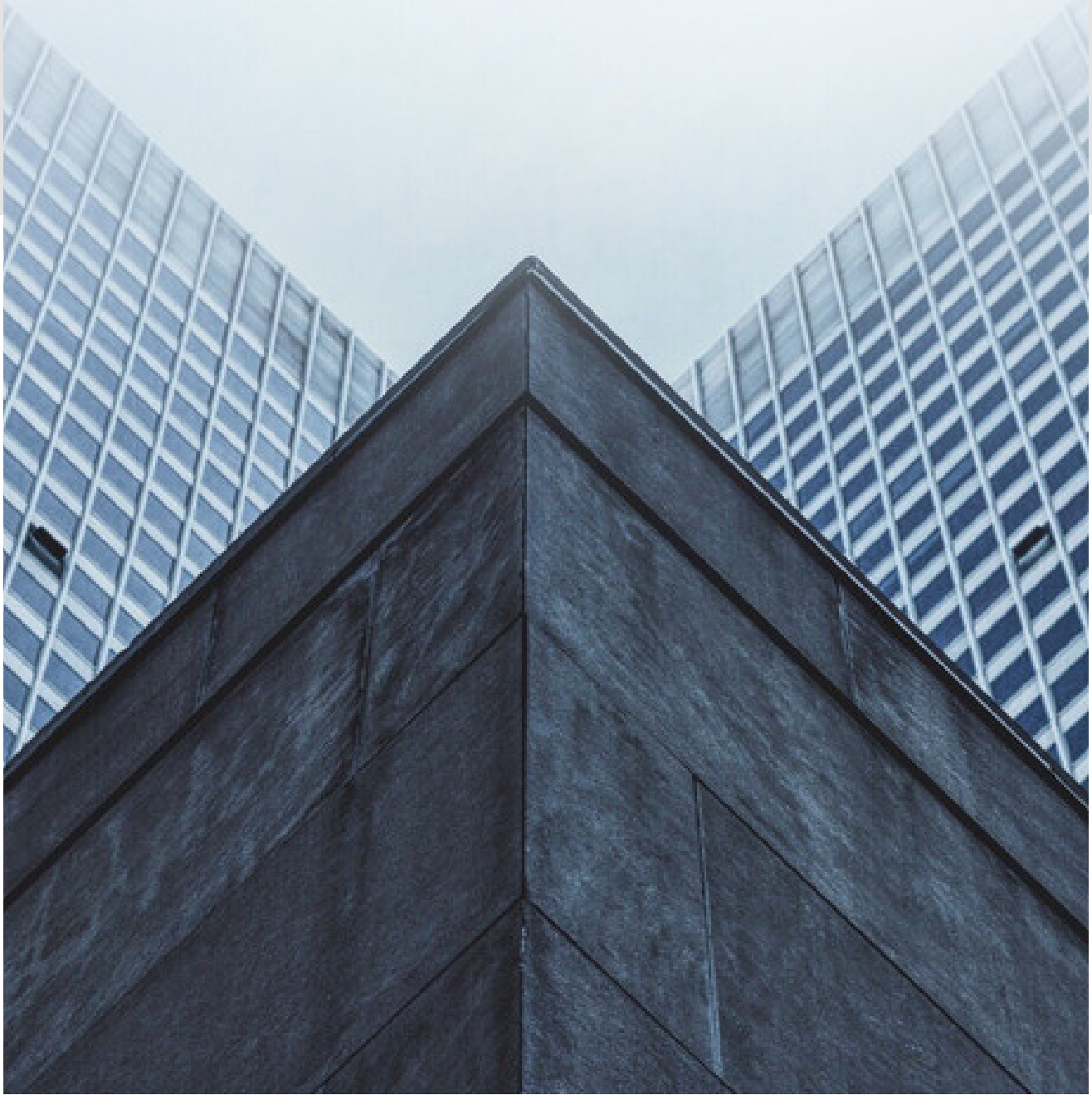
GROUP K

R PROJECT

CASE STUDY – USED CARS AGENCIES



Data description : The data that already stored in the excel file is data set contains information about used cars that are already sold or not by the agency.

<u>The data set are as follows:</u>

1.Name, (Model)
2.Year
3.Selling price
4.Kmdriven
5.Fueltype
6.Sellertype
7.Transmissiontype
8.Owner(First or second)
9.Mileage(Fuel consume per km)
10.Engine Capacity
11.Maximum horse power
12.Engine torque
13.Number of seats
14.Name of dealer

<u>The Agency has three dealers working full time:</u>
1-Mr. Henry Spelman
2-Ms. Anny Grouper
3-Mr. David Soliman

TASK DISTRIBUTION

VARUN NANDA

DESCRIPTIVE ANALYSIS (DATA READING and QUESTIONS)

HIMANSHU DHAHANA

HIMANSHU DHAHANA – PREDICTIVE ANALYSIS (PLUS GRAPHS)

SUKHMAN AND BHUMANYU SINGH

REPORTS AND PRESENTATION

IMPORTING DATA

```
setwd("D:/r programs/big data")

database<- read.csv("carbook.csv")
view(database)
```

Descriptive.R* | database

Filter

	X.car_id	name	year	selling_price	km_driven	fuel	seller_type	transmission	owner	mileage	engine	max_power	torque	seats	Dealer
1	1	Maruti Swift Dzire VDI	2014	450000	145500	Diesel	Individual	Manual	First Owner	23.4 kmpl	1248 CC	74 bhp	190Nm@ 2000rpm	5	
2	2	Skoda Rapid 1.5 TDI Ambition	2014	370000	120000	Diesel	Individual	Manual	Second Owner	21.14 kmpl	1498 CC	103.52 bhp	250Nm@ 1500-2500rpm	5	
3	3	Honda City 2017-2020 EXi	2006	158000	140000	Petrol	Individual	Manual	Third Owner	17.7 kmpl	1497 CC	78 bhp	12.7@ 2,700(kgm@ rpm)	5	
4	4	Hyundai i20 Sportz Diesel	2010	225000	127000	Diesel	Individual	Manual	First Owner	23.0 kmpl	1396 CC	90 bhp	22.4 kgm at 1750-2750rpm	5	
5	5	Maruti Swift VXI BSIII	2007	130000	120000	Petrol	Individual	Manual	First Owner	16.1 kmpl	1298 CC	88.2 bhp	11.5@ 4,500(kgm@ rpm)	5	
6	6	Hyundai Xcent 1.2 VTVT E Plus	2017	440000	45000	Petrol	Individual	Manual	First Owner	20.14 kmpl	1197 CC	81.86 bhp	113.75nm@ 4000rpm	5	
7	7	Maruti Wagon R LXI DUO BSIII	2007	96000	175000	LPG	Individual	Manual	First Owner	17.3 km/kg	1061 CC	57.5 bhp	7.8@ 4,500(kgm@ rpm)	5	
8	8	Maruti 800 DX BSII	2001	45000	5000	Petrol	Individual	Manual	Second Owner	16.1 kmpl	796 CC	37 bhp	59Nm@ 2500rpm	4	
9	9	Toyota Etios VXD	2011	350000	90000	Diesel	Individual	Manual	First Owner	23.59 kmpl	1364 CC	67.1 bhp	170Nm@ 1800-2400rpm	5	
10	10	Ford Figo Diesel Celebration Edition	2013	200000	169000	Diesel	Individual	Manual	First Owner	20.0 kmpl	1399 CC	68.1 bhp	160Nm@ 2000rpm	5	
11	11	Renault Duster 110PS Diesel RxL	2014	500000	68000	Diesel	Individual	Manual	Second Owner	19.01 kmpl	1461 CC	108.45 bhp	248Nm@ 2250rpm	5	
12	12	Maruti Zen LX	2005	92000	100000	Petrol	Individual	Manual	Second Owner	17.3 kmpl	993 CC	60 bhp	78Nm@ 4500rpm	5	
13	13	Maruti Swift Dzire VDI	2009	280000	140000	Diesel	Individual	Manual	Second Owner	19.3 kmpl	1248 CC	73.9 bhp	190Nm@ 2000rpm	5	
14	14	Maruti Wagon R LXI Minor	2009	180000	90000	Petrol	Individual	Manual	Second Owner	18.9 kmpl	1061 CC	67 bhp	84Nm@ 3500rpm	5	
15	15	Mahindra KUV 100 mFALCON G80 K8 5str	2016	400000	40000	Petrol	Individual	Manual	First Owner	18.15 kmpl	1198 CC	82 bhp	115Nm@ 3500-3600rpm	5	
16	16	Maruti Ertiga SHVS VDI	2016	778000	70000	Diesel	Individual	Manual	Second Owner	24.52 kmpl	1248 CC	88.5 bhp	200Nm@ 1750rpm	7	
17	17	Hyundai i20 1.4 CRDI Asta	2012	500000	53000	Diesel	Individual	Manual	Second Owner	23.0 kmpl	1396 CC	90 bhp	22.4 kgm at 1750-2750rpm	5	
18	18	Maruti Alto LX	2002	150000	80000	Petrol	Individual	Manual	Second Owner	19.7 kmpl	796 CC	46.3 bhp	62Nm@ 3000rpm	5	
19	19	Hyundai i20 2015-2017 Asta 1.4 CRDi	2016	680000	100000	Diesel	Individual	Manual	First Owner	22.54 kmpl	1396 CC	88.73 bhp	219.7Nm@ 1500-2750rpm	5	
20	20	Mahindra Verito 1.5 D4 BSIII	2011	174000	100000	Diesel	Individual	Manual	Second Owner	21.0 kmpl	1461 CC	64.1 bhp	160Nm@ 2000rpm	5	
21	21	Honda WR-V i-DTEC VX	2017	950000	50000	Diesel	Individual	Manual	First Owner	25.5 kmpl	1498 CC	98.6 bhp	200Nm@ 1750rpm	5	
22	22	Maruti Swift Dzire ZDI	2015	525000	40000	Diesel	Individual	Manual	First Owner	26.59 kmpl	1248 CC	74 bhp	190Nm@ 2000rpm	5	
23	23	Maruti SX4 ZDI	2012	600000	72000	Diesel	Individual	Manual	First Owner	21.5 kmpl	1248 CC	88.8 bhp	200Nm@ 1750rpm	5	
24	24	Tata Tigor 2017-2020 XZ	2018	500000	35000	Petrol	Individual	Manual	First Owner	20.3 kmpl	1199 CC	83.81 bhp	114Nm@ 3500rpm	5	
25	25	Maruti Baleno Delta 1.2	2016	575000	45000	Petrol	Individual	Manual	First Owner	21.4 kmpl	1197 CC	83.1 bhp	115Nm@ 4000rpm	5	
26	26	Maruti Alto 800 LXI	2017	275000	28000	Petrol	Individual	Manual	First Owner	24.7 kmpl	796 CC	47.3 bhp	69Nm@ 3500rpm	5	

DESCRIPTIVE ANALYSIS

Q.1 WHICH CAR MODEL SOLD THE MOST ?

CODE :

```
#most sold car
car_name <- database$name

table(car_name)

most_selled <- as.data.frame(table(car_name))

view(most_selled)

most_selled_name<- which.max(table(car_name))

most_selled_number<- max(table(car_name))

most_sold <- most_selled %>% arrange(desc(most_selled$Freq))

top10_most_sold <- head(most_sold, 10)
par(mar=c(11,4,4,4,4,4,4,4,4,4))

barplot( height=top10_most_sold$Freq,
         names=top10_most_sold$car_name ,
         density=c(37,25,20,30,32,55,12,28,36,51) ,
         angle=c(0,45,90,11,36,20,10,15,50,80) , col="#5D8233", las = 2)

print(most_selled_name)
print(most_selled_number)
```

GRAPH :

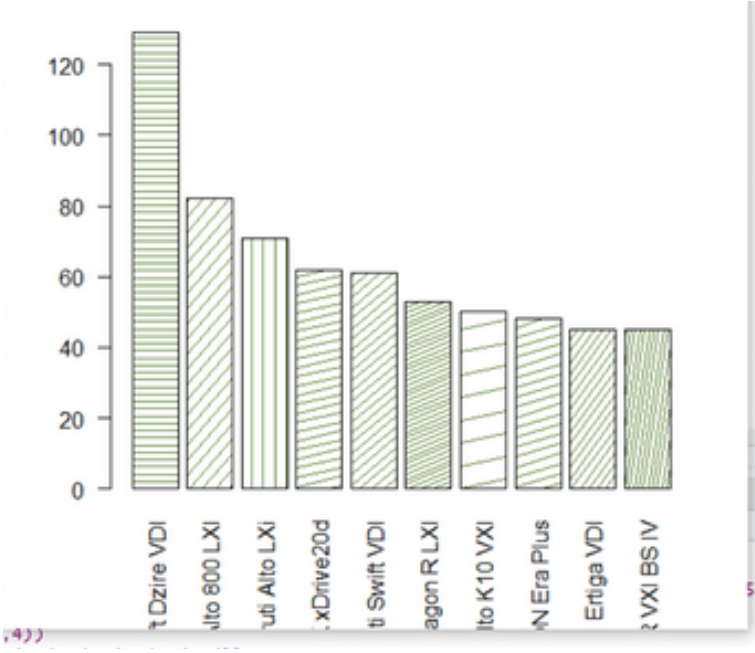


TABLE :

Descriptive.R* | car_table | database

Filter

	car_name	Freq
1233	Maruti Swift Dzire VDI	129
1031	Maruti Alto 800 LXI	82
1055	Maruti Alto LXI	71
50	BMW X4 M Sport X xDrive20d	62
1263	Maruti Swift VDI	61
1331	Maruti Wagon R LXI	53
1048	Maruti Alto K10 VXI	50
516	Hyundai EON Era Plus	48
1148	Maruti Ertiga VDI	45
1348	Maruti Wagon R VXI BS IV	45
1053	Maruti Alto LX	44
1882	Toyota Innova 2.5 VX (Diesel) 7 Seater	44
1191	Maruti Ritz VDi	42
1007	Maruti 800 AC	38
1237	Maruti Swift Dzire VXI	38
1730	Tata Safari Storme EX	38
1062	Maruti Baleno Alpha 1.3	37
1266	Maruti Swift VDI BSIV	36
532	Hyundai Grand i10 1.2 CRDi Sportz	34
752	Jaguar XF 2.0 Diesel Portfolio	34
772	Lexus ES 300h	34
1232	Maruti Swift Dzire VDI	33
1501	Renault KWID RXT	33
1802	Toyota Camry 2.5 Hybrid	33
1839	Toyota Etios VX	33
440	Honda Jazz VX	32

RESULT :

```
> print(most_selled_name)
Maruti Swift Dzire VDI
                 1233
> print(most_selled_number)
[1] 129
>
```

Q.2 Which dealer sold more cars, and his total sales?

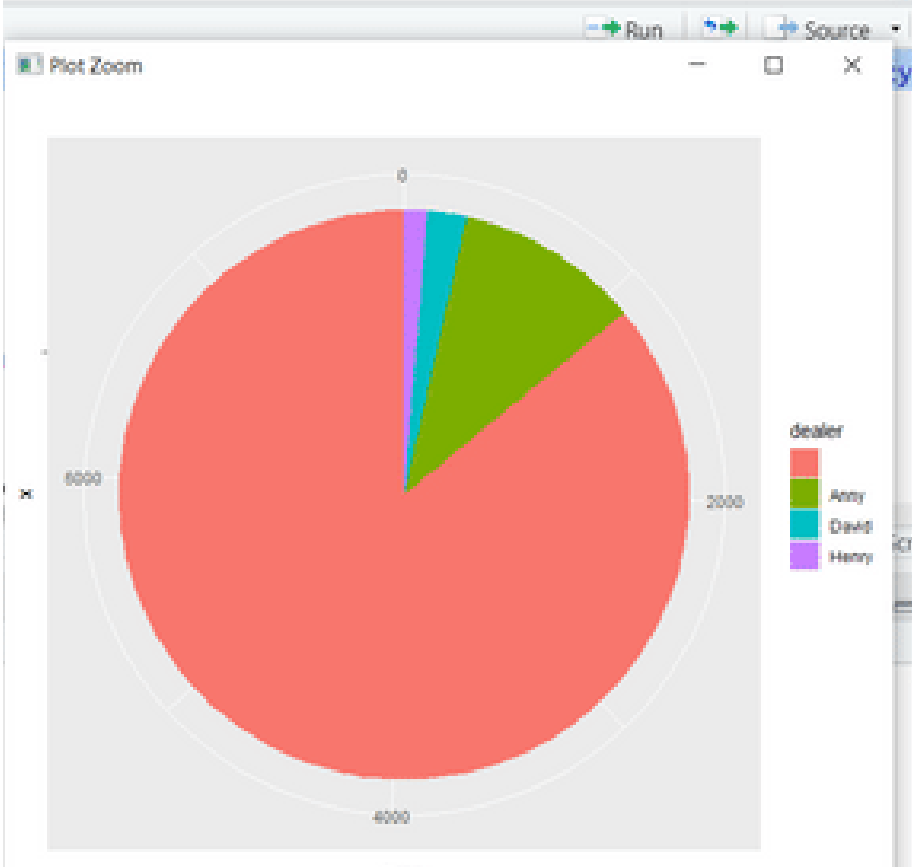
CODE :

```
# which seller selled most and how many cars

dealer<- database$Dealer

main_dealer <- table(dealer)

print(main_dealer)

main_dealer_name<- which.max(table(dealer))

main_dealer_number<-max(table(dealer))

ggplot(as.data.frame(main_dealer),
       aes(x = "", y = Freq, fill = dealer)) + geom_bar(stat = "identity", width = 1) + coord_polar("y", start = 0)
```

RESULT :

```
> print(main_dealer)
dealer
       Anny David Henry
 6800   828   175   104
>
```

GRAPH :



Q.3 WHAT IS THE AVERAGE PRICE FOR EACH CAR MODEL ?

CODE :

```
# average price of each car model

car_model <- database[ ,c(2,4)]

view(car_model)

choose_model <- filter(car_model, name=='Maruti Swift Dzire VDI')

print(choose_model)

avg_price <- mean(choose_model$selling_price)

print(avg_price)
```

FOR ALL

Descriptive.R* | car_model | choose_model

Filter

	name	selling_price
1	Maruti Swift Dzire VDI	450000
2	Skoda Rapid 1.5 TDI Ambition	370000
3	Honda City 2017-2020 EXi	158000
4	Hyundai i20 Sportz Diesel	225000
5	Maruti Swift VXI BSIII	130000
6	Hyundai Xcent 1.2 VTVT E Plus	440000
7	Maruti Wagon R LXI DUO BSIII	96000
8	Maruti 800 DX BSII	45000
9	Toyota Etios VXD	350000
10	Ford Figo Diesel Celebration Edition	200000
11	Renault Duster 110PS Diesel RxL	500000
12	Maruti Zen LX	92000
13	Maruti Swift Dzire VDi	280000
14	Maruti Wagon R LXI Minor	180000
15	Mahindra KUV 100 mFALCON G80 K8 5str	400000
16	Maruti Ertiga SHVS VDI	778000
17	Hyundai i20 1.4 CRDi Asta	500000
18	Maruti Alto LX	150000
19	Hyundai i20 2015-2017 Asta 1.4 CRDi	680000
20	Mahindra Verito 1.5 D4 BSIII	174000
21	Honda WR-V i-DTEC VX	950000
22	Maruti Swift Dzire ZDI	525000
23	Maruti SX4 ZDI	600000
24	Tata Tigor 2017-2020 XZ	500000
25	Maruti Baleno Delta 1.2	575000
26	Maruti Alto 800 LXI	275000

RESULT : AVERAGE PRICE OF CAR MODELS

```
>
> print(avg_price)
[1] 578658.9
>
```

For a choosen model

Descriptive.R* | car_model | choose_model

Filter

	name	selling_price
1	Maruti Swift Dzire VDI	450000
2	Maruti Swift Dzire VDI	700000
3	Maruti Swift Dzire VDI	550000
4	Maruti Swift Dzire VDI	500000
5	Maruti Swift Dzire VDI	360000
6	Maruti Swift Dzire VDI	650000
7	Maruti Swift Dzire VDI	550000
8	Maruti Swift Dzire VDI	480000
9	Maruti Swift Dzire VDI	530000
10	Maruti Swift Dzire VDI	600000
11	Maruti Swift Dzire VDI	700000
12	Maruti Swift Dzire VDI	561000
13	Maruti Swift Dzire VDI	755000
14	Maruti Swift Dzire VDI	420000

Q.4 WHAT IS THE NEWEST CAR AND THE OLDEST CAR ?

CODE :

```r
#newest and oldest car
year_name <- database[ ,c(2,3)]

view(year_name)

all_year<- (table(years))

print(all_year , decreasing=TRUE)

#newest car
newest_cars=filter(year_name, year==2020)

view(newest_cars)
#oldest car
oldest_cars=filter(year_name, year==1994)

view(oldest_cars)
```

YEAR :

Descriptive.R* | year_name | all_year

Filter

	years	Freq
1	1994	2
2	1995	1
3	1996	2
4	1997	9
5	1998	9
6	1999	14
7	2000	16
8	2001	6
9	2002	19
10	2003	37
11	2004	51
12	2005	76
13	2006	102
14	2007	173
15	2008	201
16	2009	231
17	2010	375
18	2011	570
19	2012	621
20	2013	668

YEAR NAME :

revenue_table | predective.R | car_table

Filter

	name	year
1	Maruti Swift Dzire VDI	2014
2	Skoda Rapid 1.5 TDI Ambition	2014
3	Honda City 2017-2020 EXi	2006
4	Hyundai i20 Sportz Diesel	2010
5	Maruti Swift VXI BSIII	2007
6	Hyundai Xcent 1.2 VTVT E Plus	2017
7	Maruti Wagon R LXI DUO BSIII	2007
8	Maruti 800 DX BSII	2001
9	Toyota Etios VXD	2011
10	Ford Figo Diesel Celebration Edition	2013
11	Renault Duster 110PS Diesel RxL	2014
12	Maruti Zen LX	2005
13	Maruti Swift Dzire VDi	2009
14	Maruti Wagon R LXI Minor	2009
15	Mahindra KUV 100 mFALCON G80 K8 5str	2016
16	Maruti Ertiga SHVS VDI	2016
17	Hyundai i20 1.4 CRDi Asta	2012
18	Maruti Alto LX	2002
19	Hyundai i20 2015-2017 Asta 1.4 CRDi	2016
20	Mahindra Verito 1.5 D4 BSIII	2011
21	Honda WR-V i-DTEC VX	2017

NEWEST CARS

Descriptive.R* | year_name | all_year

Filter

	name	year
3	Toyota Innova Crysta 2.7 GX AT 8 STR	2020
4	Hyundai Grand i10 Sportz	2020
5	Maruti Eeco 5 Seater AC BSIV	2020
6	Maruti Dzire LXI	2020
7	BMW X7 xDrive 30d DPE	2020
8	Maruti Swift AMT VXI	2020
9	Tata Zest Revotron 1.2 XT	2020
0	Tata Zest Revotron 1.2 XT	2020
1	Maruti Alto 800 LXI	2020
2	Hyundai Xcent 1.2 VTVT E	2020
3	Maruti Eeco CNG 5 Seater AC BSIV	2020
4	Datsun GO T Option	2020
5	Maruti Alto 800 VXI	2020
6	Mahindra Scorpio S11 4WD BSIV	2020
7	Tata Zest Revotron 1.2 XT	2020
8	Kia Seltos HTX Plus AT D	2020
9	Volkswagen Polo 1.0 TSI Highline Plus	2020
0	Tata Harrier XZ Plus	2020

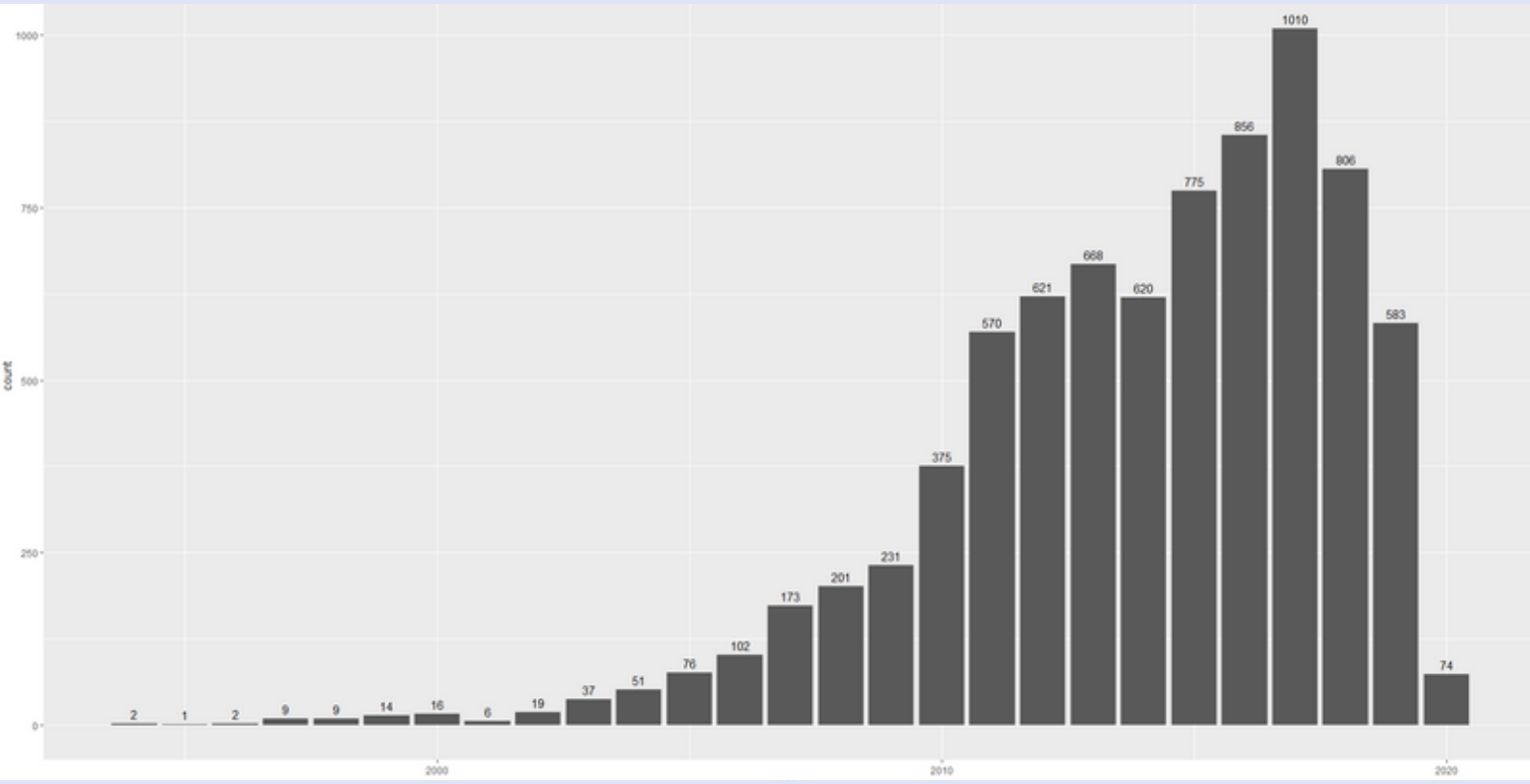
Oldest cars

Descriptive.R* | year_name | all_year | newest_cars | oldest_cars

Filter

	name	year
1	Maruti 800 AC	1994
2	Ambassador Classic 2000 DSZ AC PS	1994

GRAPH :


count
1000
750
500
250
0
2
1
2
9
9
14
16
6
19
37
51
76
102
173
201
231
375
570
621
668
620
775
856
1010
806
583
74
2000
2010
2020

Q.5 Which is the best car related to price, and low mileage?

CODE :

```
#best car related to price, low mileage
mileage_table <- database[ ,c(2,4,10)]

view(mileage_table)

min_price <- min(mileage_table$selling_price)

filtered_car<- filter(mileage_table, selling_price==min_price)

view(filtered_car)
```

OUTPUT :

Descriptive.R* | mileage_table | filtered_car

Filter

	name	selling_price	mileage
1	Maruti Swift Dzire VDI	450000	23.4 kmpl
2	Skoda Rapid 1.5 TDI Ambition	370000	21.14 kmpl
3	Honda City 2017-2020 EXi	158000	17.7 kmpl
4	Hyundai i20 Sportz Diesel	225000	23.0 kmpl
5	Maruti Swift VXI BSIII	130000	16.1 kmpl
6	Hyundai Xcent 1.2 VTVT E Plus	440000	20.14 kmpl
7	Maruti Wagon R LXI DUO BSIII	96000	17.3 km/kg
8	Maruti 800 DX BSII	45000	16.1 kmpl
9	Toyota Etios VXD	350000	23.59 kmpl
10	Ford Figo Diesel Celebration Edition	200000	20.0 kmpl
11	Renault Duster 110PS Diesel RxL	500000	19.01 kmpl
12	Maruti Zen LX	92000	17.3 kmpl
13	Maruti Swift Dzire VDi	280000	19.3 kmpl
14	Maruti Wagon R LXI Minor	180000	18.9 kmpl
15	Mahindra KUV 100 mFALCON G80 K8 5str	400000	18.15 kmpl
16	Maruti Ertiga SHVS VDI	778000	24.52 kmpl
17	Hyundai i20 1.4 CRDi Asta	500000	23.0 kmpl
18	Maruti Alto LX	150000	19.7 kmpl
19	Hyundai i20 2015-2017 Asta 1.4 CRDi	680000	22.54 kmpl
20	Mahindra Verito 1.5 D4 BSIII	174000	21.0 kmpl
21	Honda WR-V i-DTEC VX	950000	25.5 kmpl

RESULT :

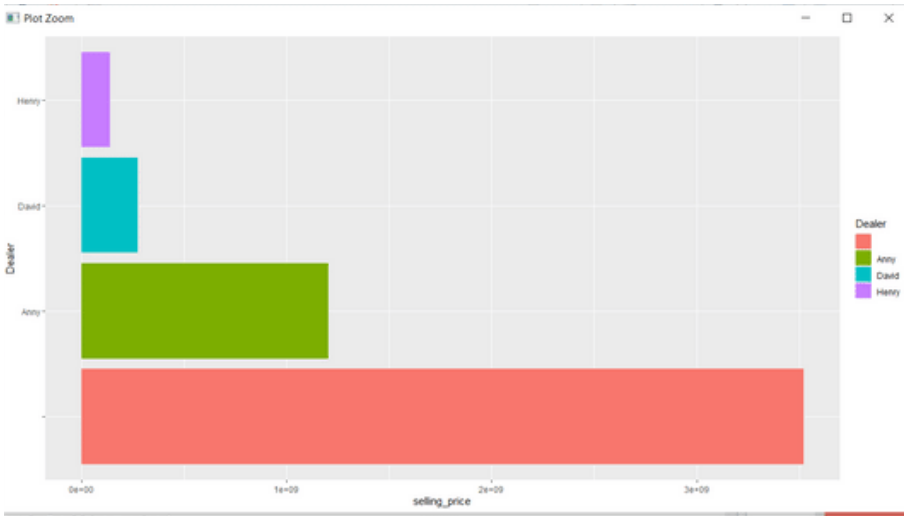
	name	selling_price	mileage
1	Maruti 800 AC	29999	16.1 kmpl

Q.6 What is the total revenue from Individual selling?

CODE :

```
view(revenue_table)
filtered_revenue<-filter(revenue_table, dealer=='')
view(filtered_revenue)
revenue <- sum(revenue_table$selling_price)
print(revenue)

ggplot(data = revenue_table, aes(x = Dealer, y = selling_price, fill = Dealer)) + geom_bar(stat = "identity") + coord_flip()
```

GRAPH :



TABLES :

Descriptive.R* | revenue_table

Filter

	selling_price	Dealer
29	254999	
30	670000	
31	150000	
32	730000	
33	650000	
34	330000	
35	366000	
36	1149000	
37	150000	
38	425000	
39	150000	
40	2100000	
41	925000	Henry
42	425000	Henry
43	675000	Henry
44	819999	Henry
45	390000	Henry
46	1500000	Henry

Descriptive.R* | revenue_table

Filter

	selling_price	Dealer
1	450000	
2	370000	
3	158000	
4	225000	
5	130000	
6	440000	
7	96000	
8	45000	
9	350000	
10	200000	
11	500000	
12	92000	
13	280000	
14	180000	
15	400000	
16	778000	
17	500000	
18	150000	

RESULT

```
>
> print(revenue)
[1] 3521387320
>
```

PREDICTIVE ANALYSIS

BY GROUP K

1.Installation of packages needed for analysis and running the code

```
install.packages("dplyr")
install.packages("ggplot2")
install.packages("readr")
install.packages("tidyverse")
```

2 . Loading the packages into R by running the code

```
library(dplyr)
library(ggplot2)
library(readr)
library(tidyverse)
```

3. i) Loading data into R
ii) Choose required columns from data frame
iii) Check the data for null values

```
carbook <- read_csv("carbook.csv")

cardf <- carbook %>% select(c(name, selling_price,mileage))
view(cardf)

str(cardf)

#Changing mileage format
cardf$mileage<- gsub("km/kg","",as.character(cardf$mileage))
view(cardf$mileage)

# checking for null values
sum(is.na(cardf))
```

RESULTING DATA TABLE :

	name	selling_price	mileage
1	Maruti Swift Dzire VDI	450000	23.4
2	Skoda Rapid 1.5 TDI Ambition	370000	21.14
3	Honda City 2017-2020 EXi	158000	17.7
4	Hyundai i20 Sportz Diesel	225000	23.0
5	Maruti Swift VXI BSIII	130000	16.1
6	Hyundai Xcent 1.2 VTVT E Plus	440000	20.14
7	Maruti Wagon R LXI DUO BSIII	96000	17.3
8	Maruti 800 DX BSII	45000	16.1
9	Toyota Etios VXD	350000	23.59
10	Ford Figo Diesel Celebration Edition	200000	20.0
11	Renault Duster 110PS Diesel RxL	500000	19.01
12	Maruti Zen LX	92000	17.3
13	Maruti Swift Dzire VDi	280000	19.3
14	Maruti Wagon R LXI Minor	180000	18.9
15	Mahindra KUV 100 mFALCON G80 K8 5str	400000	18.15
16	Maruti Ertiga SHVS VDI	778000	24.52
17	Hyundai i20 1.4 CRDi Asta	500000	23.0
18	Maruti Alto LX	150000	19.7

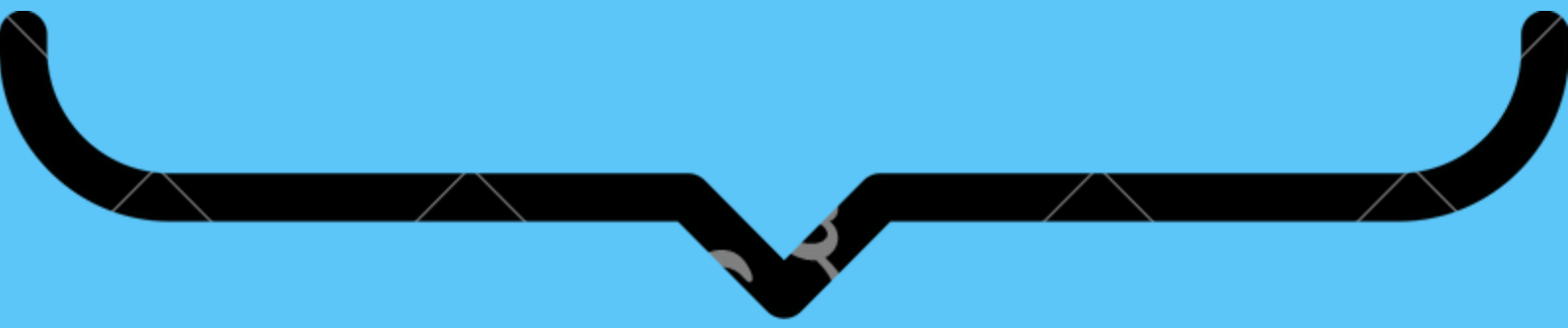
4. Performing simple regression using summary (car_ln) .we want to estimate the most profitable car related to selling price and mileage.

```
#Linear regression model
car_lm = lm(mileage~name, data = cardf)
summary(car_lm)

car_lm1 = lm(mileage~name +selling_price, data = cardf)
summary(car_lm1)

#checking for coefficients
coefs <- coefficients(car_lm1)

#sorting the coefficients
coefs_sorted <- coefs[order(coefs)]

tail(coefs_sorted)
```

```
> car_lm1 = lm(mileage~name +selling_price, data = cardf)
> summary(car_lm1)

Call:
lm(formula = mileage ~ name + selling_price, data = cardf)

Residuals:
    Min      1Q  Median      3Q     Max
-4.3804 -0.0333  0.0000  0.0382  4.3945

Coefficients:
                                              Estimate Std. Error t value Pr(>|t|)
(Intercept)                                  1.273e+01  5.494e-01  23.173  < 2e-16 ***
nameAmbassador Classic 2000 DSZ AC PS       -2.167e-02  7.770e-01  -0.028 0.977751
nameAmbassador Grand 1500 DSZ BSIII         -4.244e-02  7.770e-01  -0.055 0.956445
nameAmbassador Grand 2000 DSZ PW CL          5.871e-01  7.770e-01   0.756 0.449912
nameAshok Leyland Stile LE                   7.067e+00  7.771e-01   9.094  < 2e-16 ***
```

Residuals:

Min	1Q	Median	3Q	Max
-4.3804	-0.333	0	0.0382	4.3945



THE ERROR RANGE

- MEDIAN = ERROR MEDIAN
in this case, 0

The coefficients section shows :

1. The estimates (Estimate) for model parameters - the value of y-intercept , in this case 1.273e+01 and the estimate effect is -2.167e-02
2. The standard error of the estimated values (std error)i.e. precision of estimate
3. .The test statistic i.e. T value.
4. The p-value (Pr(>|t|)) i.e. the probability of finding the given t-statistic if the null hypothesis of no relationship were true.

The most important thing to note is the p-value , 2.2e-16 or almost 0 which indicate whether the model fits the data well

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5494 on 5923 degrees of freedom
Multiple R-squared:  0.9861,    Adjusted R-squared:  0.9815
F-statistic: 212.3 on 1983 and 5923 DF,  p-value: < 2.2e-16
```

- Signif. codes : 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

variable possible values

- Residual standard error: 0.5494 on 5923 degrees of freedom

The standard deviation of the error

- Multiple R-squared: 0.9861, Adjusted R-squared: 0.9815

The amount of variance explained by the model

- F-statistic: 212.3 on 1983 and 5923 DF, p-value: < 2.2e-16

checking if at least the variable is significantly different from zero.

5. We arrange the coefficient in descending order and observe the highest value .

RESULT :- Maruti Alto 800 CNG LXI Optional

```
> #checking for coefficients
> coefs <- coefficients(car_lm1)
>
> #sorting the coefficients
> coefs_sorted <- coefs[order(coefs)]
>
> tail(coefs_sorted)
       nameMaruti Alto 800 CNG LXI          nameMaruti Alto K10 LXI CNG          nameMaruti Wagon R CNG LXI
                          18.53957                             19.13946                             19.54393
       nameMaruti Alto 800 LXI CNG nameVolvo XC90 T8 Excellence BSIV nameMaruti Alto 800 CNG LXI Optional
                          19.93364                             20.23849                             20.40975
>
```

GRAPH OF LINEAR REGRESSION

```
#graph
barplot(coefs_sorted, ylim = c(0,30))
```

y- intercept = selling price + mileage

x- intercept = car models


Thank
you!