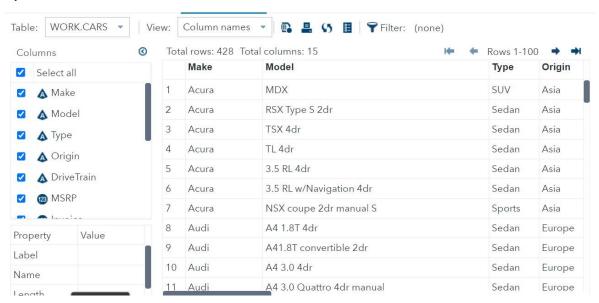
Name: Nishant Baruah	BTech CE
Roll no.: A053	SAP ID: 70022100516
Subject: BIVA	Set: C

## Q1

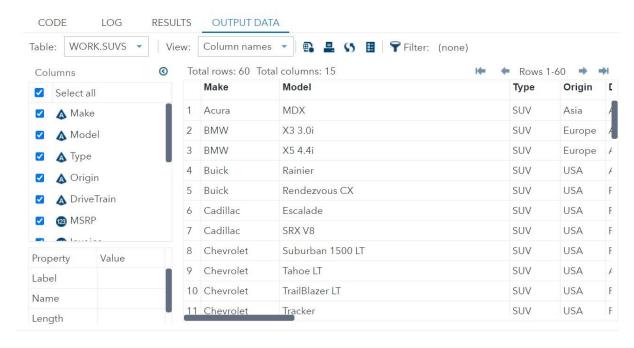
#### Code:

```
*MT1.sas ×
  CODE
            LOG
                    RESULTS
                             OUTPUT DATA
 ★ 💇 🖥 🐼 🔞 📵 🖺 🐚 🗗 🛠 📭 🛍 Line#
                                                      ⊙ ½ H ≫ 5 53
   2 /* Loading the dataset */
   3 data cars;
      set sashelp.cars;
   5 run;
   7 /* New dataset named SUVs */
   8 data SUVs;
  9 set cars;
10 if Type = 'SUV';
  11 run;
  12
  13 proc sort data=SUVs;
  14 by descending Horsepower;
  15 run;
  16
  17 proc print data=SUVs(obs=5);
  18 run;
```

#### **Output:**



#### SUV dataset is created.



## Sorted by horsepower in Descending order.



#### First 5 rows.

Obs	Make	Model	Type	Origin	DriveTrain	MSRP	Invoice	Engine Size	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	Wheelbase	Lei
1	Porsche	Cayenne S	SUV	Europe	All	\$56,665	\$49,865	4.5	8	340	14	18	4950	112	
2	BMW	X5 4.4i	SUV	Europe	All	\$52,195	\$47,720	4.4	8	325	16	22	4824	111	
3	GMC	Yukon XL 2500 SLT	SUV	USA	All	\$46,265	\$40,534	6.0	8	325	13	17	6133	130	
4	Toyota	Land Cruiser	SUV	Asia	All	\$54,765	\$47,986	4.7	8	325	13	17	5390	112	
5	Cadillac	SRX V8	SUV	USA	Front	\$46.995	\$43,523	4.6	8	320	16	21	4302	116	

## Q2

## Code:

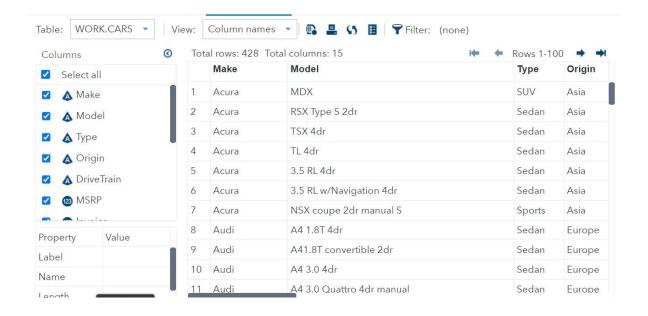
```
/* Q2 */
data cars;
  set sashelp.cars;
run;

data cars;
  set cars;
  if CityMPG > 25 and HighwayMPG > 30 then
     MileageCategory = 'High Mileage';
  else if (20 <= CityMPG <= 25) or (25 <= HighwayMPG <= 30) then
     MileageCategory = 'Moderate Mileage';
  else if CityMPG <= 20 or HighwayMPG < 25 then
     MileageCategory = 'Low Mileage';
run;

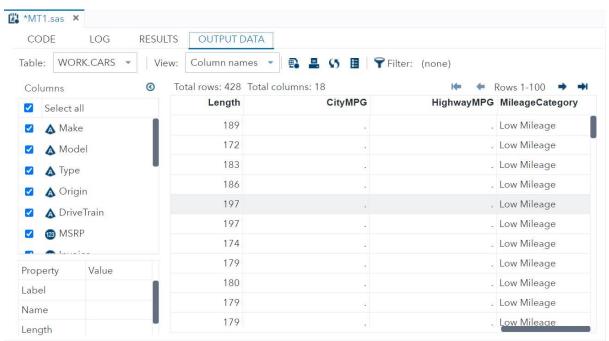
proc print data=cars(obs=10);
run;</pre>
```

## Output:

**Loading Dataset Sashelp.cars** 



# New Variable MileageCategory according to the given conditions.



First 10 rows.

Obs	Make	Model	Туре	Origin	DriveTrain	MSRP	Invoice	<b>Engine Size</b>	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	Wheelbase
1	Acura	MDX	SUV	Asia	All	\$36,945	\$33,337	3.5	6	265	17	23	4451	106
2	Acura	RSX Type S 2dr	Sedan	Asia	Front	\$23,820	\$21,761	2.0	4	200	24	31	2778	101
3	Acura	TSX 4dr	Sedan	Asia	Front	\$26,990	\$24,647	2.4	4	200	22	29	3230	105
4	Acura	TL 4dr	Sedan	Asia	Front	\$33,195	\$30,299	3.2	6	270	20	28	3575	108
5	Acura	3.5 RL 4dr	Sedan	Asia	Front	\$43,755	\$39,014	3.5	6	225	18	24	3880	115
6	Acura	3.5 RL w/Navigation 4dr	Sedan	Asia	Front	\$46,100	\$41,100	3.5	6	225	18	24	3893	115
7	Acura	NSX coupe 2dr manual S	Sports	Asia	Rear	\$89,765	\$79,978	3.2	6	290	17	24	3153	100
8	Audi	A4 1.8T 4dr	Sedan	Europe	Front	\$25,940	\$23,508	1.8	4	170	22	31	3252	104
9	Audi	A41.8T convertible 2dr	Sedan	Europe	Front	\$35,940	\$32,506	1.8	4	170	23	30	3638	105
10	Audi	A4 3.0 4dr	Sedan	Europe	Front	\$31,840	\$28,846	3.0	6	220	20	28	3462	104

# Q3

```
Code:
```

```
39 /* Q3 */
40 data cars;
41 set sashelp.cars;
42 run;
43
44 /* Cars with Make starting with 'A' */
45 data cars_like_example;
46
    set cars;
47
    where Make like 'A%';
48 run;
49
50 proc print data=cars_like_example;
51 title 'Cars with Make starting with ''A'' (LIKE operator)';
52 run;
£ ⊕ - □ □ □ □ □ □ □ F □ □ Line#
                                                   54 /* Cars with Model ending with 'L' */
55 data cars_percent_example;
56
    set cars;
    where Model like '%L';
57
58 run;
proc print data=cars_percent_example;
title 'Cars with Model ending with ''L'' (% operator)';
62 run;
63
64
65 /* Cars with Make containing exactly 3 characters */
66 data cars_percent_underscore_example;
67
     set cars;
     where length(Make) = 3;
68
69 run;
70
71 proc print data=cars_percent_underscore_example;
72 title 'Cars with Make containing exactly 3 characters (%_ operator)';
73 run;
74
```

#### **Output:**

Obs	Make	Model	Туре	Origin	Drive Train	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	Wheelbase
1	Acura	MDX	SUV	Asia	All	\$36,945	\$33,337	3.5	6	265	17	23	4451	106
2	Acura	RSX Type S 2dr	Sedan	Asia	Front	\$23,820	\$21,761	2.0	4	200	24	31	2778	101
3	Acura	TSX 4dr	Sedan	Asia	Front	\$26,990	\$24,647	2.4	4	200	22	29	3230	105
4	Acura	TL 4dr	Sedan	Asia	Front	\$33,195	\$30,299	3.2	6	270	20	28	3575	108
5	Acura	3.5 RL 4dr	Sedan	Asia	Front	\$43,755	\$39,014	3.5	6	225	18	24	3880	115
6	Acura	3.5 RL w/Navigation 4dr	Sedan	Asia	Front	\$46,100	\$41,100	3.5	6	225	18	24	3893	115
7	Acura	NSX coupe 2dr manual S	Sports	Asia	Rear	\$89,765	\$79,978	3.2	6	290	17	24	3153	100
8	Audi	A4 1.8T 4dr	Sedan	Europe	Front	\$25,940	\$23,508	1.8	4	170	22	31	3252	104
9	Audi	A41.8T convertible 2dr	Sedan	Europe	Front	\$35,940	\$32,506	1.8	4	170	23	30	3638	105
10	Audi	A4 3.0 4dr	Sedan	Europe	Front	\$31,840	\$28,846	3.0	6	220	20	28	3462	104
-				_		400 100	***						0500	

Obs	Make	Model	Type	Origin	Drive Train	MSRP	Invoice	Engine Size	Cylinders	Horsepower	MPG City	MPG_Highway	Weight	Wheelbas
Ons	IVIANE	Wodel	Type	Origin	Drive main	MISIKE	IIIVOICE	Lilginesize	Cyllilders	Horsepower	WIF G_CITY	WF G_Highway	weight	vvilleelbas
1	Ford	F-150 Regular Cab XL	Truck	USA	Rear	\$22,010	\$19,490	4.6	8	231	15	19	4788	126
2	Nissan	Murano SL	Wagon	Asia	Rear	\$28,739	\$27,300	3.5	6	245	20	25	3801	11
3	Oldsmobile	Silhouette GL	Sedan	USA	Front	\$28,790	\$26,120	3.4	6	185	19	26	3948	120
4	Volkswagen	Jetta GL	Wagon	Europe	Front	\$19,005	\$17,427	2.0	4	115	24	30	3034	99

					Cars with	Make c	ontainin	g exactly 3	characte	rs (%_ oper	rator)			
Obs	Make	Model	Туре	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	Wheelbase
1	BMW	X3 3.0i	SUV	Europe	All	\$37,000	\$33,873	3.0	6	225	16	23	4023	110
2	BMW	X5 4.4i	SUV	Europe	All	\$52,195	\$47,720	4.4	8	325	16	22	4824	111
3	BMW	325i 4dr	Sedan	Europe	Rear	\$28,495	\$26,155	2.5	6	184	20	29	3219	107
4	BMW	325Ci 2dr	Sedan	Europe	Rear	\$30,795	\$28,245	2.5	6	184	20	29	3197	107
5	BMW	325Ci convertible 2dr	Sedan	Europe	Rear	\$37,995	\$34,800	2.5	6	184	19	27	3560	107
6	BMW	325xi 4dr	Sedan	Europe	All	\$30,245	\$27,745	2.5	6	184	19	27	3461	107
7	BMW	330i 4dr	Sedan	Europe	Rear	\$35,495	\$32,525	3.0	6	225	20	30	3285	107
8	BMW	330Ci 2dr	Sedan	Europe	Rear	\$36,995	\$33,890	3.0	6	225	20	30	3285	107
9	BMW	330xi 4dr	Sedan	Europe	All	\$37,245	\$34,115	3.0	6	225	20	29	3483	107
10	BMW	525i 4dr	Sedan	Europe	Rear	\$39,995	\$36,620	2.5	6	184	19	28	3428	114
11	BMW	330Ci convertible 2dr	Sedan	Europe	Rear	\$44,295	\$40,530	3.0	6	225	19	28	3616	107
12	BMW	530i 4dr	Sedan	Europe	Rear	\$44,995	\$41,170	3.0	6	225	20	30	3472	114
13	RMW	545iA 4dr	Sedan	Furone	Rear	\$54 995	\$50 270	4 4	8	325	18	26	3814	114

_	•	_			
n	л	•	റ	М	ο.
_	-	•	u	ч	С.

Case1:

```
/* Q4 */
 data sashelp.cars;
 title1 'The First Line';
 title2 'The Second Line';
 proc print data=sashelp.cars;
 run;
 title2 'The Next Line';
 proc print data=sashelp.cars;
 run;
 footnote1 'Cars Dataset';
 footnote2 'SUVs ';
 footnote3 'Confidential';
 proc print data=sashelp.cars;
 run;
Case2:
footnote1 'Cars Dataset';
footnote2 'SUVs ';
footnote3 'Confidential';
proc print data=sashelp.cars;
run;
```

Case3:

run;

footnote3 'Sedans';

proc print data=sashelp.cars;

```
data sashelp.cars;
title1 'The First Line';
/* Cancelling the title1; */
title1;
title2 'The Second Line';
proc print data=sashelp.cars;
run;
title2 'The Next Line';
proc print data=sashelp.cars;
run;
footnote1 'Cars Dataset';
footnote2 'SUVs ';
/* Cancelling the footnote2; */
footnote2;
footnote3 'Confidential';
proc print data=sashelp.cars;
run;
```

#### **Output:**

#### Case 1

							The First ne Secon	(T) (T) (T)						
Obs	Make	Model	Туре	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	Wł
1	Acura	MDX	SUV	Asia	All	\$36,945	\$33,337	3.5	6	265	17	23	4451	
2	Acura	RSX Type S 2dr	Sedan	Asia	Front	\$23,820	\$21,761	2.0	4	200	24	31	2778	
3	Acura	TSX 4dr	Sedan	Asia	Front	\$26,990	\$24,647	2.4	4	200	22	29	3230	
4	Acura	TL 4dr	Sedan	Asia	Front	\$33,195	\$30,299	3.2	6	270	20	28	3575	
5	Acura	3.5 RL 4dr	Sedan	Asia	Front	\$43,755	\$39,014	3.5	6	225	18	24	3880	
6	Acura	3.5 RL w/Navigation 4dr	Sedan	Asia	Front	\$46,100	\$41,100	3.5	6	225	18	24	3893	
7	Acura	NSX coupe 2dr manual S	Sports	Asia	Rear	\$89,765	\$79,978	3.2	6	290	17	24	3153	
8	Audi	A4 1.8T 4dr	Sedan	Europe	Front	\$25,940	\$23,508	1.8	4	170	22	31	3252	
9	Audi	A41.8T convertible 2dr	Sedan	Europe	Front	\$35,940	\$32,506	1.8	4	170	23	30	3638	
10	Audi	A4 2 0 4dr	Sodan	Europo	Front	¢21 040	620 046	2.0	.6	220	20	20	2462	

Sedan Europe All \$29,916 419 Volvo \$31.745 2.5 S60 2.5 4dr 208 20 27 3903 S60 T5 4dr Europe Front \$34,845 \$32,902 247 420 Volvo Sedan 421 Volvo S60 R 4dr Sedan Europe All \$37.560 \$35.382 2.5 5 300 18 25 3571 S80 2.9 4dr 422 Volvo Front \$37,730 \$35,542 2.9 6 208 20 28 3576 Sedan Europe S80 2.5T 4dr 423 Volvo Europe All \$37,885 \$35,688 2.5 5 194 20 27 3691 C70 LPT \$38,203 2.4 5 21 424 Volvo Sedan Europe Front \$40,565 197 28 3450 convertible 2dr 425 Volvo C70 HPT Sedan Europe Front \$42,565 \$40,083 2.3 5 242 20 26 3450 convertible 2dr 426 Volvo S80 T6 4dr Europe Front \$45,210 \$42,573 2.9 6 268 19 26 3653 427 Volvo Europe Front \$26,135 170 V40 \$24,641 1.9 22 29 2822 Wagon 4 428 Volvo Wagon Europe All \$35,145 \$33,112 5 3823

> Cars Dataset SUVs Confidential

# Here we have two titles and three footnotes.

## Case 2:

19	Volvo	S60 2.5 4dr	Sedan	Europe	All	\$31,745	\$29,916	2.5	5	208	20	27	3903
420	Volvo	S60 T5 4dr	Sedan	Europe	Front	\$34,845	\$32,902	2.3	5	247	20	28	3766
421	Volvo	S60 R 4dr	Sedan	Europe	All	\$37,560	\$35,382	2.5	5	300	18	25	3571
422	Volvo	S80 2.9 4dr	Sedan	Europe	Front	\$37,730	\$35,542	2.9	6	208	20	28	3576
423	Volvo	S80 2.5T 4dr	Sedan	Europe	All	\$37,885	\$35,688	2.5	5	194	20	27	3691
424	Volvo	C70 LPT convertible 2dr	Sedan	Europe	Front	\$40,565	\$38,203	2.4	5	197	21	28	3450
425	Volvo	C70 HPT convertible 2dr	Sedan	Europe	Front	\$42,565	\$40,083	2.3	5	242	20	26	3450
426	Volvo	S80 T6 4dr	Sedan	Europe	Front	\$45,210	\$42,573	2.9	6	268	19	26	3653
427	Volvo	V40	Wagon	Europe	Front	\$26,135	\$24,641	1.9	4	170	22	29	2822
428	Volvo	XC70	Wagon	Europe	All	\$35,145	\$33,112	2.5	5	208	20	27	3823

Here I changed the footnote3 to Sedans. Therefore, it overwrites the previous footnote3.

## Case3:

						Th	e Secon	d Line					
Obs	Make	Model	Туре	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight
1	Acura	MDX	SUV	Asia	All	\$36,945	\$33,337	3.5	6	265	17	23	4451
2	Acura	RSX Type S 2dr	Sedan	Asia	Front	\$23,820	\$21,761	2.0	4	200	24	31	2778
3	Acura	TSX 4dr	Sedan	Asia	Front	\$26,990	\$24,647	2.4	4	200	22	29	3230
4	Acura	TL 4dr	Sedan	Asia	Front	\$33,195	\$30,299	3.2	6	270	20	28	3575
5	Acura	3.5 RL 4dr	Sedan	Asia	Front	\$43,755	\$39,014	3.5	6	225	18	24	3880
6	Acura	3.5 RL w/Navigation 4dr	Sedan	Asia	Front	\$46,100	\$41,100	3.5	6	225	18	24	3893
7	Acura	NSX coupe 2dr manual S	Sports	Asia	Rear	\$89,765	\$79,978	3.2	6	290	17	24	3153
8	Audi	A4 1.8T 4dr	Sedan	Europe	Front	\$25,940	\$23,508	1.8	4	170	22	31	3252
9	Audi	A41.8T convertible 2dr	Sedan	Europe	Front	\$35,940	\$32,506	1.8	4	170	23	30	3638
10	Audi	A4 3.0 4dr	Sedan	Europe	Front	\$31,840	\$28,846	3.0	6	220	20	28	3462
				_		000.100	200.000			000		-00	2522

#### ▶ lable of Contents

				1									
419	Volvo	S60 2.5 4dr	Sedan	Europe	All	\$31,745	\$29,916	2.5	5	208	20	27	3903
420	Volvo	S60 T5 4dr	Sedan	Europe	Front	\$34,845	\$32,902	2.3	5	247	20	28	3766
421	Volvo	S60 R 4dr	Sedan	Europe	All	\$37,560	\$35,382	2.5	5	300	18	25	3571
422	Volvo	S80 2.9 4dr	Sedan	Europe	Front	\$37,730	\$35,542	2.9	6	208	20	28	3576
423	Volvo	S80 2.5T 4dr	Sedan	Europe	All	\$37,885	\$35,688	2.5	5	194	20	27	3691
424	Volvo	C70 LPT convertible 2dr	Sedan	Europe	Front	\$40,565	\$38,203	2.4	5	197	21	28	3450
425	Volvo	C70 HPT convertible 2dr	Sedan	Europe	Front	\$42,565	\$40,083	2.3	5	242	20	26	3450
426	Volvo	S80 T6 4dr	Sedan	Europe	Front	\$45,210	\$42,573	2.9	6	268	19	26	3653
427	Volvo	V40	Wagon	Europe	Front	\$26,135	\$24,641	1.9	4	170	22	29	2822
428	Volvo	XC70	Wagon	Europe	All	\$35,145	\$33,112	2.5	5	208	20	27	3823

Sedans

In this case I have cancelled the title1 and the footnote2.

# Q5

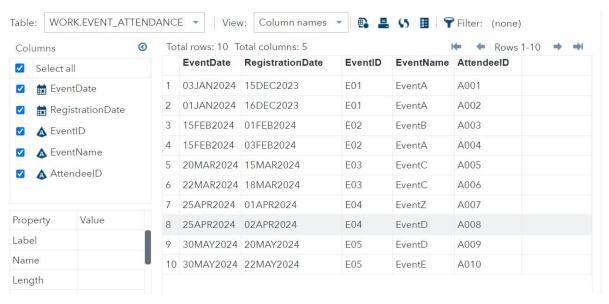
## Code:

```
102 /* 05 */
 103 /* Creating Table: */
 104 data event attendance;
 105 format EventDate RegistrationDate date9.;
 106 input EventID $ EventName $ EventDate : date9. AttendeeID $
 107 RegistrationDate : date9.;
 108 datalines;
 109 E01 EventA 03JAN2024 A001 15DEC2023
 110 E01 EventA 01JAN2024 A002 16DEC2023
 111 E02 EventB 15FEB2024 A003 01FEB2024
 112 E02 EventA 15FEB2024 A004 03FEB2024
 113 E03 EventC 20MAR2024 A005 15MAR2024
 114 E03 EventC 22MAR2024 A006 18MAR2024
 115 E04 EventZ 25APR2024 A007 01APR2024
 116 E04 EventD 25APR2024 A008 02APR2024
 117 E05 EventD 30MAY2024 A009 20MAY2024
 118 E05 EventE 30MAY2024 A010 22MAY2024
 119;
 120 run;
```

```
123 data event attendance;
124 set WORK.EVENT ATTENDANCE;
125 DaysToEvent = EventDate - RegistrationDate;
126 if DaysToEvent >= 30 then RegistrationCategory = ' Early
127 Registrant';
128 else if DaysToEvent > = 15 and DaysToEvent < 30 then
129 RegistrationCategory = ' Standard Registrant';
130 else RegistrationCategory = ' Late Registrant';
131
132 proc means data=event attendance noprint;
133 class RegistrationCategory;
134 var DaysToEvent;
135 output out=mean_days(drop=_type_ _freq_) mean=AvgDaysToEvent;
136 run;
137
138
139 proc sort data=mean days;
140 by EVENTNAME AvgDaysToEvent;
142 proc print data=mean_days;
143 run;
144
145
146
147
```

# **Output:**

# **Creating the dataset**



#### Part1



#### Part2

