



**BHARTIYA VIDYA BHAVAN'S
SARDAR PATEL INSTITUTE OF TECHNOLOGY**

**Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai – 400058-
India**

CLASS: B.E. I.T

ACADEMIC YEAR: 2022-23

COURSE: DATA ANALYTICS

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ROLL NO: 2019140001

EXPERIMENT 2

AIM : Understanding and learning SAS Studio

Introduction:

SAS Studio a web browser-based interface for SAS programmers that also suits the needs of novice users by providing an assistive framework. SAS Studio lets you work with the same SAS server from your desk, your laptop at home or wherever you have a browser and a connection.

Using SAS we can access data files, libraries and existing programs – or write new ones – with this developmental web application accessible through your browser. With SAS Studio, we can use predefined tasks to generate SAS code. When we run a program or task, the technology processes the SAS code on a SAS server, which can be a server in a cloud environment, in your local environment, or SAS installed on our local machine. After the code is processed, the results are returned to SAS Studio in your browser.

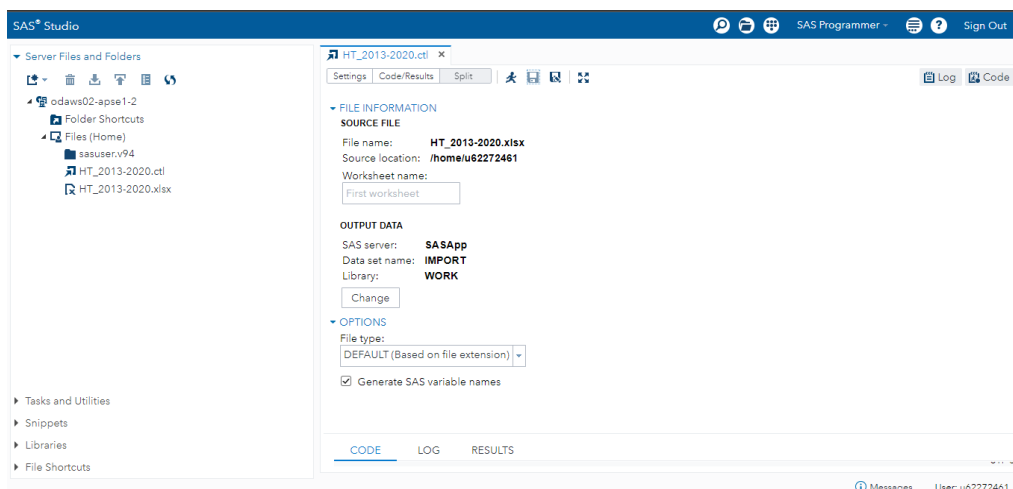
In addition to writing and running your own SAS programs, you can use the predefined tasks that are included with SAS Studio to analyze your data. The tasks are based on SAS procedures and provide access to some of the most commonly used graph and analytical procedures. You can also use the default task template to write your own tasks.

Implementation:

- Data used
 - File name: HT_2013-2020
 - CSV file containing the state-wise Hate Crime (specifically Human Trafficking) Statistics of USA from year 2013 to 2020
 - Other important parameters of the data are Sub-category, Total cases and Fake cases

HT 2013-2020 (1) - Excel (Product Activation Failed)																					
FILE	HOME	INSERT	PAGE LAYOUT	FORMULAS	DATA	REVIEW	VIEW	ACROBAT													
Calibri 11 General Conditional Formatting Table Cell Styles Insert Delete Format Autosum Sort & Find Filter Select																					
Clipboard Font Alignment Number Styles Cells Editing																					
L12 X Y Z MSa counties 100,000 or over																					
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	
1	DATA 1 - ORI	PUB. Axi	PUB. Axi	AGENCY	STATE	STATE	DIVISIO	COUNT	REGION	POPULU	POPULU	OFFENSE	OFFENSE	ACTUAL	UNPOL	CLEAR	JUVENI	CLEARED	COUNT	U	
2	2016	M048086	Independence	City	MO	Missouri	West North	JACKSON	Midwest	2	Cities	from	81	Human Tr	Commercial	2	0	0	0	0	
3	2016	TK220120	Fort Worth	City	TX	Texas	West South	PARKER	S	1B	Cities	from	82	Human Tr	Involuntary	1	0	0	0	0	
4	2016	TK2727010X	Austin	City	TX	Texas	West South	WILLIAMS	South	1B	Cities	from	82	Human Tr	Involuntary	2	0	0	0	0	
5	2019	M0020510	Las Vegas Metropolitan	City	NV	Nevada	Mountain	CLARK	West	1A	Cities	1.0C	81	Human Tr	Commercial	15	0	4	0	0	
6	2017	A2307050	Chandler	City	AZ	Arizona	Mountain	MARICOP	West	2	Cities	from	81	Human Tr	Commercial	1	0	0	0	0	
7	2018	M090520	Fargo	City	ND	North Dak	West North	FAIR	Midwest	2	Cities	from	81	Human Tr	Commercial	1	0	0	0	0	
8	2020	G4030010	Newman	City	GA	Georgia	South Atl	CLAYTON	South	4	Cities	from	81	Human Tr	Commercial	1	0	1	0	0	
9	2020	G4040020	Dekalb County	Pol	GA	Georgia	South Atl	DEKALB	South	9A	MSA	count	81	Human Tr	Commercial	2	0	0	0	0	
10	2020	G4040020	Dekalb County	Pol	GA	Georgia	South Atl	DEKALB	South	9A	MSA	count	82	Human Tr	Involuntary	1	0	0	0	0	
11	2020	G4040020	Dekalb County	Pol	GA	Georgia	South Atl	DEKALB	South	9A	MSA	count	81	Human Tr	Commercial	2	0	1	0	0	
12	2020	G4040020	Dekalb County	Pol	GA	Georgia	South Atl	DEKALB	South	9A	MSA	count	81	Human Tr	Commercial	5	0	0	0	0	
13	2020	G4040020	Dekalb County	Pol	GA	Georgia	South Atl	DEKALB	South	9A	MSA	count	82	Human Tr	Involuntary	1	0	0	0	0	
14	2020	G4040020	Dekalb County	Pol	GA	Georgia	South Atl	DEKALB	South	9A	MSA	count	81	Human Tr	Commercial	1	0	0	0	0	
15	2020	G4040020	Dekalb County	Pol	GA	Georgia	South Atl	DEKALB	South	9A	MSA	count	81	Human Tr	Commercial	1	0	1	0	0	
16	2020	G4040020	Dekalb County	Pol	GA	Georgia	South Atl	DEKALB	South	9A	MSA	count	81	Human Tr	Commercial	2	0	0	0	0	
17	2017	A2307170	Mesa	City	AZ	Arizona	Mountain	MARICOP	West	1C	Cities	from	81	Human Tr	Commercial	1	0	0	0	0	
18	2017	A2307000	Jefferson	County	LA	Louisiana	West South	JEFFERSON	South	MSA	count	81	Human Tr	Commercial	3	0	3	0	0	0	
19	2020	G4090010	Meriwether	County	GA	Georgia	South Atl	MERIWETHER	South	9C	MSA	count	81	Human Tr	Commercial	1	0	0	0	0	
20	2018	A2300000	Jefferson	County	LA	Louisiana	West South	JEFFERSON	South	MSA	count	81	Human Tr	Commercial	4	0	2	0	0	0	
21	2020	G4010010	Muskegon County	S	Other	GA	Georgia	South Atl	MUSKOGEE	South	9D	MSA	count	81	Human Tr	Commercial	4	0	0	0	0
22	2020	G4010010	Muskegon County	S	Other	GA	Georgia	South Atl	MUSKOGEE	South	9D	MSA	count	81	Human Tr	Commercial	3	0	0	0	0
23	2020	G4020010	Nashville	City	GA	Georgia	South Atl	BERRIN	South	6	Cities	from	81	Human Tr	Commercial	1	0	0	0	0	
HT 2013-2020																					

- Input file information



- Import file

Code:

```
/* Generated Code (IMPORT) */  
/* Source File: HT_2013-2020.xlsx */  
/* Source Path: /home/u62272461 */  
/* Code generated on: 11/3/22, 3:15 PM */
```

```
%web_drop_table(WORK.IMPORT1);
```

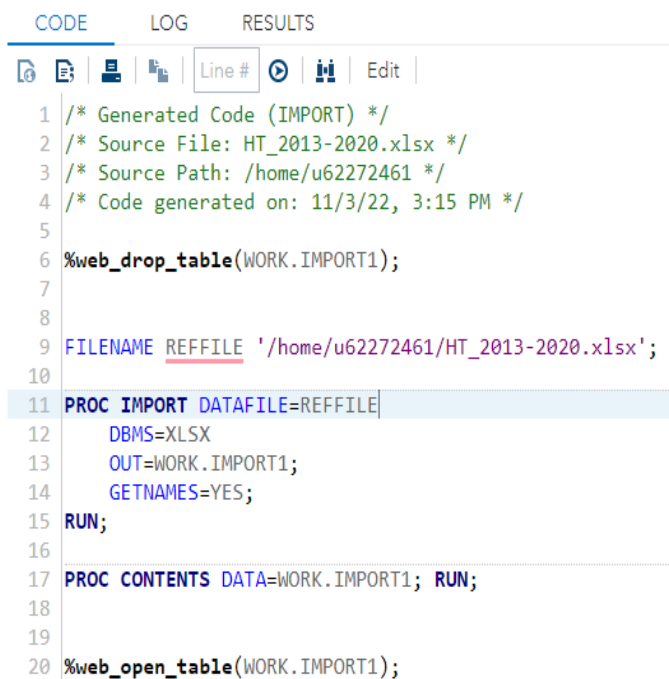
```
FILENAME REFFILE '/home/u62272461/HT_2013-2020.xlsx';
```

```
PROC IMPORT DATAFILE=REFFILE  
    DBMS=XLSX  
    OUT=WORK.IMPORT1;  
    GETNAMES=YES;
```

```
RUN;
```

```
PROC CONTENTS DATA=WORK.IMPORT1; RUN;
```

```
%web_open_table(WORK.IMPORT1);
```



```
CODE    LOG    RESULTS  
Line #  
1  /* Generated Code (IMPORT) */  
2  /* Source File: HT_2013-2020.xlsx */  
3  /* Source Path: /home/u62272461 */  
4  /* Code generated on: 11/3/22, 3:15 PM */  
5  
6  %web_drop_table(WORK.IMPORT1);  
7  
8  
9  FILENAME REFFILE '/home/u62272461/HT_2013-2020.xlsx';  
10  
11 PROC IMPORT DATAFILE=REFFILE  
12     DBMS=XLSX  
13     OUT=WORK.IMPORT1;  
14     GETNAMES=YES;  
15 RUN;  
16  
17 PROC CONTENTS DATA=WORK.IMPORT1; RUN;  
18  
19  
20 %web_open_table(WORK.IMPORT1);
```

Result:

CODE LOG RESULTS **OUTPUT DATA**

Table: WORK.IMPORT View: Column names Filter: (none)

Columns Select all

- ☒ DATA_YEAR
- ☒ ORI
- ☒ PUB_AGENCY_NAME
- ☒ PUB_AGENCY_UNIT
- ☒ AGENCY_TYPE_NAME
- ☒ STATE_ABBR

Property Value

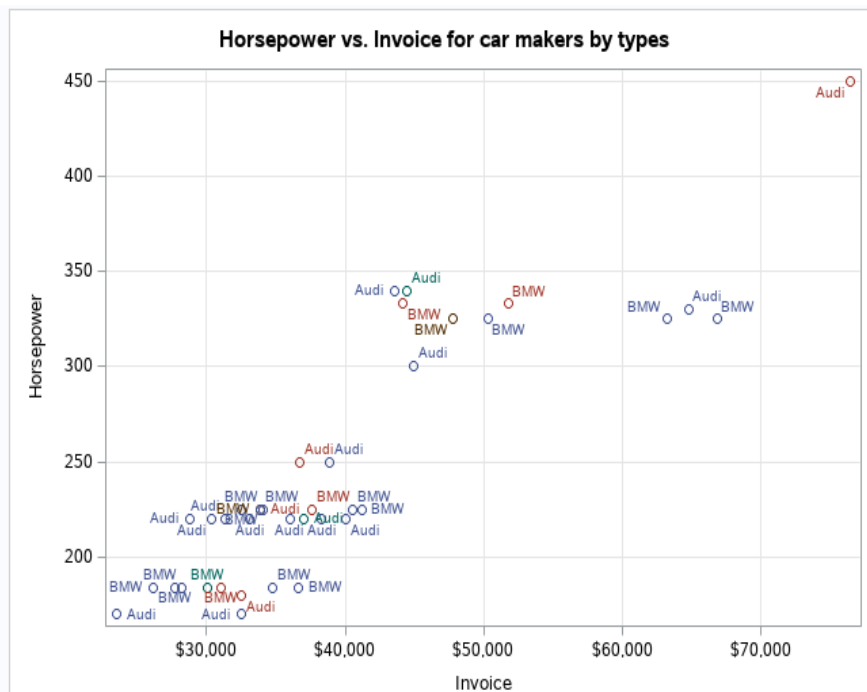
Property	Value
Label	
Name	
Length	
Type	

Total rows: 4417 Total columns: 19 Rows 1-100

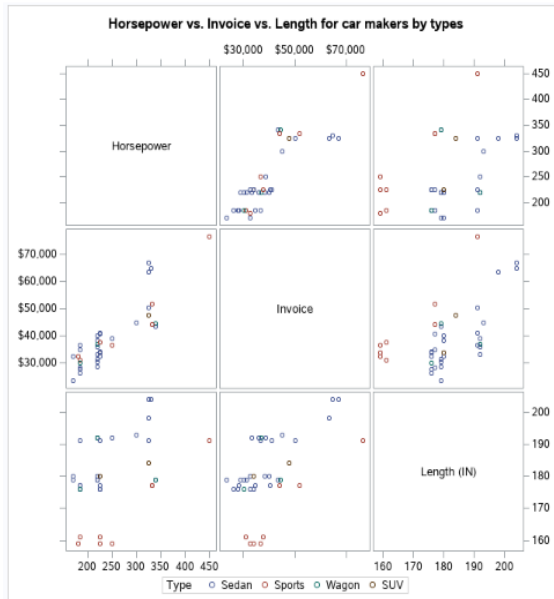
	DATA_YEAR	ORI	PUB_AGENCY_NAME
1	2016	MO048060	Independence
2	2016	TX2201200	Fort Worth
3	2016	TX2270100	Austin
4	2019	NV0020100	Las Vegas Metropolitan Police Department
5	2017	AZ0070500	Chandler
6	2018	ND0090200	Fargo
7	2020	GA0380100	Newnan
8	2020	GA0440200	DeKalb County Police Department
9	2020	GA0440200	DeKalb County Police Department
10	2020	GA0440200	DeKalb County Police Department
11	2020	GA0440200	DeKalb County Police Department
12	2020	GA0440200	DeKalb County Police Department

Messages: 1 User: u62272461

- Plotting scatter plot of horsepower vs make using the “CARS” dataset that is readily available in SAS Studio for implementation



- Plotting a scatter matrix



Code:

```
/* scatter plot */
```

```
PROC SQL;
```

```
create table CARS1 as
```

```
SELECT make, model, type, invoice, horsepower, length, weight
```

```
FROM
```

```
SASHELP.CARS
```

```
WHERE make in ('Audi','BMW')
```

```
;
```

```
RUN;
```

```
TITLE 'Scatterplot - Two Variables';
```

```
PROC sgscatter DATA = CARS1;
```

```
  PLOT horsepower*Invoice
```

```
  / datalabel = make group = type grid;
```

```
  title 'Horsepower vs. Invoice for car makers by types';
```

```
RUN;
```

```
/* scatter matrix */
```

```
PROC sgscatter DATA = CARS1;
```

```
  matrix horsepower invoice length
```

```
  / group = type;
```

```
  title 'Horsepower vs. Invoice vs. Length for car makers by types';
```

```
RUN;
```