SET B **SAP ID: 70022100516** **ROLL NO.: A053**

SVKM's NMIMS

SCHOOL OF TECHNOLOGY MANAGEMENT & ENGINEERING, NAVI-MUMBAI

First Mid-Term Examination January 2024, Academic Year: 2023-2024

Program: BT/MBA Tech Year: Semester:

Subject: Business Information Visualization & Analysis Time: 11.30- 12.30

Date: 25/01/2024 Total Marks:20 No. of Pages: 1

Instructions:

1) All questions are compulsory.
2) You have to write SAS code and Run it in SAS studio. Submit the screenshot of code and output for all the questions in a PDF file.
3) If there are multiple steps involved in the code, run each step and take screenshot of output at each step.

Q. No.	CO/ BL	Statement of the question	Marks
Q.1	CO1/5	Load the SASHELP.CLASS dataset. Create a new dataset named **Class_Ages** containing only the columns **Name** and **Age**. Calculate the average age of the students in the **Class_Ages** dataset using the **MEANS** procedure.	(4)
Q.2	CO1/5	Load the SASHELP.HEART dataset. Use the **PRINT** procedure to display the dataset. Create a new dataset named **HighBloodPressure** containing only individuals with a **Systolic** (systolic blood pressure) greater than 140. Display the first 5 rows of the **HighBloodPressure** dataset.	(4)
Q.3	CO1/6	Create a product inventory dataset with columns: **ProductID**, **ProductName**, **StockQuantity**, **LastStockUpdate** with 5 rows (create your own). Create a new variable named **DaysSinceUpdate** representing the number of days since the last stock update. Identify products that haven't been updated in the last 30 days. Calculate the average stock quantity for these products. Sort the results by product name.	(4)
Q.4	CO1/5	Select any dataset from SASHELP library and demonstrate example of AND, OR and Not In operator.	(4)
Q.5	CO1/6	Demonstrate example of lable and split statement.	(4)

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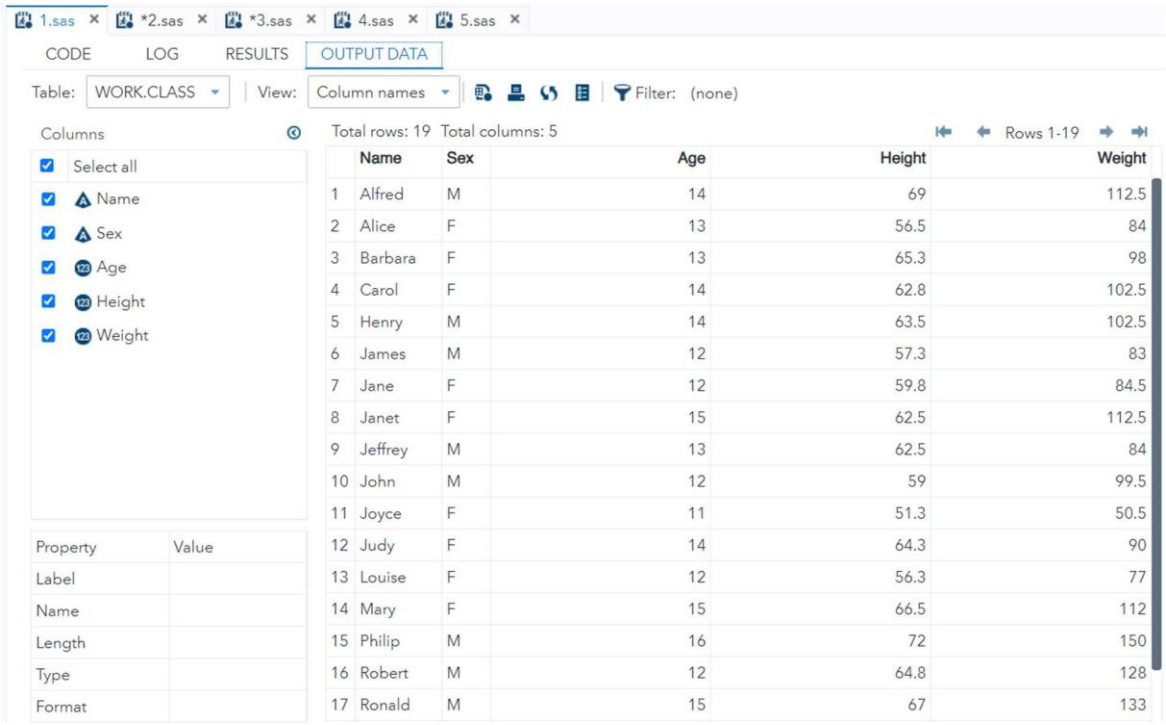
Class: B.TECH CE SEM 6

1) **Load the SASHELP.CLASS dataset. Create a new dataset named Class_Ages containing only the columns Name and Age. Calculate the average age of the students in the Class_Ages dataset using the MEANS procedure.**

Code –

```
data class;
    set sashelp.class;
run;

data Class_Ages;
    set class(keep=Name Age);
run;

proc means data=Class_Ages mean;
    var Age;
run;
```

Output Data–



1.sas | *2.sas | *3.sas | 4.sas | 5.sas

CODE | LOG | RESULTS | OUTPUT DATA

Table: WORK.CLASS | View: Column names | Filter: (none)

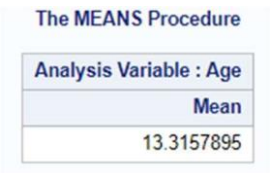
Columns: Select all, Name, Sex, Age, Height, Weight

Total rows: 19 Total columns: 5 Rows 1-19

	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69	112.5
2	Alice	F	13	56.5	84
3	Barbara	F	13	65.3	98
4	Carol	F	14	62.8	102.5
5	Henry	M	14	63.5	102.5
6	James	M	12	57.3	83
7	Jane	F	12	59.8	84.5
8	Janet	F	15	62.5	112.5
9	Jeffrey	M	13	62.5	84
10	John	M	12	59	99.5
11	Joyce	F	11	51.3	50.5
12	Judy	F	14	64.3	90
13	Louise	F	12	56.3	77
14	Mary	F	15	66.5	112
15	Philip	M	16	72	150
16	Robert	M	12	64.8	128
17	Ronald	M	15	67	133

Property	Value
Label	
Name	
Length	
Type	
Format	

Result –



The MEANS Procedure

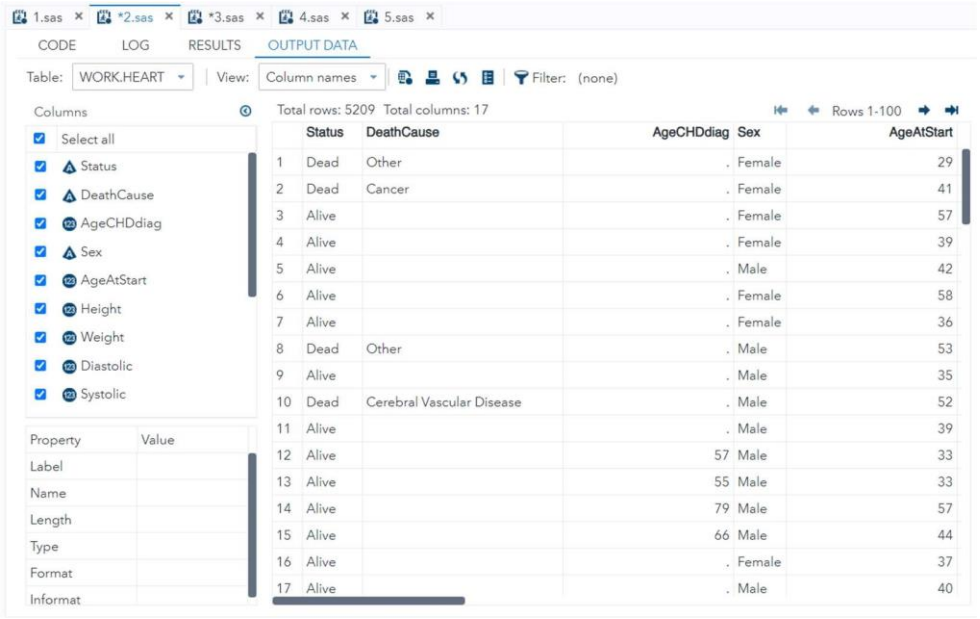
Analysis Variable : Age
Mean
13.3157895

2) Load the SASHELP.HEART dataset. Use the PRINT procedure to display the dataset. Create a new dataset named HighBloodPressure containing only individuals with a Systolic (systolic blood pressure) greater than 140. Display the first 5 rows of the HighBloodPressure dataset.

Code –

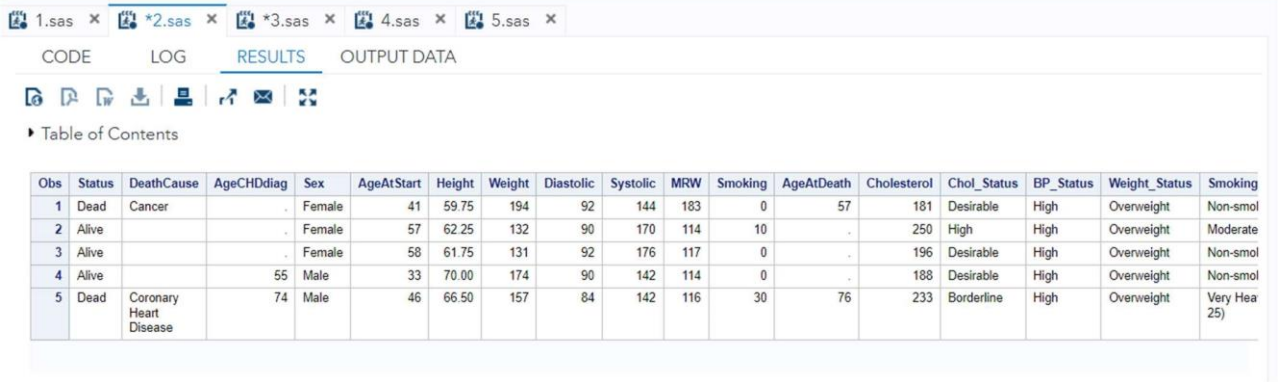
```
data Heart;
   set sashelp.heart;
run;
proc print data=Heart;
run;

data HighBloodPressure;
   set Heart;
   if Systolic > 140;
run;
proc print data=HighBloodPressure (obs=5);
run;
```

Output Data–



	Status	DeathCause	AgeCHDdiag	Sex	AgeAtStart
1	Dead	Other	.	Female	29
2	Dead	Cancer	.	Female	41
3	Alive		.	Female	57
4	Alive		.	Female	39
5	Alive		.	Male	42
6	Alive		.	Female	58
7	Alive		.	Female	36
8	Dead	Other	.	Male	53
9	Alive		.	Male	35
10	Dead	Cerebral Vascular Disease	.	Male	52
11	Alive		.	Male	39
12	Alive		57	Male	33
13	Alive		55	Male	33
14	Alive		79	Male	57
15	Alive		66	Male	44
16	Alive		.	Female	37
17	Alive		.	Male	40

Result –



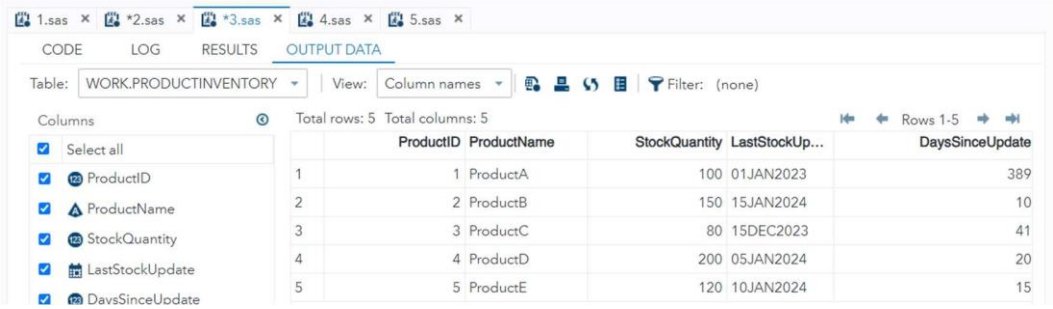
Obs	Status	DeathCause	AgeCHDdiag	Sex	AgeAtStart	Height	Weight	Diastolic	Systolic	MRW	Smoking	AgeAtDeath	Cholesterol	Chol_Status	BP_Status	Weight_Status	Smoking
1	Dead	Cancer	.	Female	41	59.75	194	92	144	183	0	57	181	Desirable	High	Overweight	Non-smol
2	Alive		.	Female	57	62.25	132	90	170	114	10	.	250	High	High	Overweight	Moderate
3	Alive		.	Female	58	61.75	131	92	176	117	0	.	196	Desirable	High	Overweight	Non-smol
4	Alive		55	Male	33	70.00	174	90	142	114	0	.	188	Desirable	High	Overweight	Non-smol
5	Dead	Coronary Heart Disease	74	Male	46	66.50	157	84	142	116	30	76	233	Borderline	High	Overweight	Very Hea 25)

3) **Create a product inventory dataset with columns: ProductID, ProductName, StockQuantity, LastStockUpdate with 5 rows (create your own). Create a new variable named DaysSinceUpdate representing the number of days since the last stock update. Identify products that haven't been updated in the last 30 days. Calculate the average stock quantity for these products. Sort the results by product name.**

Code –

```
data ProductInventory;
    input ProductID ProductName $ StockQuantity LastStockUpdate : date9.;
    format LastStockUpdate date9.;
    datalines;
1 ProductA 100 01Jan2023
3 ProductC 80  15Dec2023
2 ProductB 150 15Jan2024
5 ProductE 120 10Jan2024
4 ProductD 200 05Jan2024
;

data ProductInventory;
    set ProductInventory;
    DaysSinceUpdate = intck('days', LastStockUpdate, today());
run;

data OutdatedProducts;
    set ProductInventory;
    where DaysSinceUpdate > 30;
run;

proc means data=OutdatedProducts mean;
    var StockQuantity;
run;
```

Output Data –



	ProductID	ProductName	StockQuantity	LastStockUp...	DaysSinceUpdate
1	1	ProductA	100	01JAN2023	389
2	2	ProductB	150	15JAN2024	10
3	3	ProductC	80	15DEC2023	41
4	4	ProductD	200	05JAN2024	20
5	5	ProductE	120	10JAN2024	15

Result –

The MEANS Procedure

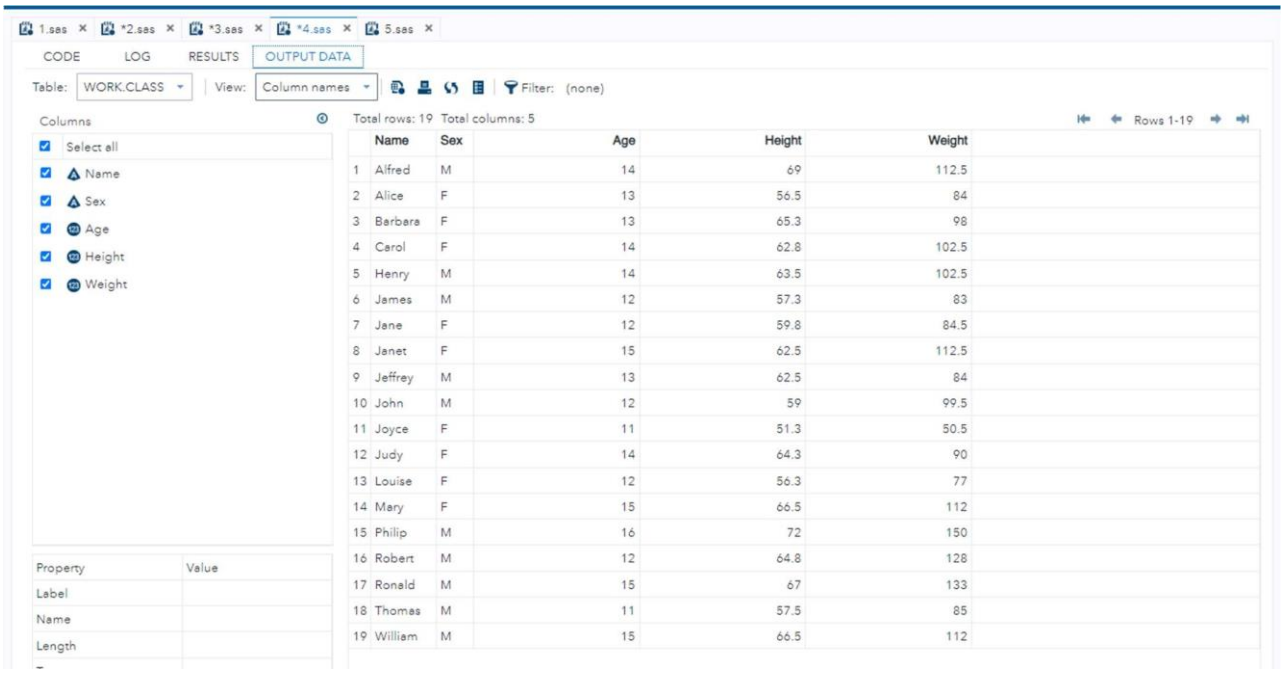
Analysis Variable : StockQuantity
Mean
90.0000000

4) Select any dataset from SASHELP library and demonstrate example of AND, OR and Not In operator.

Code –

```
data class;
    set sashelp.class;
run;

proc print data=class;
    where age > 12 and age < 16;
    title 'Students aged between 13 and 15';
run;

proc print data=class;
    where sex = 'M' or age > 15;
    title 'Male students or students aged over 15';
run;

proc print data=class;
    where sex ne 'M' and age not in (14, 15);
    title 'Female students who are not 14 or 15 years old';
run;
```

Output Data–



	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69	112.5
2	Alice	F	13	56.5	84
3	Barbara	F	13	65.3	98
4	Carol	F	14	62.8	102.5
5	Henry	M	14	63.5	102.5
6	James	M	12	57.3	83
7	Jane	F	12	59.8	84.5
8	Janet	F	15	62.5	112.5
9	Jeffrey	M	13	62.5	84
10	John	M	12	59	99.5
11	Joyce	F	11	51.3	50.5
12	Judy	F	14	64.3	90
13	Louise	F	12	56.3	77
14	Mary	F	15	66.5	112
15	Philip	M	16	72	150
16	Robert	M	12	64.8	128
17	Ronald	M	15	67	133
18	Thomas	M	11	57.5	85
19	William	M	15	66.5	112

Result –

Students aged between 13 and 15

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0
4	Carol	F	14	62.8	102.5
5	Henry	M	14	63.5	102.5
8	Janet	F	15	62.5	112.5
9	Jeffrey	M	13	62.5	84.0
12	Judy	F	14	64.3	90.0
14	Mary	F	15	66.5	112.0
17	Ronald	M	15	67.0	133.0
19	William	M	15	66.5	112.0

Male students or students aged over 15

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
5	Henry	M	14	63.5	102.5
6	James	M	12	57.3	83.0
9	Jeffrey	M	13	62.5	84.0
10	John	M	12	59.0	99.5
15	Philip	M	16	72.0	150.0
16	Robert	M	12	64.8	128.0
17	Ronald	M	15	67.0	133.0
18	Thomas	M	11	57.5	85.0
19	William	M	15	66.5	112.0

Female students who are not 14 or 15 years old

Obs	Name	Sex	Age	Height	Weight
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0
7	Jane	F	12	59.8	84.5
11	Joyce	F	11	51.3	50.5
13	Louise	F	12	56.3	77.0

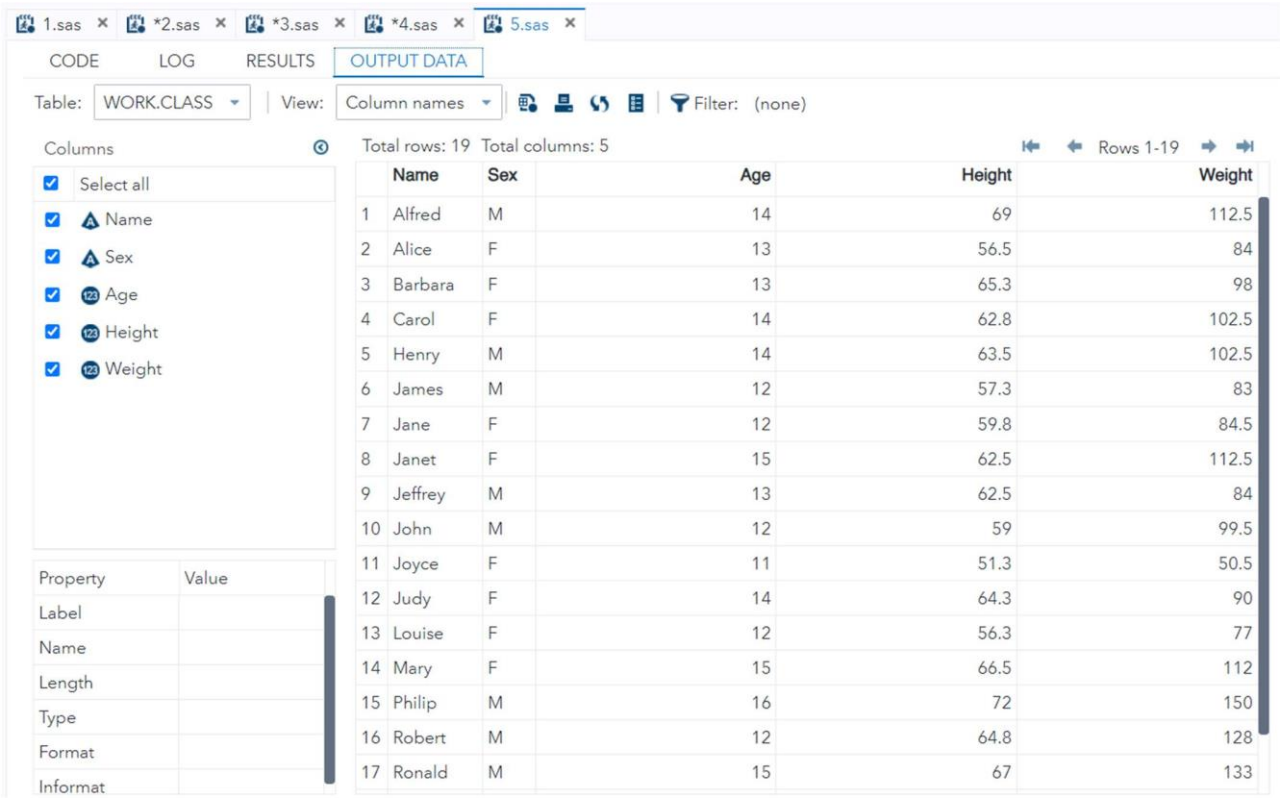
5) Demonstrate example of lable and split statement.

Code –

```
data class;
    set sashelp.class;
run;

data class_labeled;
    set class;
    label
        age = 'Age of the Student'
        height = 'Height in Inches'
        weight = 'Weight in Pounds'
        ;
run;

data class_split1 class_split2;
    set class;
    if sex = 'M' then
        output class_split1;
    else
```

```
        output class_split2;
run;

proc print data=class_labeled label;
    title 'Labeled Dataset';
run;

proc print data=class_split1;
    title 'Male Students';
run;

proc print data=class_split2;
    title 'Female Students';
run;
```

Output Data–



	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69	112.5
2	Alice	F	13	56.5	84
3	Barbara	F	13	65.3	98
4	Carol	F	14	62.8	102.5
5	Henry	M	14	63.5	102.5
6	James	M	12	57.3	83
7	Jane	F	12	59.8	84.5
8	Janet	F	15	62.5	112.5
9	Jeffrey	M	13	62.5	84
10	John	M	12	59	99.5
11	Joyce	F	11	51.3	50.5
12	Judy	F	14	64.3	90
13	Louise	F	12	56.3	77
14	Mary	F	15	66.5	112
15	Philip	M	16	72	150
16	Robert	M	12	64.8	128
17	Ronald	M	15	67	133

Result –

1.sas × *2.sas × *3.sas × *4.sas × *5.sas ×

CODE LOG RESULTS OUTPUT DATA

Table of Contents

Labeled Dataset

Obs	Name	Sex	Age of the Student	Height in Inches	Weight in Pounds
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0
4	Carol	F	14	62.8	102.5
5	Henry	M	14	63.5	102.5
6	James	M	12	57.3	83.0
7	Jane	F	12	59.8	84.5
8	Janet	F	15	62.5	112.5
9	Jeffrey	M	13	62.5	84.0
10	John	M	12	59.0	99.5
11	Joyce	F	11	51.3	50.5
12	Judy	F	14	64.3	90.0
13	Louise	F	12	56.3	77.0
14	Mary	F	15	66.5	112.0
15	Philip	M	16	72.0	150.0
16	Robert	M	12	64.8	128.0
17	Ronald	M	15	67.0	133.0
18	Thomas	M	11	57.5	85.0
19	William	M	15	66.5	112.0

1.sas × *2.sas × *3.sas × *4.sas × *5.sas ×

CODE LOG RESULTS OUTPUT DATA

Table of Contents

18	Thomas	M	11	57.5	85.0
19	William	M	15	66.5	112.0

Male Students

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Henry	M	14	63.5	102.5
3	James	M	12	57.3	83.0
4	Jeffrey	M	13	62.5	84.0
5	John	M	12	59.0	99.5
6	Philip	M	16	72.0	150.0
7	Robert	M	12	64.8	128.0
8	Ronald	M	15	67.0	133.0
9	Thomas	M	11	57.5	85.0
10	William	M	15	66.5	112.0

Female Students

Obs	Name	Sex	Age	Height	Weight
1	Alice	F	13	56.5	84.0
2	Barbara	F	13	65.3	98.0
3	Carol	F	14	62.8	102.5
4	Jane	F	12	59.8	84.5
5	Janet	F	15	62.5	112.5
6	Joyce	F	11	51.3	50.5
7	Judy	F	14	64.3	90.0
8	Louise	F	12	56.3	77.0
9	Mary	F	15	66.5	112.0