

. HW 3(5), 4(5), 5(5), 6(5), 15(5), 16(5), 22(10), 25(25) = 65

$$60/65 = 92.3$$

# Intro to SAS HW Chapter 5

Ian Liu

## HW Chapter 5 Q3

3. The Output Delivery System does which of the following?

- a. It determines what the output will look like
- b. It cannot be turned off
- c. It does not belong to a DATA step or PROC step
- d. All of the above

D. All of the above

## HW Chapter 5 Q4

4. To exclude procedure names from output, you use which statement?

- a. ODS NOPROCNAME
- b. ODS TITLEEXCLUDE
- c. ODS NOPROCTITLE
- d. None of the above

A. ODS NO PROCTITLE

Answer is C

## HW Chapter 5 Q5

5. When creating HTML output, which of the following options, along with the PATH option, will create a file that contains the results?

- a. FILE=
- b. BODY=
- c. Both can be used
- d. Neither can be used

B. BODY=

Answer is C


-5

## HW Chapter 5 Q6

6. Which of the following is true about the ODS LISTING destination?

- a. It creates high-resolution reports and graphics
- b. It does not use a style for tabular output
- c. It cannot send output to a file
- d. All of the above

B. It does not use a style for tabular output



## HW Chapter 5 Q15

15. A data set can be created using which of the following ODS statements?

- a. TRACE
- b. SELECT
- c. EXCLUDE
- d. OUTPUT

D. OUTPUT



## HW Chapter 5 Q16

16. Which ODS statement does not require you to specify an output object?

- a. TRACE
- b. SELECT
- c. EXCLUDE
- d. OUTPUT

A. TRACE



## HW Chapter 5 Q22

“Describe why you might choose to use ODS SELECT over ODS EXCLUDE or vice versa.”

You might choose ODS SELECT over ODS EXCLUDE if there are only a few outputs you want to choose. Conversely, if most of your outputs are to be kept and you only want to eliminate a

few, then ODS EXCLUDE would be more appropriate. This eliminates the need of having to list out too many things, also eliminating the probability of errors.

## HW Chapter 5 Q25

25. The SAS data set named CRAYONS contains information on standard Crayola crayon colors. The variables in this file are crayon number, color name, hexadecimal code, RGB triplet, pack size, year issued, and year retired.

- a. Examine this SAS data set including the variable labels and attributes. Create a table showing counts by year of issue. Also create a report listing the color name, hexadecimal code, and year of issue for each crayon. Send these two reports to the default output destination.
- b. Add code that will save the output in a text file.
- c. Add code that will save the output in an HTML file.
- d. Add code that will save the output in an RTF file.
- e. Add code that will save the output in a PDF file.

```
/* 25 A */
```

```
DATA CRAYONS;
```

```
set '/home/u62223361/Intro to SAS/HW5/crayons3.sas7bdat';
```

```
RUN;
```

```
PROC CONTENTS DATA = CRAYONS;
```

```
RUN;
```

```
ODS TRACE ON;
```

```
PROC FREQ DATA = CRAYONS;
```

```
TABLES Issued;
```

```
RUN;
```

```
PROC REPORT DATA = CRAYONS;
```

COLUMN Color Hex Issued;

RUN;

ODS TRACE OFF;

```
1      OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
NOTE: ODS statements in the SAS Studio environment may disable some output features.
69
70      /* 25 A */
71      DATA CRAYONS;
72      set '/home/u62223361/Intro to SAS/HW5/crayons3.sas7bdat';
NOTE: Data file WC000001.CRAYONS3.DATA is in a format that is native to another host, or the file encoding does not match the
session encoding. Cross Environment Data Access will be used, which might require additional CPU resources and might reduce
performance.
73      RUN;
```

NOTE: There were 133 observations read from the data set /home/u62223361/Intro to SAS/HW5/crayons3.sas7bdat.

NOTE: The data set WORK.CRAYONS has 133 observations and 7 variables.

NOTE: DATA statement used (Total process time):

real time	0.00 seconds
user cpu time	0.00 seconds
system cpu time	0.00 seconds
memory	1030.46k
OS Memory	22692.00k
Timestamp	03/14/2024 10:21:12 PM
Step Count	170 Switch Count 3
Page Faults	0
Page Reclaims	211
Page Swaps	0
Voluntary Context Switches	22
Involuntary Context Switches	0
Block Input Operations	0
Block Output Operations	264

74

75 PROC CONTENTS DATA = CRAYONS;

76 RUN;

NOTE: PROCEDURE CONTENTS used (Total process time):

real time	0.02 seconds
user cpu time	0.03 seconds
system cpu time	0.00 seconds
memory	1766.96k
OS Memory	22952.00k
Timestamp	03/14/2024 10:21:12 PM
Step Count	171 Switch Count 0
Page Faults	0
Page Reclaims	106
Page Swaps	0
Voluntary Context Switches	2
Involuntary Context Switches	0
Block Input Operations	0
Block Output Operations	16

```
77
78      ODS TRACE ON;
79      PROC FREQ DATA = CRAYONS;
80      TABLES Issued;
81      RUN;
```

Output Added:

```
-----
Name:      OneWayFreqs
Label:     One-Way Frequencies
Template:  Base.Freq.OneWayFreqs
Path:      Freq.Table1.OneWayFreqs
-----
```

NOTE: There were 133 observations read from the data set WORK.CRAYONS.

NOTE: PROCEDURE FREQ used (Total process time):

real time	0.01 seconds	
user cpu time	0.01 seconds	
system cpu time	0.00 seconds	
memory	1004.78k	
OS Memory	22952.00k	
Timestamp	03/14/2024 10:21:12 PM	
Step Count	172	Switch Count 2
Page Faults	0	
Page Reclaims	127	
Page Swaps	0	
Voluntary Context Switches	16	
Involuntary Context Switches	0	
Block Input Operations	0	
Block Output Operations	280	

```
82
83      PROC REPORT DATA = CRAYONS;
84      COLUMN Color Hex Issued;
85      RUN;
```

Output Added:

```
-----
Name:      Report
Label:
Data Name: ProcReportTable
Path:      Report.Report.Report
-----
```

NOTE: There were 133 observations read from the data set WORK.CRAYONS.

NOTE: PROCEDURE REPORT used (Total process time):

real time	0.05 seconds
user cpu time	0.06 seconds
system cpu time	0.01 seconds
memory	7795.71k
OS Memory	29624.00k
Timestamp	03/14/2024 10:21:12 PM
Step Count	173
Page Faults	0
Page Reclaims	1731
Page Swaps	0
Voluntary Context Switches	34
Involuntary Context Switches	0
Block Input Operations	0
Block Output Operations	16

```
86      ODS TRACE OFF;
87
88      OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
89
```

HW5.sas

CODELOGRESULTSOUTPUT DATA

Table of Contents

The CONTENTS Procedure

Data Set Name	WORK.CRAYONS	Observations	133
Member Type	DATA	Variables	7
Engine	V9	Indexes	0
Created	03/14/2024 18:21:12	Observation Length	88
Last Modified	03/14/2024 18:21:12	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	SOLARIS_X86_64_LINUX_X86_64_ALPHA_TRU64_LINUX_s64		
Encoding	utf-8 Unicode (UTF-8)		

Engine/Host Dependent Information

Data Set Page Size	131072
Number of Data Set Pages	1
First Data Page	1
Max Obs per Page	1488
Obs in First Data Page	133
Number of Data Set Repairs	0
Filename	/saswork/SAS_work001F0000981A_odsaw02-uw2-2.ods.sas.com/SAS_work47410000981A_odsaw02-uw2-2.ods.sas.com/crayons.sas7udat
Release Created	9.0401M7
Host Created	Linux
Inode Number	2281703025
Access Permission	rw-r--r--
Owner Name	u62223361
File Size	256KB
File Size (bytes)	262144

Alphabetic List of Variables and Attributes

#	Variable	Type	Len	Label
2	Color	Char	26	Crayon name
3	Hex	Char	8	HEX triplet
6	Issued	Num	8	Year issued
7	Number	Num	8	Crayon number
8	Pack	Num	8	Pack added
4	RGB	Char	15	RGB codes
7	Retired	Num	8	Year retired

The FREQ Procedure

Year issued	
	Cumulative
	Cumulative

Messages: 23User: u62223361

HW5.sas

CODELOGRESULTSOUTPUT DATA

Table of Contents

The FREQ Procedure

Year issued			
Issued	Frequency	Percent	Cumulative
			Frequency
1993	8	6.02	8
1949	40	30.08	48
1958	16	12.03	64
1972	8	6.02	72
1996	16	12.03	88
1993	16	12.03	104
1996	24	18.05	128
2000	1	0.75	129
2003	4	3.01	133

Crayon name

Crayon name	HEX triplet	Year issued
Almond	#EFD8CD	1998
Antique Brass	#CD9575	1998
Apricot	#FDD985	1949
Aquamarine	#78DBE2	1958
Asparagus	#87A96B	1993
Atomic Tangerine	#F5A714	1972
Banana Mania	#FAE7B5	1998
Beaver	#9F8170	1998
Bittersweet	#FDT86E	1949
Black	#000000	1903
Blizzard Blue	#ACE8EE	1972
Blue	#1F77F4	1903
Blue Ball	#A2A2D0	1958
Blue Gray	#6699CC	1958
Blue Green	#00988A	1949
Blue Violet	#7366BD	1949
Blush	#DESD83	1998
Brick Red	#C84154	1949
Brown	#80644D	1903
Burnt Orange	#FF7F49	1958
Burnt Sienna	#E47E50	1949
Cadet Blue	#B0B7C6	1958
Canary	#FFFF99	1998
Caribbean Green	#1CD3A2	1998
Castroville Pink	#FFA07C	1949

Messages: 23User: u62223361


```
/* 25 B */
```

```
ODS LISTING FILE='/home/u62223361/Intro to SAS/HW5/crayons3.lst';
```

```
PROC FREQ DATA = CRAYONS;
```

```
TABLES Issued;
```

```
RUN;  
PROC REPORT DATA = CRAYONS;  
    COLUMN Color Hex Issued;  
RUN;  
ODS LISTING CLOSE;
```





```
1      OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
NOTE: ODS statements in the SAS Studio environment may disable some output features.
```

```
69
```

```
70      /* 25 B */
71      ODS LISTING FILE='/home/u62223361/Intro to SAS/HW5/crayons3.lst';
72      PROC FREQ DATA = CRAYONS;
73      TABLES Issued;
74      RUN;
```

NOTE: There were 133 observations read from the data set WORK.CRAYONS.

NOTE: The PROCEDURE FREQ printed page 5.

NOTE: PROCEDURE FREQ used (Total process time):

real time	0.01 seconds
user cpu time	0.02 seconds
system cpu time	0.00 seconds
memory	1612.15k
OS Memory	23720.00k
Timestamp	03/14/2024 10:23:49 PM
Step Count	179
Page Faults	0
Page Reclaims	207
Page Swaps	0
Voluntary Context Switches	12
Involuntary Context Switches	0
Block Input Operations	0
Block Output Operations	272

```
75      PROC REPORT DATA = CRAYONS;
76      COLUMN Color Hex Issued;
77      RUN;
```

NOTE: There were 133 observations read from the data set WORK.CRAYONS.

NOTE: The PROCEDURE REPORT printed pages 6-8.

NOTE: PROCEDURE REPORT used (Total process time):

real time	0.05 seconds
user cpu time	0.05 seconds
system cpu time	0.00 seconds
memory	7700.62k
OS Memory	30648.00k
Timestamp	03/14/2024 10:23:49 PM
Step Count	180
Page Faults	0
Page Reclaims	1780
Page Swaps	0
Voluntary Context Switches	26
Involuntary Context Switches	0
Block Input Operations	0
Block Output Operations	32

```
78      ODS LISTING CLOSE;
79
80      OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
90
```

HW5.sas x

CODE LOG RESULTS

Table of Contents

The FREQ Procedure

Year issued				
Issued	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1903	8	6.02	8	6.02
1949	40	30.08	48	36.09
1958	16	12.03	64	48.12
1972	8	6.02	72	54.14
1990	16	12.03	88	66.17
1993	16	12.03	104	78.20
1998	24	18.05	128	96.24
2000	1	0.75	129	96.99
2003	4	3.01	133	100.00

Crayon name	HEX triplet	Year issued
Almond	#FDECD	1998
Antique Brass	#CD9575	1998
Apricot	#DD985	1949
Aquamarine	#78DCE2	1958
Asparagus	#B7A96B	1993
Atomic Tangerine	#FFA474	1972
Banana Mania	#FAE785	1998
Beaver	#9F9170	1998
Bitterweet	#FD7C6E	1949
Black	#000000	1903
Bizzard Blue	#ACE5EE	1972
Blue	#1F7FE	1903
Blue Bell	#A2A2D0	1998
Blue Gray	#6699CC	1958
Blue Green	#0099BA	1949
Blue Violet	#7366BD	1949
Blush	#DE5D83	1998
Brick Red	#CB4154	1949
Brown	#B467AD	1903
Burnt Orange	#FF7F49	1958
Burnt Sienna	#E47E5D	1949

Messages: 24 User: u62223361

```
/* 25 C */
```

```
ODS HTML PATH='/home/u62223361/Intro to SAS/HW5/' BODY="crayons3.html";
```

```
PROC FREQ DATA = CRAYONS;
```

```
TABLES Issued;
```

```
RUN;
```

```
PROC REPORT DATA = CRAYONS;
```

```
COLUMN Color Hex Issued;
```

```
RUN;
```

```
ODS HTML CLOSE;
```



```
1      OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
NOTE: ODS statements in the SAS Studio environment may disable some output features.
```

```
69
70      /* 25 C */
71      ODS HTML PATH='/home/u62223361/Intro to SAS/HW5/' BODY="crayons3.html";
NOTE: Writing HTML Body file: crayons3.html
72      PROC FREQ DATA = CRAYONS;
73      TABLES Issued;
74      RUN;
```

NOTE: There were 133 observations read from the data set WORK.CRAYONS.

NOTE: PROCEDURE FREQ used (Total process time):

real time	0.01 seconds		
user cpu time	0.02 seconds		
system cpu time	0.00 seconds		
memory	2670.75k		
OS Memory	28072.00k		
Timestamp	03/14/2024 10:24:32 PM		
Step Count	186	Switch Count	2
Page Faults	0		
Page Reclaims	561		
Page Swaps	0		
Voluntary Context Switches	10		
Involuntary Context Switches	0		
Block Input Operations	0		
Block Output Operations	344		

```
75      PROC REPORT DATA = CRAYONS;
76      COLUMN Color Hex Issued;
77      RUN;
```

NOTE: There were 133 observations read from the data set WORK.CRAYONS.

NOTE: PROCEDURE REPORT used (Total process time):

real time	0.06 seconds		
user cpu time	0.07 seconds		
system cpu time	0.00 seconds		
memory	7714.28k		
OS Memory	35000.00k		
Timestamp	03/14/2024 10:24:32 PM		
Step Count	187	Switch Count	1
Page Faults	0		
Page Reclaims	1846		
Page Swaps	0		
Voluntary Context Switches	34		
Involuntary Context Switches	0		
Block Input Operations	0		
Block Output Operations	64		

```
78      ODS HTML CLOSE;
79
80      OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
90
```

HW5.sas x

CODE LOG RESULTS

Table of Contents

The FREQ Procedure

Issued	Year Issued			
	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1903	8	6.02	8	6.02
1949	40	30.08	48	36.09
1958	16	12.03	64	48.12
1972	8	6.02	72	54.14
1990	16	12.03	88	66.17
1993	16	12.03	104	78.20
1998	24	18.05	128	96.24
2000	1	0.75	129	96.99
2003	4	3.01	133	100.00

Crayon name	HEX triplet	Year issued
Almond	#EDECDD	1998
Antique Brass	#CD9575	1998
Apricot	#FDD9B5	1949
Aquamarine	#78DBE2	1958
Asparagus	#87A96B	1993
Atomic Tangerine	#FFA474	1972
Banana Mania	#FAE7B5	1998
Beaver	#9F8170	1998
Bittersweet	#FD7C6E	1949
Black	#000000	1903
Blizzard Blue	#ACE5EE	1972
Blue	#1F75FE	1903
Blue Bell	#A2A2D0	1998
Blue Gray	#6699CC	1958
Blue Green	#0D98BA	1949
Blue Violet	#7366BD	1949
Blush	#DE5D83	1998
Brick Red	#CB4154	1949
Brown	#B4674D	1903
Burnt Orange	#FF7F49	1958
Burnt Sienna	#E47E5D	1949

Messages: 25 User: u62223361

```
/* 25 D */
```

```
ODS RTF PATH='/home/u62223361/Intro to SAS/HW5/' BODY="crayons3.rtf";
```

```
PROC FREQ DATA = CRAYONS;
```

```
    TABLES Issued;
```

```
RUN;
```

```
PROC REPORT DATA = CRAYONS;
```

```
    COLUMN Color Hex Issued;
```

```
RUN;
```

```
ODS RTF CLOSE;
```

```

1      OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
NOTE: ODS statements in the SAS Studio environment may disable some output features.
69
70      /* 25 D */
71      ODS RTF PATH='/home/u62223361/Intro to SAS/HW5/' BODY="crayons3.rtf";
NOTE: Writing RTF Body file: crayons3.rtf
72      PROC FREQ DATA = CRAYONS;
73      TABLES Issued;
74      RUN;

NOTE: There were 133 observations read from the data set WORK.CRAYONS.
NOTE: PROCEDURE FREQ used (Total process time):
      real time          0.02 seconds
      user cpu time      0.02 seconds
      system cpu time    0.00 seconds
      memory             1909.90k
      OS Memory          24488.00k
      Timestamp          03/14/2024 10:25:16 PM
      Step Count         193   Switch Count  2
      Page Faults        0
      Page Reclaims      258
      Page Swaps         0
      Voluntary Context Switches 10
      Involuntary Context Switches 0
      Block Input Operations 0
      Block Output Operations 272

75      PROC REPORT DATA = CRAYONS;
76      COLUMN Color Hex Issued;
77      RUN;

NOTE: There were 133 observations read from the data set WORK.CRAYONS.
NOTE: PROCEDURE REPORT used (Total process time):
      real time          0.06 seconds
      user cpu time      0.06 seconds
      system cpu time    0.00 seconds
      memory             8277.75k
      OS Memory          32440.00k
      Timestamp          03/14/2024 10:25:16 PM
      Step Count         194   Switch Count  1
      Page Faults        0
      Page Reclaims      1986
      Page Swaps         0
      Voluntary Context Switches 27
      Involuntary Context Switches 1
      Block Input Operations 0
      Block Output Operations 32

78      ODS RTF CLOSE;
79
80      OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
90

```

ODS PDF CLOSE;

```

1      OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
NOTE: ODS statements in the SAS Studio environment may disable some output features.
69
70      /* 25 E */
71      ODS PDF FILE='/home/u62223361/Intro to SAS/HW5/crayons3.pdf';
NOTE: Writing ODS PDF output to DISK destination "/home/u62223361/Intro to SAS/HW5/crayons3.pdf", printer "PDF".
72      PROC FREQ DATA = CRAYONS;
73      TABLES Issued;
74      RUN;

NOTE: There were 133 observations read from the data set WORK.CRAYONS.
NOTE: PROCEDURE FREQ used (Total process time):
      real time           0.02 seconds
      user cpu time       0.02 seconds
      system cpu time     0.00 seconds
      memory              2397.00k
      OS Memory           27052.00k
      Timestamp           03/14/2024 10:26:05 PM
      Step Count          207  Switch Count  2
      Page Faults         0
      Page Reclaims       339
      Page Swaps           0
      Voluntary Context Switches 10
      Involuntary Context Switches 0
      Block Input Operations 0
      Block Output Operations 264

75      PROC REPORT DATA = CRAYONS;
76      COLUMN Color Hex Issued;
77      RUN;

NOTE: There were 133 observations read from the data set WORK.CRAYONS.
NOTE: PROCEDURE REPORT used (Total process time):
      real time           0.07 seconds
      user cpu time       0.07 seconds
      system cpu time     0.01 seconds
      memory              8072.00k
      OS Memory           34236.00k
      Timestamp           03/14/2024 10:26:05 PM
      Step Count          208  Switch Count  1
      Page Faults         0
      Page Reclaims       1828
      Page Swaps           0
      Voluntary Context Switches 26
      Involuntary Context Switches 0
      Block Input Operations 0
      Block Output Operations 48

78      ODS PDF CLOSE;
NOTE: ODS PDF printed 5 pages to /home/u62223361/Intro to SAS/HW5/crayons3.pdf.
79
80      OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
90

```

SAS Studio

odamid-usw2-2.oda.sas.com

SAS Programmer100%

Server Files and Folders

odamid01-usw2-2

Folder Shortcuts

Files (Home)

Intro to SAS

HW2

CancerRates.dat

HW2.sas

Oscars.xlsx

HW3

BenAndJerrys.csv

ben\_and\_jerrys.csv

Chapter 3 Assignment.docx

GASMLEAGE.dat

gasmileage.sas7bdat

HW3.sas

HW4

crayons.sas7bdat

HW4.sas

ttf.sas7bdat

HW5

crayons3.html

crayons3.lst

crayons3.pdf

crayons3.rtf

crayons3.sas7bdat

HW5.sas

temp

CancerRates.dat

Ch2\_codes2.sas

Tasks and Utilities

Snippets

Libraries

File Shortcuts

HWS.sas

CODELOGRESULTS

Table of Contents

The FREQ Procedure

Issued	Year Issued			
	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1993	8	6.02	8	6.02
1949	40	30.08	48	36.09
1956	16	12.03	64	48.12
1972	8	6.02	72	54.14
1990	16	12.03	88	66.17
1993	16	12.03	104	78.20
1996	24	18.05	128	96.24
2000	1	0.75	129	96.99
2003	4	3.01	133	100.00

Crayon name	HEX triplet	Year issued
Almond	#D7BDE2	1998
Antique Brass	#C08075	1958
Apricot	#FDD8B5	1949
Aquamarine	#70B2E2	1958
Asparagus	#B7A86B	1993
Atomic Tangerine	#FFA474	1972
Banana Mania	#FAE795	1998
Beverly	#FFB170	1998
Bitterweet	#FDD1DC	1949
Black	#000000	1903
Blizzard Blue	#ACEEEE	1972
Blue	#7799FF	1903
Blue Ball	#A2A2CC	1998
Blue Gray	#6699CC	1958
Blue Green	#00808A	1949
Blue Violet	#7366BD	1949
Blush	#E0C0C0	1998
Brick Red	#C84154	1949
Brown	#84414D	1903
Burnt Orange	#FF7F49	1958
Burnt Sienna	#C47A3D	1949

Messages: 28User: u6222361