**Workshop2-B**

**Book: Learning SAS by Example: A programmer's Guide**

**Section 7.10: Problems 1, 2, 3, 6, 7**

**Section 8.9: Problems 1-14**

**Question 1**

\* 7.10-1 Program to create dataset and create new variables using if-else statements.;

data School;

input Age Quiz : $1. Midterm Final;

if Age=12 then Grade = '6';

else if Age=13 then Grade = '8';

if Quiz = 'A' then Quiz\_Grade = 95;

else if Quiz = 'B' then Quiz\_Grade =85;

else if Quiz = 'C' then Quiz\_Grade =75;

else if Quiz = 'D' then Quiz\_Grade =70;

else if Quiz = 'F' then Quiz\_Grade =65;

Course\_Grade = 0.2\*Quiz\_Grade + 0.3\*Midterm + 0.5\*Final;

datalines;

12 A 92 95

12 B 88 88

13 C 78 75

13 A 92 93

12 F 55 62

13 B 88 82

;

title 'Grades of students by age :';

proc print data=school;

run;

**Question 2**

\* 7.10-2 Program to print data using OR and IN operators.;

libname pract '/home/u58712040/my\_shared\_file\_links/u56456355/BAN130';

title 'Printing values using IN';

proc print data=pract.HOSP noobs;

where Subject IN (5,100,150,200);

run;

title 'Printing values using OR';

proc print data=pract.HOSP noobs;

where Subject=5 OR Subject=100 OR

Subject=150 OR Subject=200;

run;

**Question 3**

\* 7.10-3 Program to use print data using OR and IN operators.;

libname pract '/home/u58712040/my\_shared\_file\_links/u56456355/BAN130';

data sales;

set pract.sales;

if EmpId ='9888' OR EmpID = '0177';

run;

data sales2;

set pract.sales;

if EmpId IN ('9888','0177');

run;

title 'Printing values using IN';

proc print data=sales;

run;

title 'Printing values using OR';

proc print data=sales2;

run;

**Question 4**

\* 7.10-6 Program to print data for given conditions. ;

libname pract '/home/u58712040/my\_shared\_file\_links/u56456355/BAN130';

title 'North Region - (sales < 60) and other customer';

proc print data=pract.sales;

where (region='North' AND Quantity<60) OR Customer="Pet's are Us";

run;

**Question 5**

\* 7.10-7 Program to print data for given conditions. ;

libname pract '/home/u58712040/my\_shared\_file\_links/u56456355/BAN130';

title 'Road Bikes and Hybrids for given costs :';

proc print data=pract.bicycles;

where Model = 'Road Bike' AND UnitCost > 2500 OR

Model = 'Hybrid' AND UnitCost > 660;

run;

**Question 6**

\* 8.9-1 Program to create new dataset using existing one and make new variables.;

data Vitals;

input ID : $3.

Age

Pulse

SBP

DBP;

label SBP = "Systolic Blood Pressure"

DBP = "Diastolic Blood Pressure";

datalines;

001 23 68 120 80

002 55 72 188 96

003 78 82 200 100

004 18 58 110 70

005 43 52 120 82

006 37 74 150 98

007 . 82 140 100

;

data NewVitals;

set Vitals;

if Age<50 and not missing(Age) then do;

if Pulse<70 then PulseGroup='Low';

else PulseGroup='High';

if SBP<130 then SBPGroup='Low';

else SBPGroup='High';

end;

else if Age>=50 then do;

if Pulse<74 then PulseGroup='Low';

else PulseGroup='High';

if SBP<140 then SBPGroup='Low';

else SBPGroup='High';

end;

run;

title 'New Vital criteria :';

proc print data=NewVitals label;

run;

**Question 7**

\*8.9-2 Program to create dataseta and calculate new variable.;

data MonthSales;

input month sales @@;

SumSales + sales;

format sales dollar8.2 SumSales dollar11.2;

datalines;

1 4000 2 5000 3 . 4 5500 5 5000 6 6000 7 6500 8 4500

9 5100 10 5700 11 6500 12 7500

;

title 'Sales to date';

proc print data=MonthSales;

run;

**Question 8**

\* 8.9-3 Program to add subject no. for each observation.;

/\*Modify the program below so that each observation contains a subject number (Subj), starting

with 1:

\*/

data Test;

input Score1-Score3;

Subj+1;

datalines;

90 88 92

75 76 88

88 82 91

72 68 70

;

title 'Subject Numbers';

proc print data=test noobs;

run;

**Question 9**

\* 8.9-4 Program to count missing values for variables and add cumulative number of missing values.;

libname pract '/home/u58712040/my\_shared\_file\_links/u56456355/BAN130';

data count;

set pract.missing;

if missing(A) then MissA + 1;

if missing(B) then MissB + 1;

if missing(C) then MissC + 1;

run;

title 'Number of missing values for variables are :';

proc print data=count;

run;

**Question 10**

\* 8.9-5 Program to create dataset and compute values for LogN.;

data logs;

do N=1 to 20;

LogN = log(N);

output;

end;

run;

title 'Log values for 1 to 20';

proc print data=logs;

run;

**Question 11**

\* 8.9-6 Program to create dataset and compute values for LogN for given range.;

data logs;

do N=5 to 100 by 5;

LogN = log(N);

output;

end;

run;

title 'Log values for 5 to 100';

proc print data=logs noobs;

run;

**Question 12**

\* 8.9-7 Program to use iterative do loop.;  
  
data plotit;   
 do x = 0 to 10 by .10;  
 y = 3\*x\*\*2 - 5\*x + 10;  
 output;  
 end;  
run;  
  
title "Problem 7";  
proc sgplot data=plotit;  
series x=x y=y;  
run;

**Question 13**

\* 8.9-8 Program to use an iterative do loop to plot given equation.;  
  
data Logitplot;  
 do p=0 to 1 by 0.05;  
 Logit = log(p/(1-p));  
 output;  
 end;  
run;  
  
  
title "Logit Plot";  
proc sgplot data = Logitplot;  
series x=p y=Logit;  
run;

**Question 14**

\* 8.9-9 Program to list temparatures by day.;  
  
data Temparatures;  
 do Day = 'Mon', 'Tues', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun';  
 input Temp @;  
 output;  
 end;  
datalines;  
70 72 74 76 77 78 85  
;  
title 'Temperatures by day :';  
proc print data=Temparatures;  
run;

**Question 15**

\* 8.9-10 Program to create variable using do loop.;  
  
data SpeedTest;  
 do method = 'Method\_A', 'Method\_B', 'Method\_C';  
 do SpeedResult=1 to 10;  
 input Score @;  
 output;  
 end;  
 end;  
   
datalines;  
250 255 256 300 244 268 301 322 256 333  
267 275 256 320 250 340 345 290 280 300  
350 350 340 290 377 401 380 310 299 399  
;  
  
title 'Speeds according to different methods :';  
proc print data=SpeedTest noobs;  
var SpeedResult method Score;  
run;

**Question 16**

\* 8.9\_11 Program to create dataset according to given conditions using do loop.;  
  
data Temperature;  
 length City $ 7;  
 do City = 'Dallas','Houston';  
 do Hour = 1 to 24;  
 input Temp @;  
 output;  
 end;  
 end;  
datalines;  
80 81 82 83 84 84 87 88 89 89  
91 93 93 95 96 97 99 95 92 90 88  
86 84 80 78 76 77 78  
80 81 82 82 86  
88 90 92 92 93 96 94 92 90  
88 84 82 78 76 74   
;  
title "Temperatures in Dallas and Houston :";  
proc print data=Temperature;  
run;

**Question 17**

\* 8.9-12 Program to calculate interest using brute force methods.;

data years;

retain year 0;

retain total 0;

deposit = 1000;

interest = 0.0425;

do until (total > 30000);

total = (deposit+total)\*(1+interest);

year = year + 1;

output;

end;

format total dollar10.2 deposit dollar8.2;

run;

title 'Years to reach 30,000';

proc print data=years noobs;

var deposit interest total year;

run;

**Question 18**

\* 8.9-13 Program to calculate years using brute force methods. ;

data years1;

do Year = 1 to 999 until (Amount>30000);

Amount + 1000;

do Quarter = 1 to 4;

Amount + Amount\*(0.0425/4);

output;

end;

end;

format Amount dollar10.;

run;

title "Years to reach 30,000 if interest compounded quarterly.";

proc print data=years1;

var Quarter Amount Year;

run;

**Question 19**

\* 8.9-14 Program to generate table of intergers for given conditions.;

data integers;

do integer=1 to 100 until (Square\_value>100);

Square\_value = integer \* integer;

output;

end;

run;

title 'Table of Integers & their squares';

proc print data=integers noobs;

run;