

```
libname mylib "~/BAN110ZBB";
```

```
/*Question1*/
```

```
proc import datafile="/home/u63417899/BAN110ZBB/customer_banking_info_promo.xlsx"  
  out=mylib.customer_banking_info_promo  
  dbms=xlsx  
  replace;  
  getnames=YES;  
run;
```

```
proc print data=mylib.customer_banking_info_promo(obs=5);  
run;
```

```
/*Question2*/
```

```
proc contents data=mylib.customer_banking_info_promo;  
run;
```

```
/*Question3*/
```

```
data mylib.customer_banking_info_promo;  
  set mylib.customer_banking_info_promo(rename=(customer_id2=customer_id));  
  drop duration;  
run;
```

```
proc print data=mylib.customer_banking_info_promo(obs=5);  
run;
```

```
/*Question4*/;
```

```
proc import out=mylib.customer_banking_info  
  datafile="/~/BAN110ZBB/customer_banking_info.csv"  
  dbms=csv  
  replace;  
  getnames=YES;  
run;
```

```
proc print data=mylib.customer_banking_info(obs=5);  
run;
```

```
/*Question 5*/
```

```
proc contents data=mylib.customer_banking_info;  
run;
```

```
data customer_banking_info;  
set mylib.customer_banking_info;  
rename customer_id1 = customer_id;  
run;
```

```
proc print data=mylib.customer_banking_info(obs=5);
run;

/*Question6*/
data customer_demographics;
set "/home/u63417899/BAN110ZBB/customer_demographic.sas7bdat";
run;

proc print data=customer_demographics(obs=5);
run;

/*Question7*/
data mylib.customer_banking_info_promocv;
  set mylib.customer_banking_info_promo;
  customer_id_num = input(customer_id, 8.);
  drop customer_id;
  rename customer_id_num = customer_id;
run;

proc contents data=mylib.customer_banking_info_promocv;
run;

proc means data=mylib.customer_banking_info_promocv nolabels;
run;

/*Question8*/
proc sort data=mylib.customer_banking_info_promocv;

  by customer_id;
run;

proc sort data=mylib.customer_banking_info;
  by customer_id;
run;

proc sort data=mylib.customer_demographics;
  by customer_id;
run;

data mylib.customer_all;
  merge mylib.customer_banking_info_promo(in=mycv)
        mylib.customer_banking_info(in=mybi)
        mylib.customer_demographics(in=myd);
  by customer_id;
  if mycv and mybi and myd;
run;

proc print data=mylib.customer_all(obs=5);
run;
```


Obs	customer_id2	contact	day	month	duration	campaign	pdays	previous	poutcome	y
1	122482	cellular	22	aug	229	2	-1	0	unknown	no
2	119725	cellular	7	aug	125	2	-1	0	unknown	no
3	103490	unknown	15	may	68	2	-1	0	unknown	no
4	126218	cellular	19	nov	517	2	187	3	failure	no
5	104835	unknown	20	may	165	2	-1	0	unknown	no

The CONTENTS Procedure

Data Set Name	MYLIB.CUSTOMER_BANKING_INFO_PROMO	Observations	10578
Member Type	DATA	Variables	10
Engine	V9	Indexes	0
Created	05/30/2023 22:53:31	Observation Length	72
Last Modified	05/30/2023 22:53:31	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	SOLARIS_X86_64, LINUX_X86_64, ALPHA_TRU64, LINUX_IA64		
Encoding	utf-8 Unicode (UTF-8)		

Engine/Host Dependent Information	
Data Set Page Size	131072
Number of Data Set Pages	6
First Data Page	1
Max Obs per Page	1816
Obs in First Data Page	1773
Number of Data Set Repairs	0
Filename	/home/u63417899/BAN110ZBB/customer_banking_info_promo.sas7bdat
Release Created	9.0401M7
Host Created	Linux
Inode Number	5644147
Access Permission	rw-r--r--
Owner Name	u63417899
File Size	896KB
File Size (bytes)	917504

Alphabetic List of Variables and Attributes						
#	Variable	Type	Len	Format	Informat	Label
6	campaign	Num	8	BEST.		campaign
2	contact	Char	9	\$9.	\$9.	contact
1	customer_id2	Char	6	\$6.	\$6.	customer_id2
3	day	Num	8	BEST.		day
5	duration	Num	8	BEST.		duration
4	month	Char	3	\$3.	\$3.	month
7	pdays	Num	8	BEST.		pdays
9	poutcome	Char	7	\$7.	\$7.	poutcome
8	previous	Num	8	BEST.		previous

Alphabetic List of Variables and Attributes						
#	Variable	Type	Len	Format	Informat	Label
10	y	Char	3	\$3.	\$3.	y

Obs	customer_id	contact	day	month	campaign	pdays	previous	poutcome	y
1	122482	cellular	22	aug	2	-1	0	unknown	no
2	119725	cellular	7	aug	2	-1	0	unknown	no
3	103490	unknown	15	may	2	-1	0	unknown	no
4	126218	cellular	19	nov	2	187	3	failure	no
5	104835	unknown	20	may	2	-1	0	unknown	no

Obs	customer_id1	default	balance	housing	loan
1	122482	no	347	no	no
2	119725	no	3462	no	no
3	103490	no	157	yes	no
4	126218	no	3689	yes	no
5	104835	no	0	yes	yes

The CONTENTS Procedure

Data Set Name	MYLIB.CUSTOMER_BANKING_INFO	Observations	10578
Member Type	DATA	Variables	5
Engine	V9	Indexes	0
Created	05/30/2023 22:53:32	Observation Length	32
Last Modified	05/30/2023 22:53:32	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	SOLARIS_X86_64, LINUX_X86_64, ALPHA_TRU64, LINUX_IA64		
Encoding	utf-8 Unicode (UTF-8)		

Engine/Host Dependent Information	
Data Set Page Size	131072
Number of Data Set Pages	3
First Data Page	1
Max Obs per Page	4078
Obs in First Data Page	4002
Number of Data Set Repairs	0
Filename	/home/u63417899/BAN110ZBB/customer_banking_info.sas7bdat
Release Created	9.0401M7
Host Created	Linux
Inode Number	23394465
Access Permission	rw-r--r--
Owner Name	u63417899
File Size	512KB

Engine/Host Dependent Information	
File Size (bytes)	524288

Alphabetic List of Variables and Attributes					
#	Variable	Type	Len	Format	Informat
3	balance	Num	8	BEST12.	BEST32.
1	customer_id1	Num	8	BEST12.	BEST32.
2	default	Char	3	\$3.	\$3.
4	housing	Char	3	\$3.	\$3.
5	loan	Char	3	\$3.	\$3.

Obs	customer_id1	default	balance	housing	loan
1	122482	no	347	no	no
2	119725	no	3462	no	no
3	103490	no	157	yes	no
4	126218	no	3689	yes	no
5	104835	no	0	yes	yes

The CONTENTS Procedure

Data Set Name	MYLIB.CUSTOMER_BANKING_INFO_PROMOCV	Observations	10578
Member Type	DATA	Variables	9
Engine	V9	Indexes	0
Created	05/30/2023 22:53:32	Observation Length	64
Last Modified	05/30/2023 22:53:32	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	SOLARIS_X86_64, LINUX_X86_64, ALPHA_TRU64, LINUX_IA64		
Encoding	utf-8 Unicode (UTF-8)		

Engine/Host Dependent Information	
Data Set Page Size	131072
Number of Data Set Pages	6
First Data Page	1
Max Obs per Page	2043
Obs in First Data Page	1996
Number of Data Set Repairs	0
Filename	/home/u63417899/BAN110ZBB/customer_banking_info_promocv.sas7bdat
Release Created	9.0401M7
Host Created	Linux
Inode Number	23403104
Access Permission	rw-r--r--
Owner Name	u63417899
File Size	896KB
File Size (bytes)	917504

Alphabetic List of Variables and Attributes						
#	Variable	Type	Len	Format	Informat	Label
4	campaign	Num	8	BEST.		campaign
1	contact	Char	9	\$9.	\$9.	contact
9	customer_id	Num	8			
2	day	Num	8	BEST.		day
3	month	Char	3	\$3.	\$3.	month
5	pdays	Num	8	BEST.		pdays
7	poutcome	Char	7	\$7.	\$7.	poutcome
6	previous	Num	8	BEST.		previous
8	y	Char	3	\$3.	\$3.	y

The MEANS Procedure

Variable	N	Mean	Std Dev	Minimum	Maximum
day	10578	15.4758934	8.4137946	1.0000000	31.0000000
campaign	10578	2.4747589	2.6151781	1.0000000	50.0000000
pdays	10578	51.9548119	109.3471124	-1.0000000	854.0000000
previous	10578	0.8525241	3.4721156	0	275.0000000
customer_id	10578	127278.17	13660.22	100103.00	145309.00