Handbook of SAS®
Data Step Programming

Execution Phase of Program 5.10

Arthur Li

Execution Phase of Program 5.10

	ID	SBP
1	01	145
2	02	119
3	03	126
4	04	106
5	05	151
6	06	112
7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

ERROR is not shown for simplicity

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		0		9				.	

At the beginning of the execution phase:

- _N_ ← 1
- _N_ will be 1 throughout the execution phase because SAS didn't read the input data sequentially

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```
data ex5_10;
    do choose = 1 to total by 3;
       set sbp point=choose nobs=total;
       output;
    end;
    stop;
run;
```

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		0		9				.	

At the beginning of the execution phase:

- CHOOSE ← 0
- TOTAL ← 9, based on the descriptor portion of Sbp
- The rest of variables ← *missing*

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8	08	119
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```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		1		9				.	

1st iteration of the DO loop:

- CHOOSE ← 1

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```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		1		9		01		145	

1st iteration of the DO loop:

- SAS reads the 1st observation via direct-access mode

Execution Phase of Program 5.10

	ID	SBP
1	01	145
2	02	119
3	03	126
4	04	106
5	05	151
6	06	112
7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

Ex5_10:

	ID	SBP
1	01	145

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		1		9		01		145	

1st iteration of the DO loop:

- The OUTPUT statement instructs SAS to write the contents from PDV to Ex5_10

Execution Phase of Program 5.10

	ID	SBP
1	01	145
2	02	119
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4	04	106
5	05	151
6	06	112
7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

Ex5_10:

	ID	SBP
1	01	145

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		1		9		01		145	

1st iteration of the DO loop:

- SAS reaches the end of 1st iteration

Execution Phase of Program 5.10

	ID	SBP
1	01	145
2	02	119
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6	06	112
7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

Ex5_10:

	ID	SBP
1	01	145

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		4		9		01		145	

2nd iteration of the DO loop:

- CHOOSE ↑4
- Since 4 ≤ TOTAL (9), the 2nd iteration continues

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	ID	SBP
1	01	145
2	02	119
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6	06	112
7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

Ex5_10:

	ID	SBP
1	01	145

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		4		9		04		106	

2nd iteration of the DO loop:

- SAS reads the 4th observation via direct-access mode

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	ID	SBP
1	01	145
2	02	119
3	03	126
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5	05	151
6	06	112
7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

Ex5_10:

	ID	SBP
1	01	145
2	04	106

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		4		9		04		106	

2nd iteration of the DO loop:

- The OUTPUT statement instructs SAS to write the contents from PDV to Ex5_10

Execution Phase of Program 5.10

	ID	SBP
1	01	145
2	02	119
3	03	126
4	04	106
5	05	151
6	06	112
7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

Ex5_10:

	ID	SBP
1	01	145
2	04	106

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		4		9		04		106	

2nd iteration of the DO loop:

- SAS reaches the end of 2nd iteration

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	ID	SBP
1	01	145
2	02	119
3	03	126
4	04	106
5	05	151
6	06	112
7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

Ex5_10:

	ID	SBP
1	01	145
2	04	106

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		7		9		04		106	

3rd iteration of the DO loop:

- CHOOSE ↑7
- Since 7 ≤ TOTAL (9), the 3rd iteration continues

Execution Phase of Program 5.10

	ID	SBP
1	01	145
2	02	119
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7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

Ex5_10:

	ID	SBP
1	01	145
2	04	106

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		7		9		07		127	

3rd iteration of the DO loop:

- SAS reads the 7th observation via direct-access mode

Execution Phase of Program 5.10

	ID	SBP
1	01	145
2	02	119
3	03	126
4	04	106
5	05	151
6	06	112
7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

Ex5_10:

	ID	SBP
1	01	145
2	04	106
3	07	127

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		7		9		07		127	

3rd iteration of the DO loop:

- The OUTPUT statement instructs SAS to write the contents from PDV to Ex5_10

Execution Phase of Program 5.10

	ID	SBP
1	01	145
2	02	119
3	03	126
4	04	106
5	05	151
6	06	112
7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

Ex5_10:

	ID	SBP
1	01	145
2	04	106
3	07	127

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		7		9		07		127	

3rd iteration of the DO loop:

- SAS reaches the end of 3rd iteration

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	ID	SBP
1	01	145
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3	03	126
4	04	106
5	05	151
6	06	112
7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

Ex5_10:

	ID	SBP
1	01	145
2	04	106
3	07	127

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		10		9		07		127	

4th iteration of the DO loop:

- CHOOSE ↑10
- Since 10 > TOTAL (9), the loop ends

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	ID	SBP
1	01	145
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6	06	112
7	07	127
8	08	119
9	09	113

```
data ex5_10;
   do choose = 1 to total by 3;
      set sbp point=choose nobs=total;
      output;
   end;
   stop;
run;
```

Ex5_10:

	ID	SBP
1	01	145
2	04	106
3	07	127

PDV:

_N_	D	CHOOSE	D	TOTAL	D	ID	K	SBP	K
1		10		9		07		127	

- The STOP statement stops the DATA step processing