

MET MA 603:
Assignment Project Exam Help
SAS Programming and
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Entering Data Directly

Entering Data Directly

Entering data directly is to manually type in or copy/paste each variable name and observation.

This is often the fastest and easiest method when the amount of data that needs to be entered is small. However, it isn't practical for larger datasets.

Use this method for small datasets, such as for examples and testing.

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There are three ways of entering data directly:

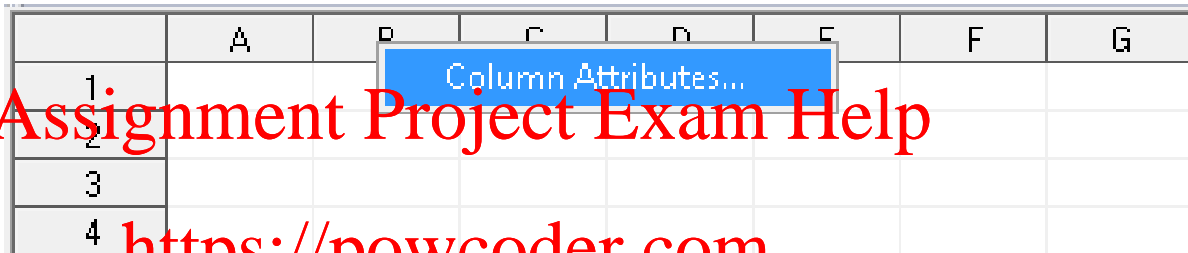
- Viewtable Data Entry

- Data Step Statements

- Datalines / Cards Statement

Viewtable Data Entry

To enter data with the **Viewtable** method, first open the Viewtable window via Tool > Table Editor. This will open an empty table.



	A	B	C	D	E	F	G
1							
2							
3							
4							

Right-click the column headers and choose Column Attributes. Change the name of the variable and specify the data type and format.

Enter data into the empty cells.

Click File > Save As to save the table. Choose a name for the dataset and specify the library.

Data Step Statements

The Data step studied in previous lessons is also an example of direct data entry. A statement introduces each variable in the dataset and inputs the value of one observation.

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```
data distance;
```

```
Miles = 26.23;
```

```
Kilometers = 1.61 * Miles;
```

```
run;
```

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This method is restricted (thus far) to only having one observation for each variable, making it useful only in certain situations. Later in the course, Data Steps will usually involve creating and working with datasets where there are more than one observation.

Datalines / Cards Statement

This method expands on the previous one, allowing for multiple observations to be entered for each variable.

The Input statement tells SAS the names and data types of each variable in the dataset. The dollar sign (\$) is used to assign the Character data type to a variable. If the dollar sign is left out the data type for the variable will be Numeric.

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The Datalines statement tells SAS that data will be entered, and the semicolon indicates the end of the entered data. All lines in between are written into the dataset.

The keyword Cards has the same function as Datalines. Using either one will produce the same result.

Example of Datalines / Cards

```
data city_populations;  
input City $ State $ Population;  
Datalines;  
Boston MA 610000  
Chicago IL 2410000  
Seattle WA 415000  
;  
run;
```

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The basic version of this method uses new lines to separate observations and a delimiter to separate variables. The default delimiter is a single space.

Note that the semicolon after the data must be on a new line, and the Datalines or Cards statement must be the last statement in the Data Step (with the exception of “Run”)

Limitations of Datalines / Cards

The basic version of the Datalines / Cards method has some limitations. The default length of data is restricted to 8, and data cannot contain embedded spaces.

```
data city_population;
input City $ State $ Population;
Datalines;
Boston MA 610000
Chicago IL 2410000
Seattle WA 415000
New York NY 8550405
Philadelphia PA 1567442
;
run;
```

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Modifications to Datalines / Cards

The default length for new variables is 8. The **Length** statement is used to specify different lengths. The Length statement must precede the Input statement so that the size isn't already set before the Length statements is read. Use the ampersand (&) to tell SAS the data has embedded spaces. Use 2 or more spaces to indicate the next item.

```
data city_populations;  
length City $12 State $2;  
input City & State Population;  
Datalines;
```

```
Boston MA 610000  
Chicago IL 2410000  
Seattle WA 415000  
New York NY 8550405  
Philadelphia PA 1567442  
;  
run;
```


Datalines / Cards for Fixed-Width Data

By default, variables are read assuming there is a delimiter. To read in fixed-width structured data, the columns of each variable must be specified.

Unless otherwise specified, the lengths of the variables are determined by the difference between the starting and ending point of the columns containing the data.

```
data city_populations;  
input City $1-12 State $14-15 Population 18-24;  
Datalines;  
Boston MA 0610000  
Chicago IL 2410000  
Seattle WA 0415000  
New York NY 8550405  
Philadelphia PA 1567442  
;  
run;
```

Practice

Copy the data below into SAS and use the Datalines method to create a SAS dataset.

Country Capital

Argentina Buenos Aires

Bolivia Sucre

Brazil Brasilia

Chile Santiago

Colombia Bogotá

Ecuador Quito

Guyana Georgetown

Paraguay Asunción

Peru Lima

Suriname Paramaribo

Uruguay Montevideo

Venezuela Caracas

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Practice

Copy the data below into SAS and use the Datalines method to create a SAS dataset.

<u>Country</u>	<u>Capital</u>
----------------	----------------

Argentina	Buenos Aires
-----------	--------------

Bolivia	Sucre
---------	-------

Brazil	Brasília
--------	----------

Chile	Santiago
-------	----------

Colombia	Bogotá
----------	--------

Ecuador	Quito
---------	-------

Guyana	Georgetown
--------	------------

Paraguay	Asunción
----------	----------

Peru	Lima
------	------

Suriname	Paramaribo
----------	------------

Uruguay	Montevideo
---------	------------

Venezuela	Caracas
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Readings

- Textbook sections 2.1, 2.2, 2.4
- “Representing Tabular Data”
- <http://support.sagepub.com/documentation/collections/basesess/58133/HTML/default/viewer.htm#a001360509.htm>

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