Data Entry for the Chi-Square Test of Independence

The data entry for a chi-square test of independence will require the same number of columns as characteristics being measured in the study. For example, a study that was interested in determining if there was an association between academic classification (freshman, soph, etc.) and location of residence (home, on-campus, off-campus) would require two columns in the SPSS Data Editor since the researcher measured two (2) characteristics: academic classification and location of residence. The data for this study might be presented as follows:

<table>
<thead>
<tr>
<th>Academic Classification</th>
<th>Location of Residence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Home</td>
</tr>
<tr>
<td>Freshman</td>
<td>14</td>
</tr>
<tr>
<td>Sophomore</td>
<td>8</td>
</tr>
<tr>
<td>Junior</td>
<td>15</td>
</tr>
<tr>
<td>Senior</td>
<td>16</td>
</tr>
</tbody>
</table>

When entering the data into the SPSS Data Editor, the columns will contain the information on the Academic Classification and Location of Residence while the rows will represent the individual subjects. It is important to remember that before entering the data into the SPSS Data Editor, you should assign numerical values to the classification levels and locations (e.g., Freshman = 1, Sophomore = 2, etc. and Home = 1, On-campus = 2, etc.). The following illustration is used to further explain the organization of the data.
The data in the above illustration states that subject number 1 (row 1) belonged to class 1 (Freshman) and location 1 (at home). Likewise, the data states that subject 2 (row 2) was a sophomore who lived on-campus.

When the data is presented in a tabular form like above and in the exercises, you can think of each cell in the table as a combination of the characteristics being measured (e.g., there are 14 subjects who belong to the freshman living at home combination.). Therefore, when you enter the data into the SPSS Data Editor, you must enter the freshman living at home combination (class = 1, reside = 1) in 14 rows. After you have entered the first cell, you must continue entering the combinations in the remaining cells (16 rows of freshman/on-campus [class = 1, reside = 2], etc.). The data entry for after the first cell and part of the second would look similar to the following:

<table>
<thead>
<tr>
<th></th>
<th>class</th>
<th>reside</th>
<th>var</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.00</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1.00</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3.00</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>4.00</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>3.00</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>2.00</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>1.00</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>2.00</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The illustration shows the data for the first cell and the beginning of the data entry for the second cell (freshman/on-campus). The data entry would continue by entering the corresponding number of combinations. For the above example, the data entry would require a total of 160 rows (the sum of all the cells corresponds to the total number of subjects and each subject is represented as a row in the SPSS Data Editor).

After the data has been entered, you should select Analyze --> Descriptives --> Crosstabs to conduct a Chi-square Test of Independence.
In the Crosstabs dialog box, you should select one variable to represent the rows of the resulting table and a second variable to represent the columns of the table.

In order to obtain the Chi-square Test of Independence, you must select Statistics and then check the box in front of Chi Square.
Additional information such as the Expected Frequencies and cell percentages can be obtained by selecting Cells in the Crosstabs dialog box and then checking the desired cell information.