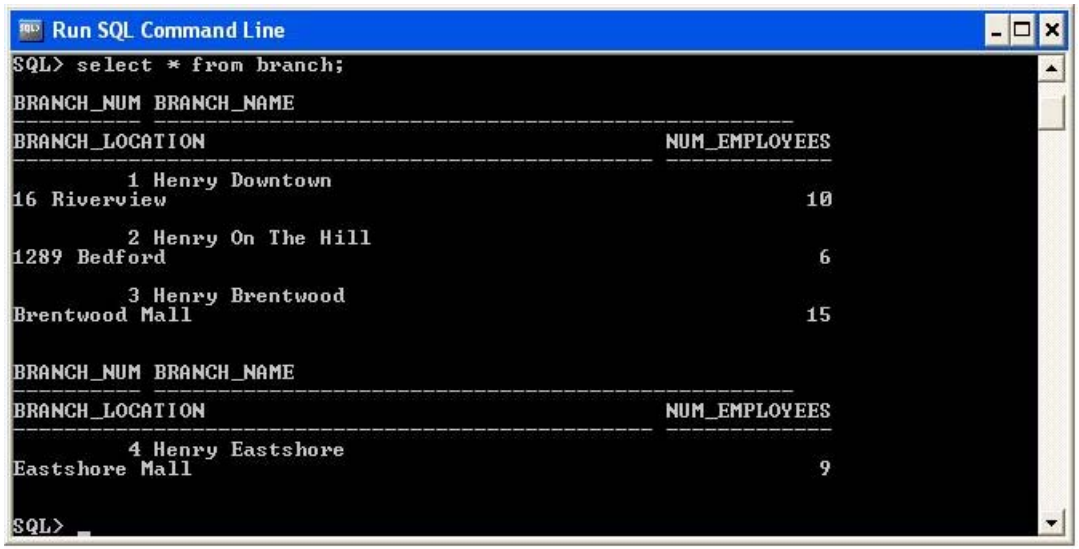
Formatting SQL*Plus Queries

SQL*Plus has a number of tools for formatting queries. You should use these tools to format the output you create for your homework.

The following is the initial output from a SQL*Plus query of a table with multiple columns:



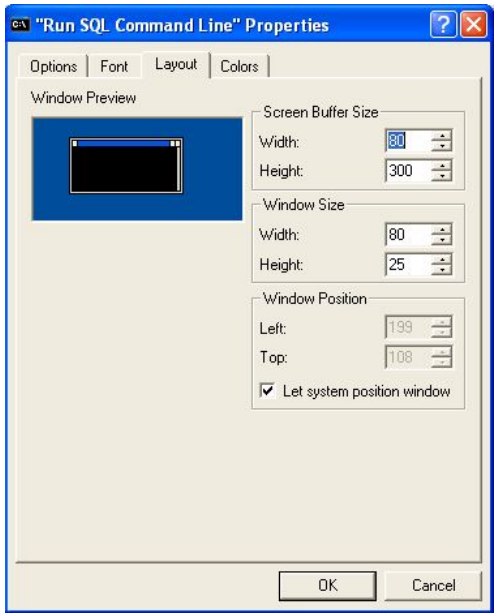
Note that each row wraps to multiple lines. There is also extra "wasted" space that makes the output difficult to read.

The following are some hints you can use to better control/format the output.

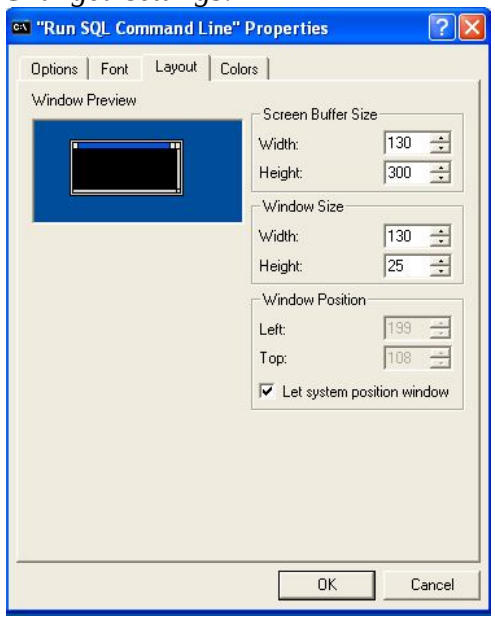
1. You can increase the size of the application window (this is a MS Windows function) by increasing the size and available buffer for the program:
   - Click on the menu icon in the top left side of the program window or right-click on the blue title bar on top of the window.
   - Choose “Properties”

Once in the “Properties” menu, go to the “Layout” tab and increase the “Width” settings. Type 130 in the Width setting for both the “Screen Buffer Size” as well as the “Window Size” as seen below:

Initial settings:



Changed settings:

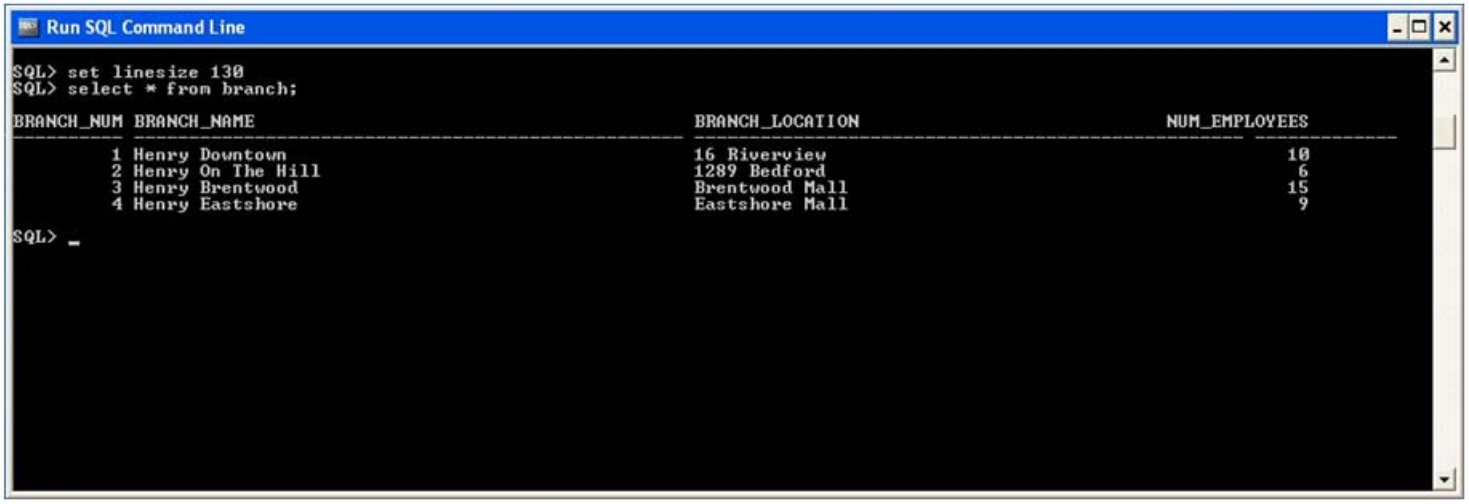


2. The reshaped window will look different, however, the SQL*Plus will still continue to wrap the results of the query as seen here:

3. Next, find the current SQL*Plus settings for “Linesize” and “Pagesize”.

   You can retrieve these settings with **`SHOW LINESIZE`** and **`SHOW PAGESIZE`** commands.
   These commands will reveal that each line is set to 80 characters long and each page is set to include only 14 rows of output (before repeating the table header).

   Changing the *Linesize* setting increases the number of characters that SQL*Plus will fit on each line before wrapping the line.



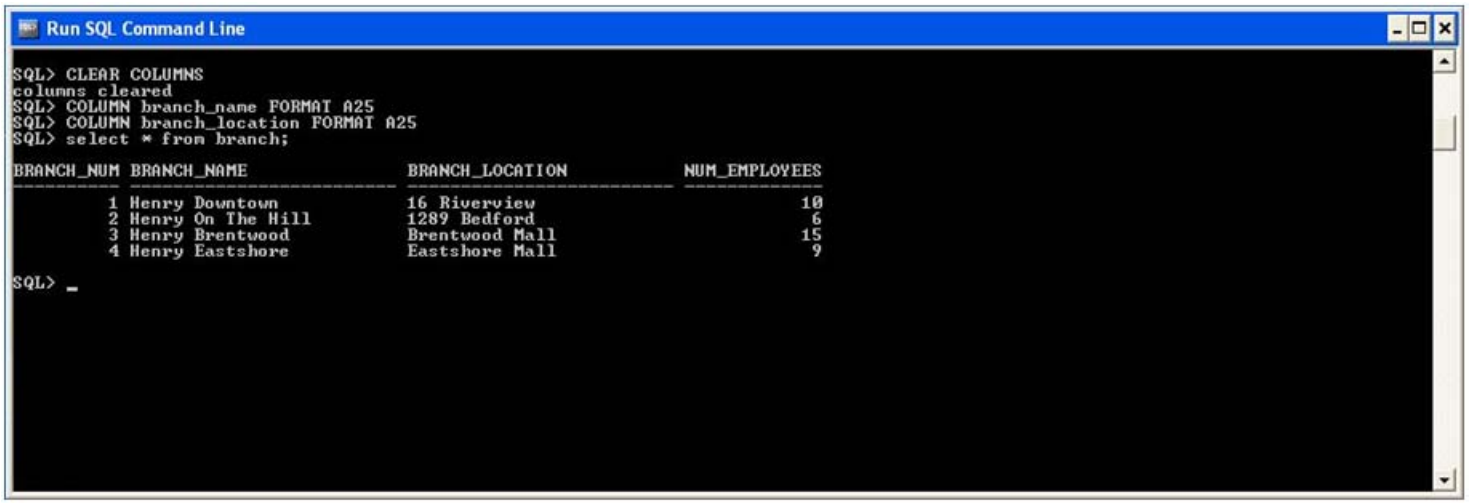
Note that, although each row is on a single line, there is still a lot of empty space causing each line of output to be very wide.

4. The SQL*Plus "COLUMN" command enables you to define the width of any column. The syntax for the command is:

```
COLUMN [column_name] FORMAT [format value]
```

For text or date columns the format value to be used is **A**[number]. The **A** indicates that the values are strings and the number specifies the width of the column. For number fields, the format value can be made using the number formatting table in the Selected Single-Row Functions lecture notes.

In this example we define the width for the BRANCH_NAME and BRANCH_LOCATION columns:



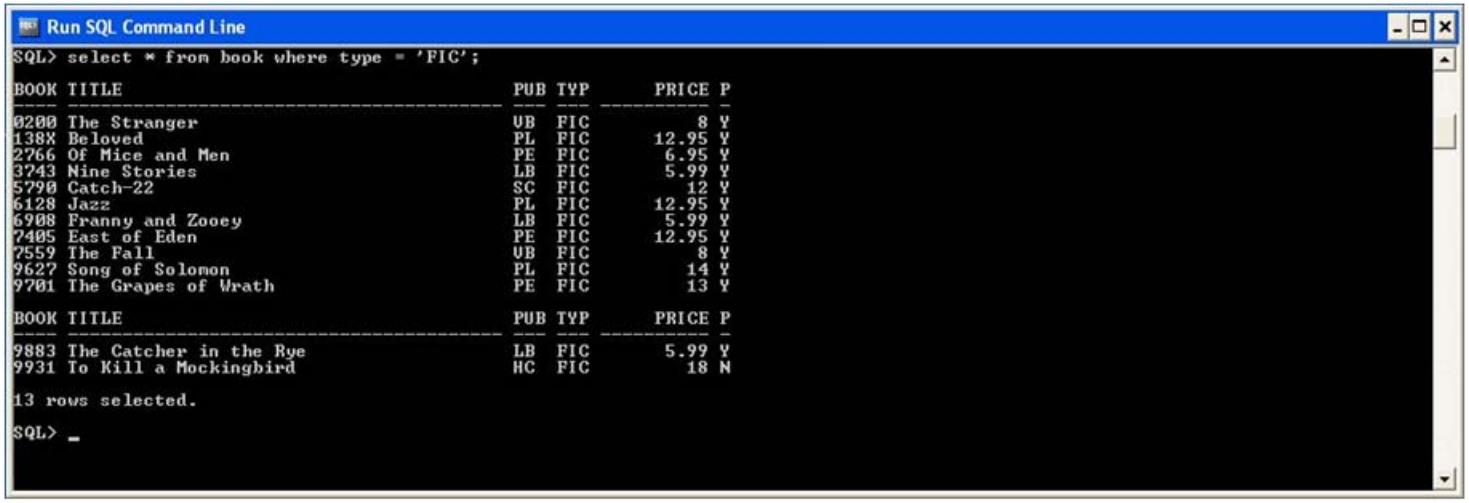
Now the table is not as wide as before. The formatting made it more readable. Before applying COLUMN commands, be sure to run the command "CLEAR COLUMNS" to ensure that all previous COLUMN settings are cleared.

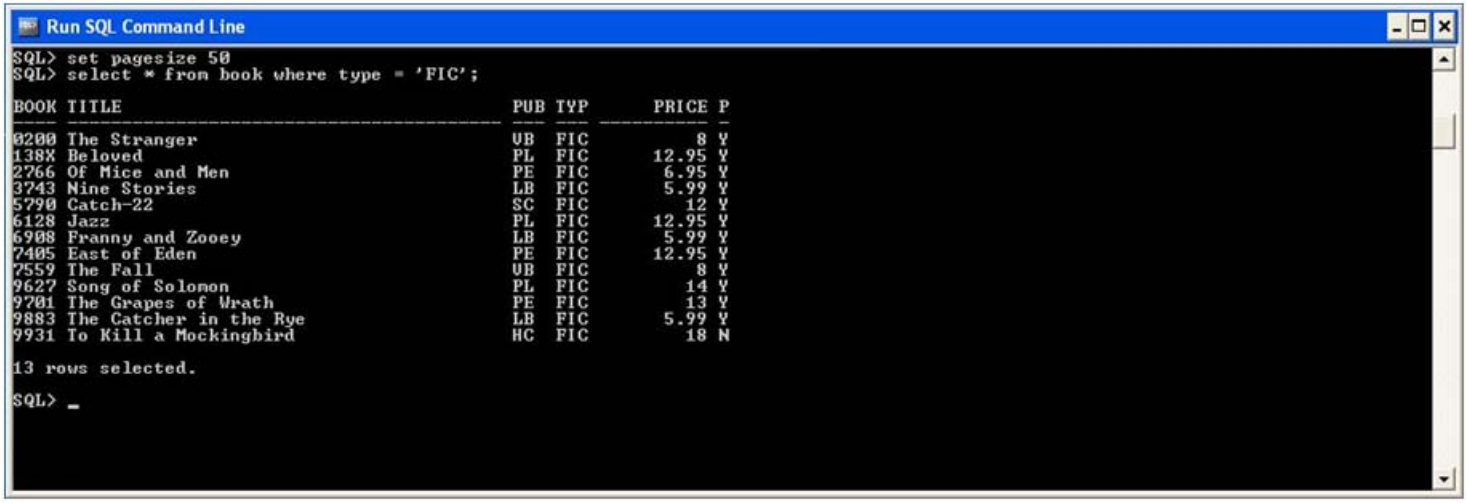
If you give an alias to a column, the alias becomes the column name (the header for the column in a table that represents output for a query)

Here are few more examples:

`COLUMN Employee FORMAT A30`	(The column **Employee** will be 30 characters wide)
`COLUMN Grade FORMAT A5`	(The column **Grade** will be 5 characters long)
`COLUMN Cost FORMAT $9,999.99`	(The column **Cost** will have a dollar sign, a comma after the thousands, and will show the first two decimal places)

5. Finally, the "Pagesize" setting determines after how many lines SQL*Plus will repeat the table header (headers for the columns). In the example below, you can see that, using the default *Pagesize*, the headers were repeated after every 14 rows. Prior to the second SELECT statement, the *Pagesize* was increased to 50 and the output shows the column headers only once as the output is within 50 lines in this case.





6. After you formatted the output of a query to look readable and understandable, you can copy the text from the SQL*Plus command line window into a MS Word document. It is not acceptable to include screenshots of the SQL*Plus command line in your assignment. You must copy the actual text into your MS Word document (do not copy a "print screen" of your results). You could also use a SPOOL command to capture the session and open the text file (the one you indicated in the SPOOL command) in your MS Word document. Within Word you can format your document using the following:

   a. Choose fonts that preserve spacing of individual characters (e.g., **CONSOLAS** or **COURIER NEW** fonts),

   b. If lines of your statements (or results) are wrapped, you can lower the font size (e.g., to 9 points),

   c. In "Page Layout" tab, change orientation from portrait to landscape and margins to smaller size (if it helps), and

   d. Change the "spacing" set up (before, after, and line spacing) to eliminate any extra space between lines.

7. A good example of a query submission:

Question #1

```
SQL> SELECT b.isbn || ':  ' || title AS book, name AS "Publisher's Name",
  2         a.authorid || ':  ' || lname || ', ' || fname AS "Author's Name"
  3  FROM   books b  JOIN bookauthor ba ON ba.isbn = b.isbn
  4                  JOIN author     a  ON ba.authorID = a.authorID
  5                  JOIN publisher  p  ON b.pubID = p.pubID
  6  WHERE  category = 'COMPUTER'
  7    AND  pubdate > '01-JAN-2005'
  8  ORDER BY title;

BOOK                                       Publisher's Name        Author's Name
------------------------------------------ ----------------------- ----------------------------
9959789321:  E-BUSINESS THE EASY WAY       PUBLISH OUR WAY         J100:  JONES, JANICE
1915762492:  HANDCRANKED COMPUTERS         AMERICAN PUBLISHING     W100:  WHITE, WILLIAM
1915762492:  HANDCRANKED COMPUTERS         AMERICAN PUBLISHING     W105:  WHITE, LISA
3957136468:  HOLY GRAIL OF ORACLE          AMERICAN PUBLISHING     A100:  AUSTIN, JAMES
```

8. The same query that is poorly formatted:

```
SQL> select books.isbn || ':  ' || title, name, author.authorid || ':  ' || lname || ', ' || fname from
  2  books join bookauthor on bookauthor.isbn = books.isbn join author author on bookauthor.authorid =
author.authorid join publisher on books.pubid = publisher.pubid
  3  where category = 'COMPUTER' and pubdate > '01-JAN-2005' order by title;

BOOKS.ISBN||':'||TITLE                       NAME
-------------------------------------------- ----------------------
AUTHOR.AUTHORID||':'||LNAME||
-----------------------------
9959789321:  E-BUSINESS THE EASY WAY         PUBLISH OUR WAY
J100:  JONES, JANICE

1915762492:  HANDCRANKED COMPUTERS           AMERICAN PUBLISHING
W100:  WHITE, WILLIAM

1915762492:  HANDCRANKED COMPUTERS           AMERICAN PUBLISHING
W105:  WHITE, LISA


BOOKS.ISBN||':'||TITLE                       NAME
-------------------------------------------- ----------------------
AUTHOR.AUTHORID||':'||LNAME||
-----------------------------
3957136468:  HOLY GRAIL OF ORACLE            AMERICAN PUBLISHING
A100:  AUSTIN, JAMES
```

In this query we did not set the linesize and pagesize properly. As a result the output has wrapping lines and header show more than one time. Further, the query itself could be improved by using aliases for columns (generating headers for the output) and tables (help simplifying the query), starting each clause on a new line, and using more than one line for a clause when useful.