

Setting Security in Microsoft Excel 2003

Introduction

Excel worksheets are often used as forms or templates for users to type in their own information and upon which set calculations are then carried out. In such cases, it is important that the user can change only cells where data is to be entered. Excel may also be used for storing data and again it is important to protect this from accidental deletion or amendment.

Before you begin exploring how to protect your data, set up this simple worksheet:

1. Start up Excel (or click on **[New]**) to get a new workbook
2. In cell *A1*, type the instruction: `Type your data into cells A3 to A12`
3. Type some numeric data into column *A* - eg start with `1` in *A3*, press **<Enter>** then type `2` into *A4*; continue until you have `10` in *A12* (use *autofill* if you like)
4. Into cell *B3* type the formula `=A3*A3` then double click on the small black *cell handle* to copy the formula down the column to *B12*
5. Click on cell *B13* then on the **[AutoSum]** button - press **<Enter>** to accept `=SUM(B3:B12)`
6. Into cell *A14* type `sum of squares:` - press **<right arrow>** three times
7. Into cell *D14* type the formula `=B13` - press **<Enter>**

Hiding Columns, Rows and Sheets

A very simple way of protecting calculations is to hide them from view:

1. Click on any cell in column *B*
2. Open the **Format** menu, choose **Column** then **Hide**
3. Change one of the data values in column *A* - the sum of squares is recalculated

Column *B* has now disappeared and, unless the column is unhidden, exactly what is going on is not immediately obvious. To reshew the column:

4. Click on any row number down the left side of the sheet to select a single row
5. Open the **Format** menu, choose **Column** then **Unhide**

This method makes sure all the columns are shown. If you only want to unhide a single column then you can drag through cells in the columns to the left and right - here, for example, you would have to select cells in column A and C (in any row).

You can hide/unhide rows in exactly the same way except you choose **Row** and **Hide** or **Unhide** from the **Format** menu.

Hiding Worksheets

Though most people show data, calculations and results on the same worksheet, it is better practice to separate these out onto different sheets:

1. Click on the *Sheet2* tab and in cell *A1* type =
2. Now click on the *Sheet1* tab and then on cell *A3*
3. Type an * then click on cell *A3* (on *Sheet1*) a second time
4. Press **<Enter>** to complete the formula (which should read **=Sheet1!A3*Sheet1!A3**)
5. Click on cell *A1* on *Sheet2* then drag the cell handle to copy the formula down to *A10*
6. Click on *A11* then click on the **[AutoSum]** button
7. Press **<Enter>** to accept the formula **=SUM(A1:A10)**
8. Click on the *Sheet1* tab then on cell *D14* and type =
9. Click on the *Sheet2* tab and then on cell *A11*
10. Press **<Enter>** to complete the formula (which should read **=Sheet2!A11**)
11. Click on the **B** heading of column *B* to select it then open the **Edit** menu and choose **Delete**
12. Click on the *Sheet2* tab, open the **Format** menu, choose **Sheet...** then **Hide**
13. Click on the *Sheet1* tab to view your data and results - the calculations are all hidden
14. Finally, change a data value in cells *A3* to *A12* - the sum in cell *C14* is recalculated

Protecting Sheets and Locking Cells

Though the calculations have been hidden from view, there is nothing to stop the user overwriting important cells on *Sheet1* such as *C14* (where the result is now displayed). You can prevent this using a combination of cell locks and sheet protection:

1. Open the **Tools** menu, select **Protection** then **Protect Sheet...**
2. Press **<Enter>** for **[OK]** without supplying a password or changing other options
3. Try making changes to the sheet, either by typing in new data or typing into empty cells - you will be informed that the sheet is protected and read-only



To turn off the protection:

4. Open the **Tools** menu, select **Protection** then **Unprotect Sheet...**

You should now be able to type in new data again. Normally, you don't want to protect the whole sheet but just certain cells. By default, all cells are protected. If you don't want this then you have to remove this setting before you protect the sheet:

4. Drag through cells *A3* to *A12* to select the data entry area
5. Open the **Format** menu and choose **Cells...**
6. Click on the *Protection* tab and then on *Locked* to remove the tick from the check box
7. Press **<Enter>** or click on **[OK]**
8. Open the **Tools** menu, select **Protection** then **Protect Sheet...**
9. Press **<Enter>** for **[OK]** without supplying a password or changing other options
10. Try making changes to the sheet - you should find that you can type in fresh data but cannot change any of the other cells

Tip: When creating a worksheet for others to fill in, it's a good idea to apply shading to the cells which are protected to emphasize that they are not to be used .

Hiding Formulae

Though you cannot change the formula in cell *C14*, you can still see it on the formula bar (if you click on the cell). Excel allows you to hide formulae so that other users cannot simply copy a worksheet and paste it into a new file (if they do, the results of the formulae appear, not the formulae themselves). To set this option you must first unprotect the worksheet:

1. Open the **Tools** menu, select **Protection** then **Unprotect Sheet...**
2. Click on cell *C14* then open the **Format** menu and choose **Cells...**
3. Click on the *Protection* tab and then on *Hidden* to add a tick to the check box - leave *Locked* set on as well - press **<Enter>** or click on **[OK]**

The formula isn't hidden yet (you can still see it on the formula bar) but it will be once the sheet is protected:

4. Open the **Tools** menu, select **Protection** then **Protect Sheet...**
5. Press **<Enter>** for **[OK]** without supplying a password or changing other options

The formula has now disappeared but *C14* is still updated whenever you change a data value.

Setting Passwords

Up until now you haven't set a password when protecting a sheet, so anyone who knows Excel could still break the security (redisplay formulae and unhide sheets). If you do need to set passwords then you must take care to record them somewhere so that you'll be able to make amendments and corrections in future.

1. Open the **Tools** menu, select **Protection** then **Unprotect Sheet...**
2. Open the **Tools** menu again, select **Protection** but this time **Protect Sheet...**

3. Type a password into the box provided - here use **xxx**
4. Note the additional options - turn off **Select locked cells** (this stops the user clicking on a cell which can't be altered)
5. Press **<Enter>** for **[OK]**
6. Confirm the password - type **xxx** - then press **<Enter>** for **[OK]**
7. Change one of the data values to check the sum is recalculated
8. Try clicking on one of the cells outside the data values - you'll find you can't

If you want to make any changes to the worksheet setup you must first supply the password:

9. Open the **Tools** menu, select **Protection** then **Unprotect Sheet...**
10. Type the password **xxx** into the box provided then press **<Enter>** or click on **[OK]**

Changes can now be made to the sheet, which can then be protected once more with a password as before. Note that the original password has been cancelled - this is how you change passwords on a sheet. For practice:

11. Repeat steps **2** to **6** above but this time set a password of **yyy** and turn **Select locked cells** back on

Passwords can be set not only on individual sheets but on the entire workbook:

1. Open the **Tools** menu again, select **Protection** but this time **Protect Workbook...**
2. Passwords are again optional - type **zzz** to set a password here then press **<Enter>** for **[OK]**
3. Confirm the password - type **zzz** - then press **<Enter>** for **[OK]**

If you now open the *Format* menu you will find under *Row/Column/Sheet* that all the commands are greyed out - no changes can be made to the worksheet. Only the data-entry cells *A3* to *A12* remain active. Similarly, if you *right click* on the *Sheet1* tab, you cannot insert, delete, rename, move or copy the sheet - the whole workbook is protected. You did not explicitly protect *Sheet3*, however, so that can still be used. In this next exercise you will use *Sheet3* to

make a copy of *Sheet1* (equivalent to someone trying to make a copy of your work into their own file):

5. Make sure you are viewing *Sheet1* then press **<Ctrl a>** to select the whole sheet
6. Press **<Ctrl c>** or click on the **[Copy]** button
7. Click on the *Sheet3* tab, make sure you are in cell *A1* and press **<Enter>**

Though the cell values and layout are pasted across, the formulae are not. Try changing the data values and you will find that the sum in *C14* does not change. The sheet is all-but useless; the security worked. Had the *Select locked cells* option been left on, only cells *A3* to *A12* would have been copied - try this out, if you like.

Worksheets can be unprotected (and passwords changed) in exactly the same way as you saw for sheets but this time you use **Tools** then **Protection** and **Unprotect Workbook...** Note that you can also *Protect and Share Workbooks* and *Allow Users to Edit Ranges* from this menu.

Adding a Password when Saving

As with all files, you can add a password when you save your work:

1. Click on the **[Save]** button or use **Save** from the **File** menu
2. Give your file a name (eg *pwd*) and decide where you want to save it
3. Click on **[Tools]** in the top right of the *Save* window and select **General Options...**
4. Set a *Password to open* of *xyz* then press **<Enter>** or click on **[OK]**
5. Confirm the password - type *xyz* - press **<Enter>** or click on **[OK]**
6. Press **<Enter>** or click on **[Save]** to save the file
7. Close the file (leaving Excel running) by clicking on its *close window* button
8. Open the **File** menu and select the file (*pwd.xls*) from the list of recently opened files
9. Type in the password *xyz* (press **<Enter>** for **[OK]**) and the file will appear

To remove the password from the file:

1. Open the **File** menu and choose **Save As...**
2. Click on **[Tools]** in the top right of the *Save* window and select **General Options...**
3. Delete the *Password to open* then press **<Enter>** or click on **[OK]**
4. Press **<Enter>** or click on **[Save]** - click on **[Yes]** to overwrite the password-protected file
5. Open the **File** menu and select the file (*pwd.xls*) from the list of recently opened files - it should open without requiring a password
6. **[Close]** the workbook - you'll need to delete it later