Workbooks in Englisch für
IT Seminare und EDV Schulungen
als Word-Dokument für Excel 2016
zum Ausdrucken und fürs Intranet

Aus technischen Gründen wurde in dieser
Musterunterlage dieses Deckblatt zusätzlich eingefügt,
und anders als im Original-Worddokument haben wir
das Inhaltsverzeichnis am Ende platziert.
Darüber hinaus entsprechen hier auch die Kopf- und
Fußzeilen nicht dem Original.

18 Templates

Excel features the option of saving workbooks as templates. A template is a type of form that can be used as a basis for creating new workbooks. Design elements, formulas, formats, or texts are saved in templates. You can use these in other workbooks based on this template.

18.1 The benefits of a template

You can open a sample template like any other workbook and make any changes you want.

☞ Templates are used to make your work easier and create consistency. When you open workbooks based on these workbook templates, you can keep the elements you need. You can use the basic layout, formats, and formulas and add the data you want.

If you use the settings listed below regularly, you should save them in templates:

- number of sheets in a workbook
- formattings
- page formats
- print range settings
- headers/footers
- row and column labels

- date
- formulas
- pictures and graphics
- custom toolbars
- macros
- protected areas of the workbook.

18.2 Creating a template

Our task now is to create a template with pages that are printed in landscape format. The header should contain the text **Garden Accessories Meyer LLC** and the date and the footer should include the page numbers. The workbook is designed to record the monthly sales statistics by branches and product categories.
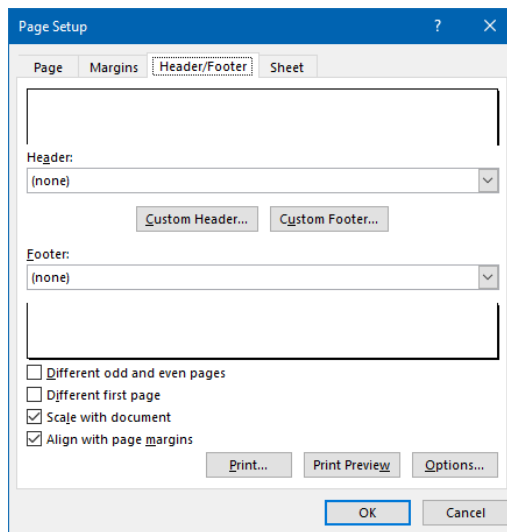
1. Open a new worksheet, e.g., with ⌨Ctrl+⌨N or via **File** menu, **New**.

2. On the **Page Layout** tab, in the **Page Setup** group, click ⌐. The dialog box appears.

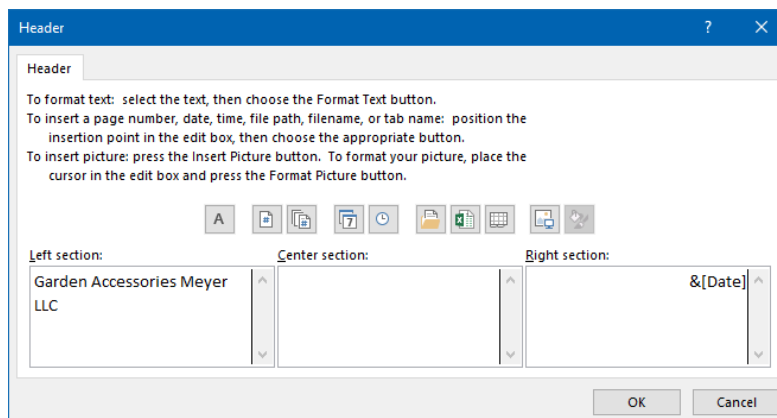3. On the **Page** tab, select the ◉ **Landscape** option.
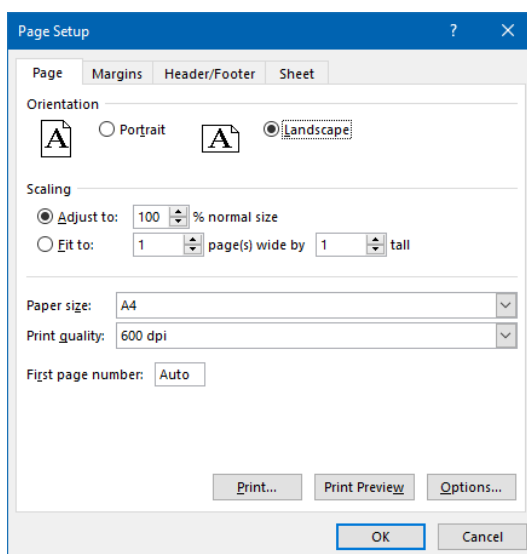
Page tab

Headers and footers

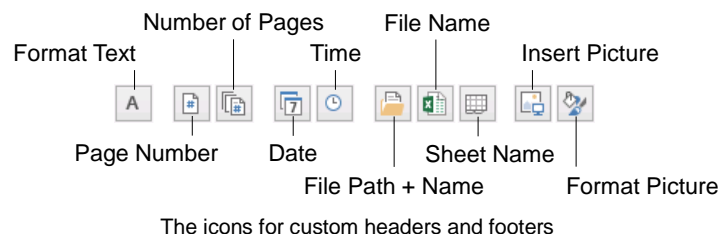1. On the **Header/Footer** tab, click the `Custom Header` button.

Header/Footer tab

2. Click in the **Left section** box. Type in the following text: **Garden Accessories Meyer LLC**.

3. We now want the date to appear in the **Right section** box. So, click the **Date** icon:

Custom header with the icons:

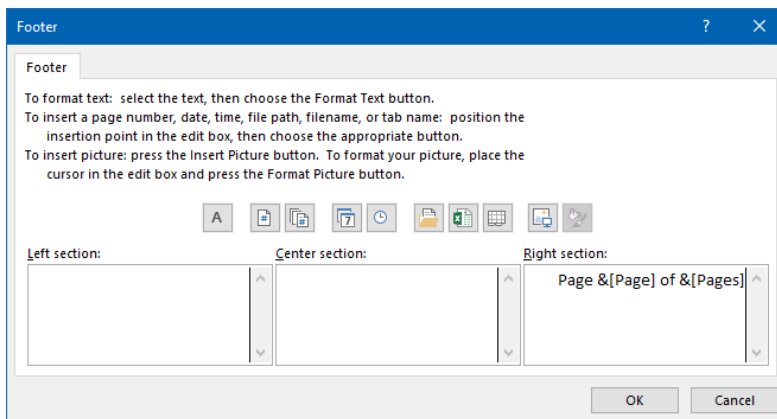The icons for custom headers and footers

4. Click `OK` to close the **Header** dialog box.

5. In the **Header/Footer** tab, now click the `Custom Footer` button.

6. Click in the **Right section** box and type in the following:

    a) **Page** + Space

    b) Click the **Page Number** icon + Space

    c) **of** + Space

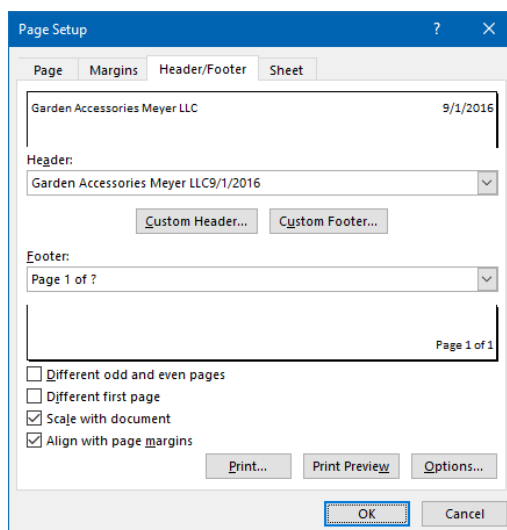   d) Click the **Number of Pages** ⊞ icon.

Result:

Page &[Page] of &[Pages]

Custom footer

7.   Click [OK] to close the **Footer** dialog box.

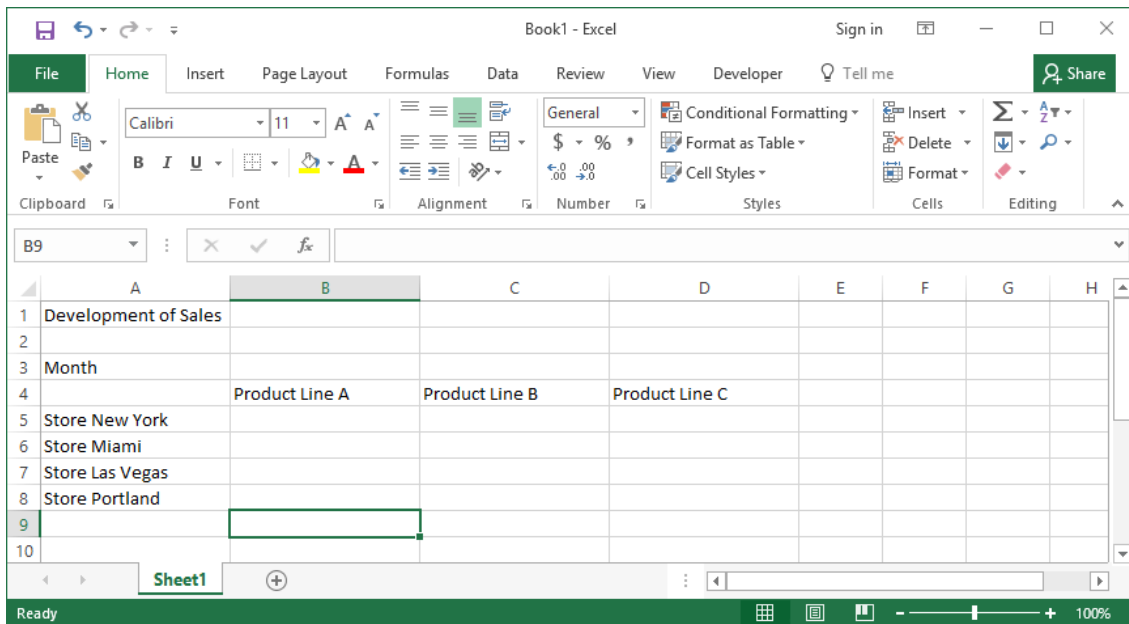8.   Now click [OK] to close the **Page Setup** dialog box.

Tab with custom headers and footers

Enter constant data

The next step is to enter the fixed (constant) data in the template:

1.   For the purpose of this exercise, copy the data from the worksheet below into your worksheet:

Entered items

2. Move the cell cursor to cell **B9** and type in the following formula:

=SUM(B5:B8)

3. Then copy this formula and paste it into the range **C9** to **E9**.

4. Click in cell **E5** and type in this formula:

=SUM(B5:D5)

5. This formula is also required in cells **E6** to **E8**. Insert the formula into this range.

☞ As you haven't entered any numbers into your worksheet, a 0 appears in the cells that contain a sum formula.

18.3 Saving the template

Once you have completed the settings, you can save your template.

1. Press the ⌗F12⌗ key, or open the **File** menu and click **Save as**.

2. Type in the file name **Garden Meyer**.

3. In the **Save as type** box, select the Excel template (*.**xltx**). If you want to save a template containing macros, select type (*.**xltm**)!

☞ Office templates are stored in the **Custom Office Templates** folder, a sub-folder of **Documents**:
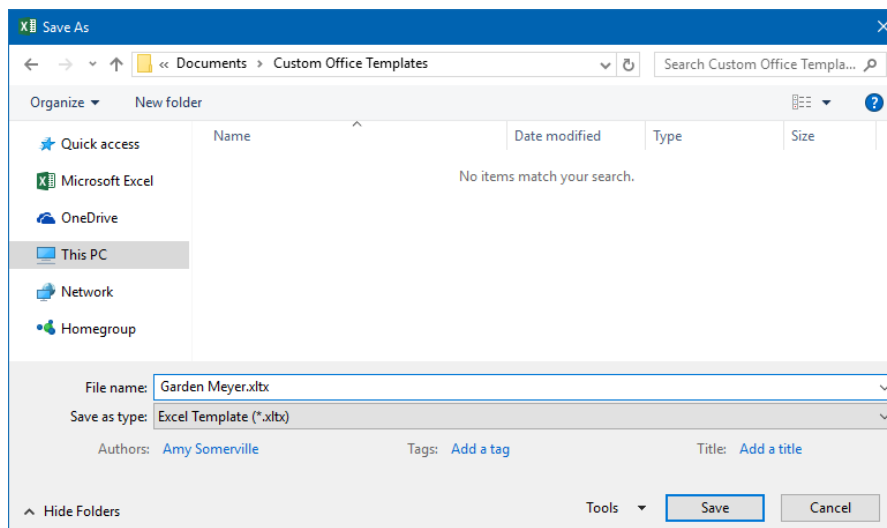
Save As window

4. Click ⌈Save⌉. The sample template is saved with the file extension **.xltx**.

5. Now, close the sample template to make it available as a template!
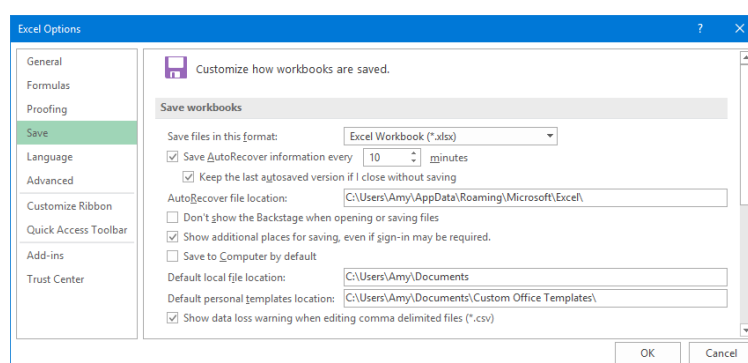
18.4 Displaying custom templates on the File menu

Your templates can be found in the file explorer, namely in the folder you saved them in. However, it is also possible to display the custom templates on the **New** page of the **File** menu. Here's how it works:

1. Open **Excel Options** via the **File** menu und switch to the **Save** page.

2. In the **Default personal templates location** text box, enter the complete path of your template folder and click ⌈OK⌉. As already mentioned, Excel uses the **Custom Office Templates** folder by default. In case of the user Amy, the path is

    C:\Users\Amy\Documents\Custom Office Templates

    If necessary, simply replace Amy with your user name.

Entering the default location for personal templates

On the **New** page of the **File** menu, below **Suggested searches**, two categories are now displayed: **FEATURED** with the default templates and **PERSONAL** with your custom templates. Clicking one of the categories opens the corresponding list.

☞ The settings in **Excel Options** have to be adjusted in each Office programm separately, if you want to display your custom templates on the **New** page.

18.5 Using the template for a new workbook

As your template already contains format-tings such as header/footer etc. you now only need to enter the data. If you want to use your sample template **Garden Meyer** as the basis for a new workbook, proceed as follows:

1. Open the **File** menu and click **New**.

2. On the **New** page, click **PERSONAL**.

3. On the page with your custom tem-plates, click **Garden Meyer**.

A workbook opens which contains all the entries and settings of the **Garden Meyer** template.
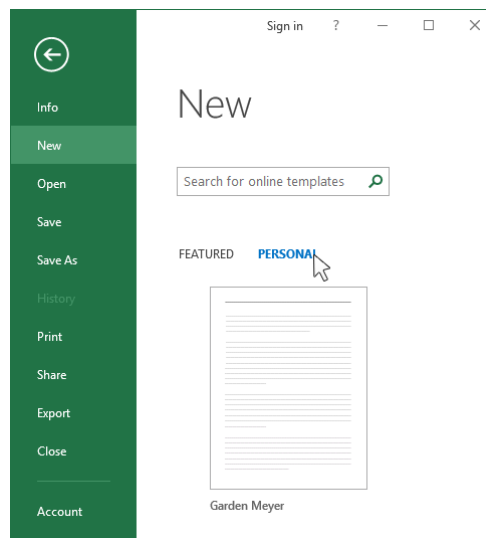
File menu, New

☞ a) In the title bar, you'll see **GardenMeyer1** instead of the standard **Sheet1**.

b) If you want to save a preview, open the sample template **Garden Meyer.xltx** again. Select between one of the two options below:

- Open the **File** menu and click **Save As** an **Browse**. In the **Save As** window, ac-tivate the ☑ **Save Thumbnail** check box at the bottom on the left.

- Alternatively, call up: **File** menu, **Info**, **Properties**, **Advanced Properties**, **Summary** tab. Activate the check box ☑ as displayed in the picture below. Then save and close the sample template.
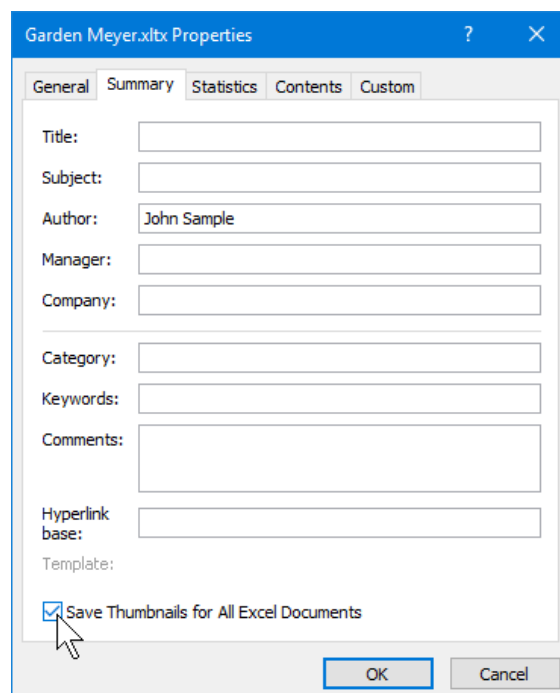

Save thumbnail

18.6 Changing the template

You can edit templates just like any other document:

1. Call up the **Open** page of the **File** menu, click **Browse**, and select the **Template**s **(*.xltx**; ***.xltm**; ***.xlt)** file type.

2. Select and open the relevant file.

3. Make the required changes.

4. Save the template file.

5. The template is now available in the modified form on the **New** page of the **File** menu, in the **PERSONAL** category.

18.7 Exercise

Create the sample template according to the illustration below:
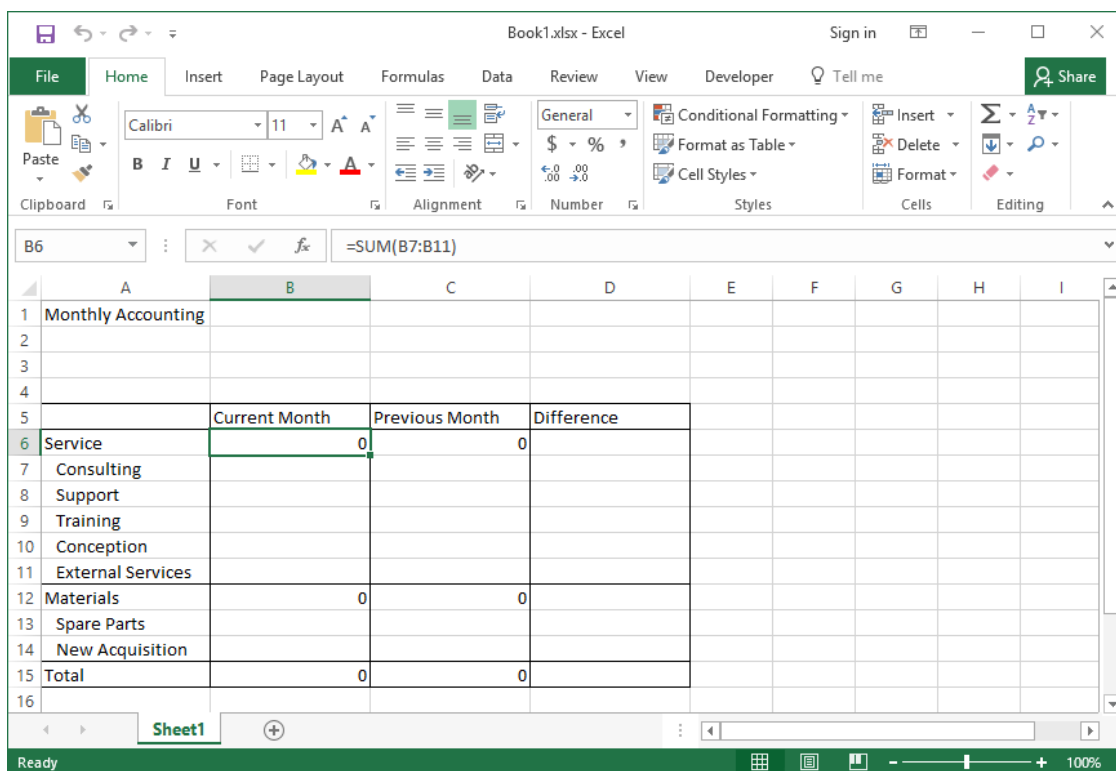
Entered items

The relevant formulas should be entered in the following cells:

B6	**=SUM(B7:B11)**	**C6**	**=SUM(C7:C11)**
B12	**=SUM(B13:B14)**	**C12**	**=SUM(C13:C14)**
B15	**=B6+B12**	**C15**	**=C6+C12**

You can calculate the deviations as the difference between the current month and the previous month. Enter the relevant formulas for this as well.

Save the template as **Monthly Accounting.xltx**.

19   Forms

19.1   Validation and cell protection

Simple forms can be set up with protected cells and data validation. You can use these functions to ensure that users may only type in permitted cells. You can also create notes or dropdown lists. You must perform the data validation before the cell protection as Excel will not allow new validation criteria in a protected sheet. The subject was already discussed on page 30. First create the following sheet:


Cut-out

Validation

Use the data validation function to restrict data entry in a cell. For example, you may want to restrict data entry to dates or numbers, limit choices by using a list of predefined terms, or make sure that only a certain range of numbers are entered. The validation function can be – but does not have to be – combined with cell protection.

1. Copy the data from the previous image into a new, blank workbook or open the file **Forms.xlsx** with the **Application for leave** sheet.

2. Select the cell you want to validate. In this case **B4**.

3. On the **Data** tab, in the **Data Tools** group, click the **Data Validation** button (see also page 51).

4. On the **Settings** tab, select which type of entries you want to allow:
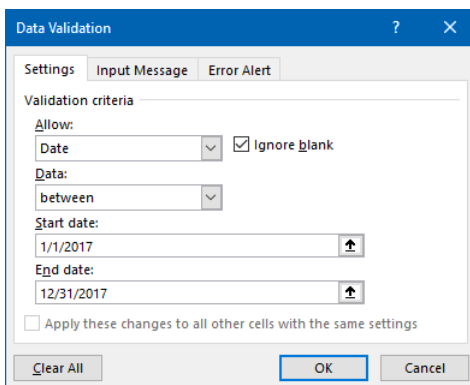
Selecting validation criteria

For numbers, data, and time, you can specify a minimum and a maximum value or, respectively, a start and end date.

On the **Input Message** tab, you can enter a text that is shown when the cell is selected.
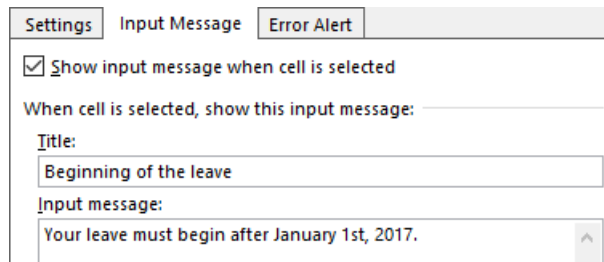
Saving an input message (cut-out)

You can also set up an **Error Alert**. Select the type:

- A **Stop** alert prevents invalid data entries in this cell.

- A **Warning** alert warns users of an invalid entry. Users can still accept data by clicking `Yes`.

- With an **Information** alert, every entry can be typed into the cell, users only have to accept the alert with `OK`.
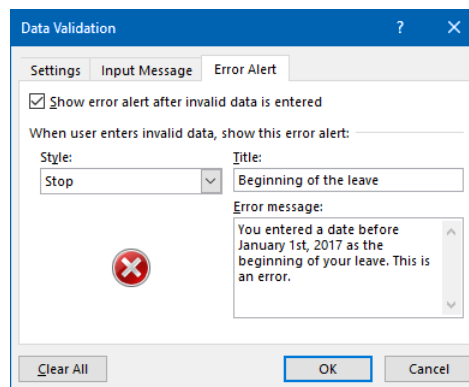

Error alert when invalid data is entered

The input message is displayed if you hover the mouse pointer over the cell. If someone now enters invalid data into this cell, the error alert appears.
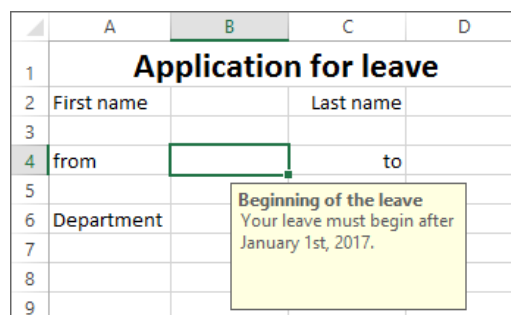
Input message display

Drop-down lists can be created using a list:

1. Select **List** from the validation criteria box.

2. In the right-hand check box, activate the ☑ **In-cell dropdown** option.

3. In the **Source** box, enter the items that you want to be displayed in the dropdown list. The list entries are separated by commas.
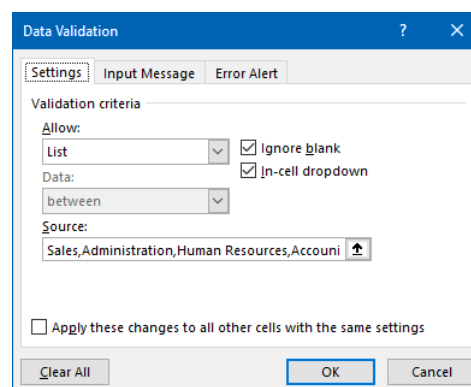
Data validation settings

You can also create the list entries by referring to a range of cells elsewhere in the workbook. For example, cells **M1** to **M9** can contain the department names:

Click in the input box under **Source** and then select the cells **M1:M9** in the worksheet. The list entries are then inserted from this range.
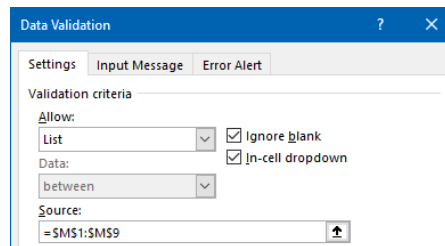
Entering a cell range as source

A drop-down arrow is inserted next to the cell. Click the arrow to open the list.
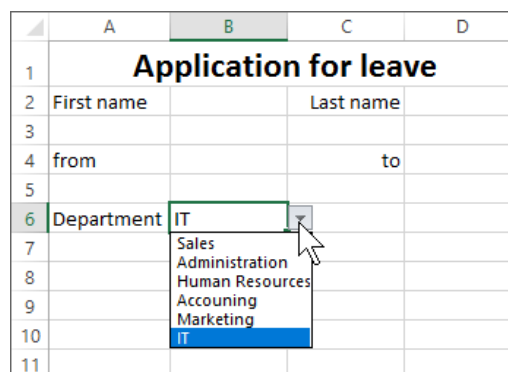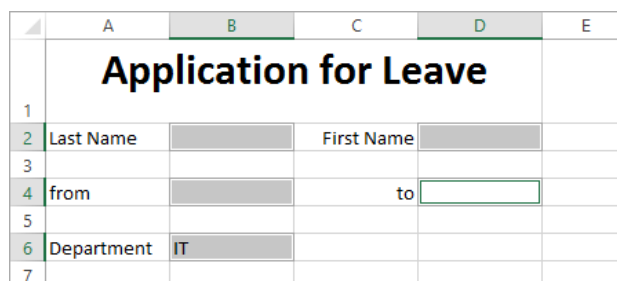

Drop-down list

Cell protection

In this example, the users are only allowed to enter the last name and first name in cells **B2** and **D2,** the start date and end date in **B4** and **D4**, and the department in **B6**. All other cells must be protected from invalid data entry.

1.   First select the cells that you want to keep editable (multiple selection using the ⌨Ctrl key):

Selecting cells

2.   In the context menu, select the **Format Cells** command and click the **Protection** tab.

3.   Deactivate the ☐ **Locked** check box:
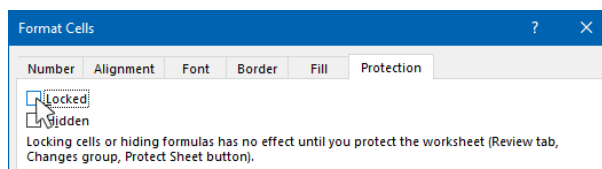
Protection tab (pane)

4.   Click ⌷ OK ⌷ to close the dialog box above.

5.   Then click the **Review** tab on the ribbon at the top and in the **Changes** group, select the **Protect Sheet** button.

6.   The following check box must be activated in the options list:
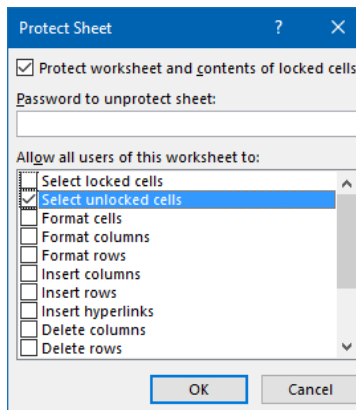
☑ **Select unlocked cells**.

If you deactivate the **Select locked cells** box, users will only be able to edit the cells that you *unlocked* in the previous step.

A user can shift between unlocked cells in a protected worksheet using the ⌈Tab⌋ key.

You can also specify a password to be entered in order to unprotect the sheet. Protection is active even without a password. If you do not supply a password, then any user can unprotect the sheet.

Selecting unlocked cells

19.2 Controls

First make sure that the **Developer** tab is activated on the ribbon as described on page 139.

In the **Control toolbox**, you can find all the tools you need to create forms. You can open this function on the **Developer** tab, in the **Controls** group, via the **Insert** button. It is only active if the sheet protection has been deactivated or you are working on another worksheet. Therefore, switch to the **Controls** sheet.

Developer tab,
Controls group

As soon as you use one of the controls, Excel changes to design mode. In design mode, you can edit controls but they are not active. To test the effect of the control, you have to exit design mode.
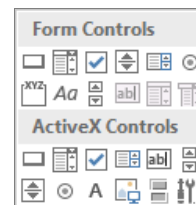
Form controls +
ActiveX controls

General

All controls have common properties (appearance, behavior, presettings). Objects can be hidden when printed and the forecolor and backcolor or borders can be set.
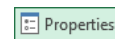
1. Select the **check box** control ☑ from the **ActiveX Controls(!)** section and insert it on the worksheet. Design mode is activated automatically, you'll recognize this by the selection rectangle around the control.
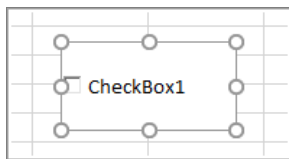
Check box with number

Design Mode icon

2. Keep the control selected. Click the **Properties** icon. A new window opens.

Properties icon

3. The **Caption** property is used to label the control.

4. Controls that you don't want to print in a document receive the **PrintObject = False** property. These controls are displayed in the worksheet but are not printed.

5. You can change the appearance of controls using the various color or style properties:

   For example, **BackColor** or **ForeColor** are responsible for background color and font color.

   To specify the font and size, click the **Font** line. In the active line, a [...] button appears on the right. Use this button to open the **Font** dialog box.
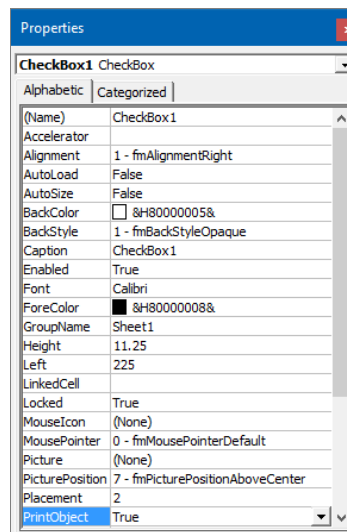
Set properties

Text boxes

The simplest of all controls is a text box. Users can enter text into boxes which can then be moved to another position in the worksheet.

1. Insert a **text box** [abl] (**ActiveX controls**).

2. Text that you enter in the text box must be bound to a cell so that it can be used freely in the worksheet. This is possible using a **LinkedCell**.

3. Select the **Properties** of the text box and enter the output cell under **LinkedCell**.

4. If you want to enter a predefined value for the text box, enter it under the **Value** property. This value is displayed in the text box until users overtype it with their own text.

5. With the **MultiLine** property, you can specify whether a control accepts multiple lines of text or not:

   True means text is displayed across multiple lines

   False means it is displayed single-line.

6. If **MultiLine** is set to **True**, the user can start a new line in the text box using [Ctrl]+[Enter]. The text is displayed across multiple lines.
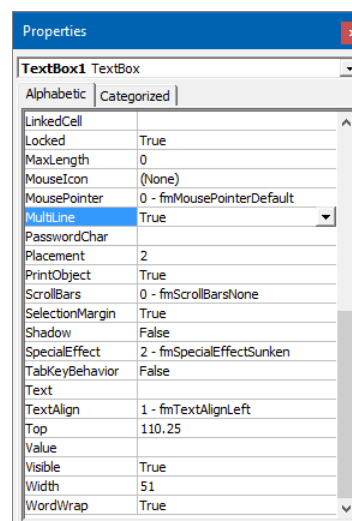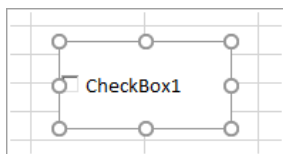
Selecting text box properties

Check boxes and option buttons

Check boxes
Use check boxes to provide the user with several options. It is possible to select multiple check boxes at the same time.

1. Click the **Check Box** icon ☑ (**ActiveX controls**).

2. Plot the check box. The label is set to default as **Check box** with a consecutive number:

Check box with sequence number

3. Open the **Properties** for the check box. Click in the box next to the **Caption** property and change the name to **Hotel brochure**.

4. In the **Properties** window, you must also specify in which cell you want to enter the output value for the check box. Every selected check box returns the **TRUE** value, cleared boxes return **FALSE**. Enter a cell under **LinkedCell** for every single check box.

   You can only enter the output cell. You cannot select the cell from the sheet by mouseclick.
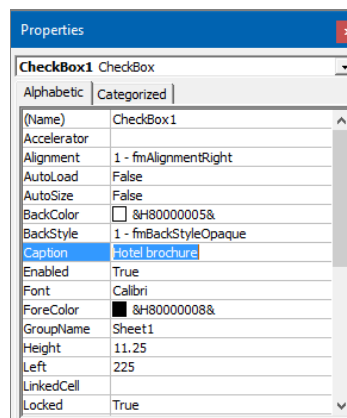
Selecting the check box properties

5. Whether a check box is active or not at the beginning is specified in the **Value** property. **FALSE** indicates that the check box is cleared. **TRUE** selects it: A check mark appears in the box.

6. Draw more check boxes: Directions, List of restaurants, Company brochure, Program, and Exhibition plan.

You must first exit design mode before you can test the check box:

1. Deactivate design mode by clicking the icon.

2. Then, select and clear the check boxes. The **TRUE** and **FALSE** values are typed into the output cells.

Design Mode button

Selecting or clearing the check boxes

Results in the output cells

3. Save the file as macro-enabled workbook (.**xlsm**) with the name **Forms** and switch back to design mode to further edit the form.

Option buttons

In contrast to check boxes, an option button (or radio button) only allows a single choice from a group of mutually exclusive choices. Option buttons bound to different groups must be given a different group name:

1. Click the **Option Button** icon ⦿ (**ActiveX controls**).

2. Plot an option button with label.

3. As with the check box, change the option button label in the **Caption** property.

4. A group name must be given to all option boxes in the same group. Enter the name under **Group-Name**.

5. Specify the output cells for the option buttons in the **LinkedCell** property.

6. The selected option button returns the value **TRUE** all others return **FALSE**.

7. From all the option buttons that are bound by a group name, only one can be selected. Only one single **TRUE** value is permitted.

8. Add the option buttons Company, Authority, Association, and Private person with the same group name.
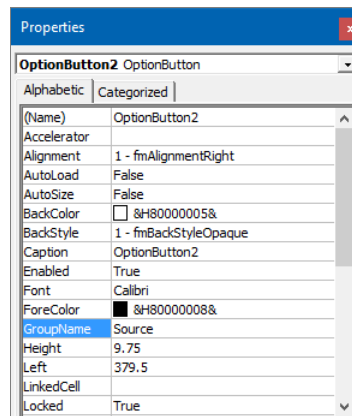
Selecting the option button properties
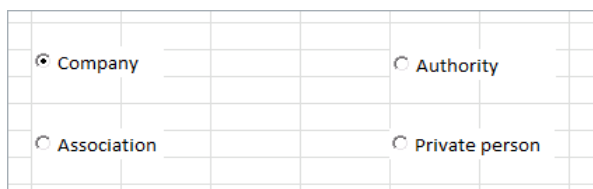
Selecting an option

Results in the output cells

Toggle button

The toggle button is a special feature in Excel that is similar to an option button or a check box as it alternates between an enabled and disabled state. A toggle button can return the value **TRUE** or **FALSE**:

1. Plot a **Toggle Button** (**ActiveX controls**).

2. Assign a label in the **Caption** property.

3. In the **LinkedCell** property, enter the cell to which you want to link the active value.

4. If the button is not pressed, the error value **FALSE** is returned.
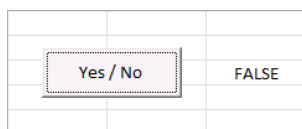
5. If the button is pressed, **TRUE** is returned.
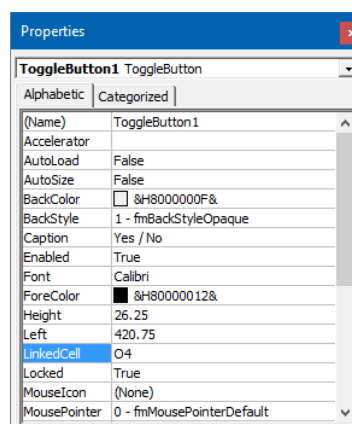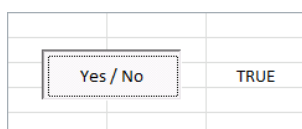
Selecting the toggle button properties

Analyzing TRUE and FALSE

The check boxes, option buttons, and toggle buttons all return the values **TRUE** or **FALSE**. Both these words are typed into output cells and are interpreted by Excel as error values and not text. They can be retrieved using the functions **TRUE()** or **FALSE()**.

In this example, Excel is queried whether the logical value **TRUE** appears in cell **J4**. If it appears, an **X** is entered in cell **K4**, if not, the cell remains blank.

Requested:		
Hotel brochure	TRUE	=IF(J4=TRUE(),"X","")
Directions	FALSE	
Restaurants	FALSE	
Company brochure	FALSE	
Program	FALSE	
Exhibition plan	FALSE	

Error value query

Note that **TRUE** or **FALSE** are not interpreted as text but as the logical functions **TRUE()** or **FALSE()**!

=IF(J4=TRUE(),"X","")

or

=IF(J4=FALSE(),"","X")

List and combo boxes

Drop-down lists can be inserted as list boxes or as combo boxes. Both boxes have the same function but slightly different controls:

- List boxes display a box with several lines. If the display size of the box is not large enough, you can scroll using a scroll bar.

- Combo boxes usually appear as a single line and offer a drop-down list to select from.

1. Plot a **List Box** (**ActiveX controls**) 🔲 or a **Combo box** 🔲 (**ActiveX controls**).

2. In the **Properties** task pane, under **LinkedCell**, enter the cell reference that contains the list box selection. The linked cell returns the number of the selected item in the list box.

3. List boxes and combo boxes are filled with items from a cell range. Enter the range under **ListFillRange**. Here, it is **K23:K30**.

Properties	
ComboBox1 ComboBox	

Alphabetic	Categorized
Enabled	True
EnterFieldBehavior	0 - fmEnterFieldBehaviorSelec
Font	Calibri
ForeColor	&H80000008&
Height	35.25
HideSelection	True
IMEMode	0 - fmIMEModeNoControl
Left	586.5
LinkedCell	I23
ListFillRange	K23:K31
ListRows	8
ListStyle	0 - fmListStylePlain
ListWidth	0 pt
Locked	True
MatchEntry	1 - fmMatchEntryComplete
MatchRequired	False
MaxLength	0
MouseIcon	(None)
MousePointer	0 - fmMousePointerDefault
Placement	2
PrintObject	True
SelectionMargin	True

Selecting properties of lists or combo boxes

The combo box displays the places in the same order as they are entered in the **ListFillRange** property box.

The output cell is **I23**: As soon as a city is selected in the combo box, the name of the city appears in cell **I23**.

Don't forget to save the workbook every now and then!

|	F	G	H	I	J	K
22						
23	Toledo ▼			Toledo		Amarillo
24	Amarillo					Reno
25	Reno					Toledo
26	Toledo					Memphis
27	Memphis					Buffalo
28	Buffalo					Omaha
29	Omaha					Green Bay
30	Green Bay					Anchorage
31	Anchorage					Charlotte

Combo box – output cell I23

Scroll bars and spin buttons

Use spin buttons and scroll bars to insert consecutive numbers. Both return a digit:

1. Plot a **Spin Button** ⬍ (**ActiveX controls**) or a **Scroll bar** ⬍ (**ActiveX controls**).

2. In the **Properties** window, under **LinkedCell**, enter the output cell.

3. Specify the highest and lowest value in the **Max** and **Min** properties.

4. The value you enter in **SmallChange** specifies the step size of the counting.

   If **5** is entered, the spin button moves in increments of **5**.
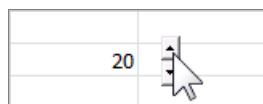
Spin button
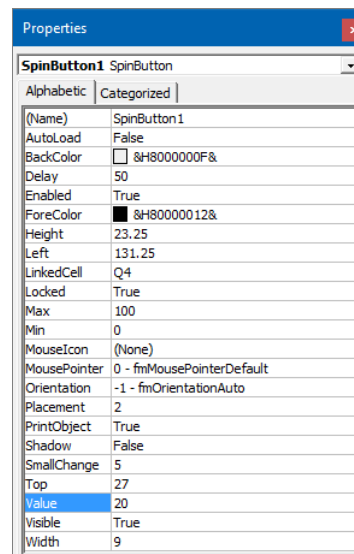
Selecting spin button properties

Command buttons

You can run macros using a command button. You will need a VBA code which you record or enter in the VBA Editor:

1. Plot a **Command Button** ▭ (**ActiveX controls**).

2. Click the **View Code** button.

View Code icon

3. The VBA editor opens with a blank sheet. Select the **CommandButton1** entry from the list box ▾ instead of **General**. Here, only the start and the end of a macro are displayed.

Start and end of a macro

   The name of the command button (**CommandButton1**) is important as it must be identical to the caption from the button properties.

4. Enter the macro code you want between **Private Sub** and **End Sub**. The row below prints the active sheet twice:

```
Private Sub CommandButton1_Click()
        ActiveWindow.SelectedSheets.PrintOut Copies:=2
End Sub
```

5. Save 💾 the code, close the VBA editor, and change the caption of the button via the **Properties** window to **Print 2x**.

19.3 Formatting

View

Forms should be presented as clearly as possible. Certain elements can be superfluous, e.g., gridlines and column headers, and can be removed:

1. Hide the gridlines for the screen presentation via the **Show** group on the **View** tab:
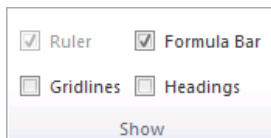
Window options

2. Here, you can hide row and column headings, as well as the formula bar. Excel then hides the column headers (A to IV) and the row numbers.

3. It may also be useful to hide the sheet tab (**Sheet1**, page Seite 27): Right-click the respective sheet tab and select **Hide** from the context menu. This is particularly recommended, if you want the user to make entries on one sheet only. To show it again, right-click one of the the remaining sheet tabs and select **Unhide**.
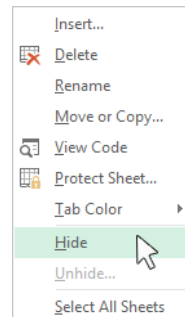
Sheet tab context menu

Hide and unhide columns and rows

Many controls return error values that confuse the user. Hide the columns:

1. Select the columns you want to hide. Make sure you select entire columns via the column headers.

2. Right-click the selected range and select the **Hide** command from the context menu.

3. The missing letters on the column headers indicate which columns are hidden:
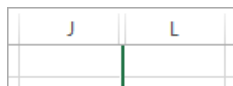
Column K was hidden
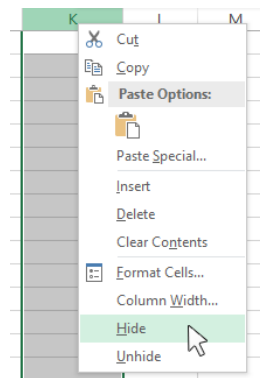
Hiding selected columns

4. To show the hidden columns again, select the columns that are still visible (in this example **J** and **L**). Right-click in the selected columns and select the **Unhide** command.

19.4 Printout

When working in forms, it can sometimes be useful to enforce fitting the printout to one page. This ensures that you can specify how many pages you want to print regardless of the connected printer. Use the same dialog box to set headers and footers with page numbers and file names.

1. To open the dialog box below, on the **Page Layout** tab, in the **Page Setup** group, click ⌐.

2. On the **Page** tab, enter:
   ◉ **Fit To: 1 page(s) wide by 1 tall**.
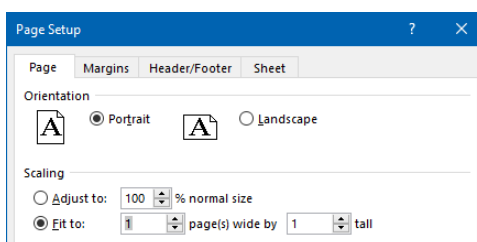
Fitting the form page (cut-out)

☞ With forms across multiple pages, you can also set up the number of pages and the height and width you want the form to have (e.g., 1 page wide by 2 pages tall).

Use the **Header/Footer** tab to customize headers or footers via the **Custom Headers** and **Custom Footers** buttons (see page 165):
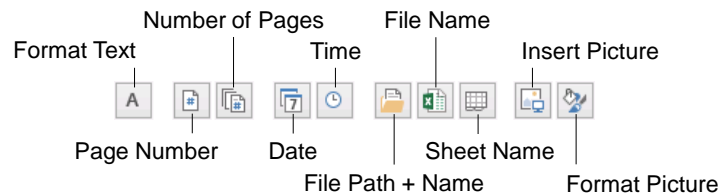
The icons for custom headers and footers

Excel features two icons for the page numbers:

- The first icon indicates the active page number of the sheet.
- The second icon shows the entire number of pages.

You can call up the file name with or without path, and the sheet name with these three icons:

- File name including path
- File name
- Sheet name.

If some columns are reserved for evaluation or specific cell ranges are filled with list boxes, these will also be printed on the sheet. You can avoid this by setting a print area:

1. In the **Page Setup** dialog box, open the **Sheet** tab.

2. In the **Print Area** field, enter the cell range that you want to print:
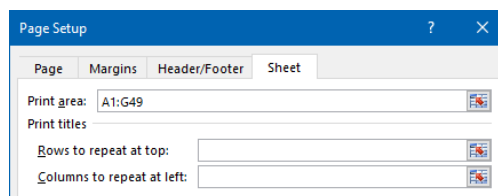
Entering the print area

3. The print area is identified on the worksheet with a black dash line.

4. To clear the print area, select the command displayed on the right on the **Page Layout** tab in the **Page Setup** group.
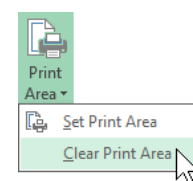
Clearing the print area

19.5 Exercise: scroll bar

In the following exercise, the task is to use the **Scroll bar** control to select consecutive numbers as described on page 178.

1. Open the **Car Suspension.xlsx** workbook from page 116, and save it with the new name **Car Suspension with Scroll Bar**

2. Select the complete line chart on the **Chart1** sheet by clicking it and copy it to the clipboard.

3. On the **Oscillations** sheet, click cell **A40** and paste the copied chart here.

4. Make the chart slightly smaller and plot the ⬍ **Scroll Bar** (**ActiveX control**) as you can see in the following image **Line Chart with Scroll Bar**.

5. We now want to use this scroll bar to conveniently change a parameter from range **F6** to **F9**. The **Oscillation Period** in **F9** is suitable. In design mode, enter the cell reference **F9** under **LinkedCell** in the **Properties** window (page 174).

6. In the **Max** and **Min** properties, enter the highest value of **40** and the lowest value of **1**.

7. Enter the increment **1** under **SmallChange**. Then exit the design mode.

8. It is not necessary, but it is interesting to see what happens when you enter the current value next to the scroll bar: Enter a link to the cells **E9** (**=E9**) and **F9** (**=F9**) as you can see in the chart below in cells **H50** and **H51**:

Properties		x
ScrollBar1 ScrollBar		▼
Alphabetic	Categorized	
(Name)	ScrollBar1	
AutoLoad	False	
BackColor	☐ &H8000000F&	
Delay	50	
Enabled	True	
ForeColor	■ &H80000012&	
Height	227.25	
LargeChange	1	
Left	580.5	
LinkedCell	F9	
Locked	True	
Max	40	
Min	1	
MouseIcon	(None)	
MousePointer	0 - fmMousePointerDefault	
Orientation	-1 - fmOrientationAuto	
Placement	2	
PrintObject	True	
ProportionalThumb	True	
Shadow	False	
SmallChange	1	
Top	664.5	
Value	11	
Visible	True	
Width	15.75	

Properties

Line chart with scroll bar

9. To change the oscillation period and the line chart, hold down the left mouse button and drag the slider in the new scroll bar.

Schulungsunterlage für Excel 2016 Weiterführung Englisch

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