

Manual for the construction of extraction macros with MIA

1. Preliminary remarks

MIA – the Macro collection for qualitative content analysis (**M**akrosammlung für qualitative **I**nhalts**A**nalyse) – came out because we didn't find a commercial software which supports the approach of qualitative content analysis, namely extracting rather than coding of data. MIA is not a professionally developed software but an instrument put together by two sociologists. Therefore we cannot guarantee that MIA will run everywhere error-free. Usually it works without problems. We tested it on several computers under Microsoft Office 2000, 2002, 2003, 2007, 2010, 2013. We cannot guarantee that it will work under all hardware and software configurations. *MIA is given away free but we cannot guarantee for it and can give you only limited support if errors occur.* We provide macros which should run on most computers. The provided files are free of viruses. If errors occur you can contact us, and in most cases we find a solution. We refer to the licence in the appendix.

You find here a manual for the construction of extraction macros and details about the hardware requirements, errors etc. as far as they were known to us until January 2014. This manual is not a sufficient basis for conducting a qualitative content analysis because it deals with the technical aspects. In order to use MIA properly you need to understand the methodology and method of our qualitative content analysis. You can find a short description of the method in the discussion paper "Life with and without coding: Two methods of early-stage data analysis in theory-guided qualitative research" (Gläser and Laudel, 2011; downloadable from our website).

2. Requirements for the macro construction

2.1 Hardware

Our experiences show that MIA runs on all computers which work under Microsoft Office. The program needs so little disk space that you don't need to worry about it.

2.2 Software

MIA is working under **Microsoft Word 2003/ 2007/ 2010/ 2013 and Visual Basic for Applications (VBA) Version 6 or Version 7**. One of these combinations must be installed. Word and VBA are part of Microsoft Office.

2.3 Brainware

Since the programming of VBA takes great efforts to learn, MIA is designed in a way so that the users do not need to program themselves. Only elementary knowledge about the use of computers and the confident use of Word for Windows is required. It is helpful if you can handle toolbars, document templates etc. In the further analysis the ability to use tables are is useful.

2.4 Download of the files

On our webpages you find the Zip file "mia-word-2007-2010-e". You have to download this version to your computer, unpack it and copy the two files into a directory in which you are going to conduct the analysis.

Virus Protection as a problem: Overly “ambitious” virus protection programs have become the most common reason for malfunctioning of the macros. Such programs wrongly identify parts of our program as virus and quickly remove those parts. These are for example the virus protection programs of “McAfee” or “F-Secure Anti-Virus”. The “disinfection” occurs automatically with the first access to our files.

If your virus protection program reports about a macro virus then you have a problem. Never solve the problem by just switching off your virus protection program. Most virus protection programs have an option where you can exclude specified directories from the virus check. Then If possible exclude the MIA directory that you have selected before. If this is not possible you should install a different virus protection software (for example the freeware AVG which tolerates our macros).

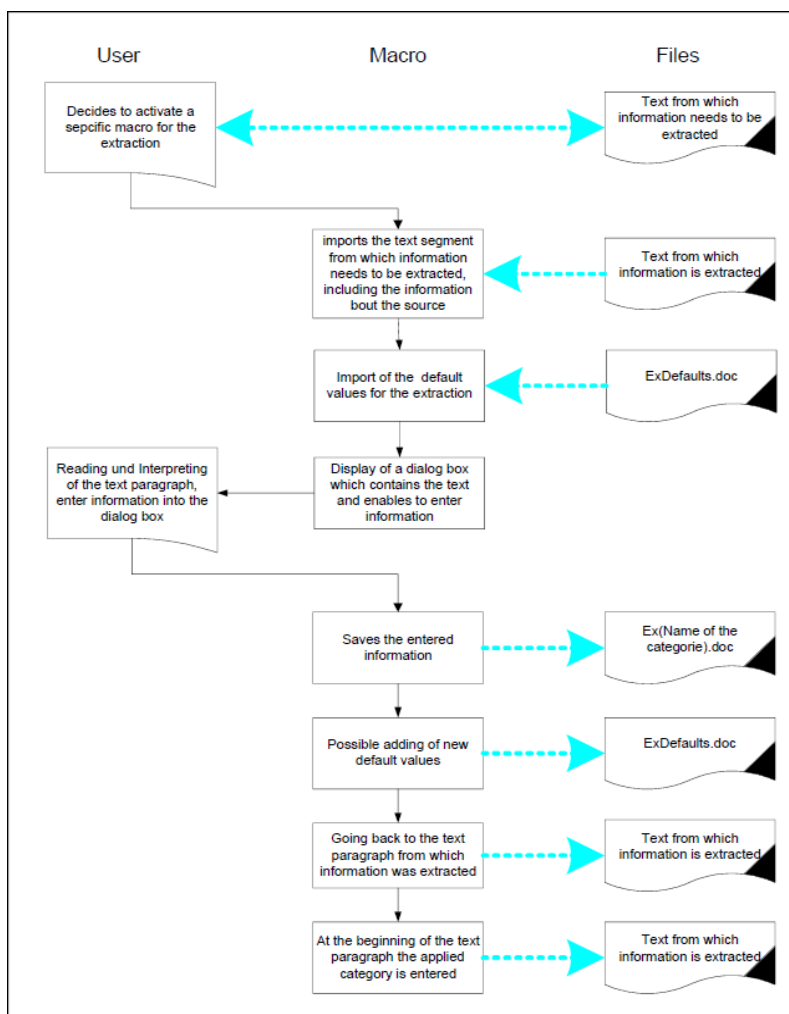
Unpack: The work with compressed files nowadays is so comfortable that we often forget to unpack the files and put them in decompressed form in a separate directory. In the case of MIA you need to do that, otherwise the macro construction won't work. After unpacking the files you get the files Start07e.docm and M07e.dotm for Word 2007, Word 2010 and Word 2013. For reasons of simplicity we call these files in the following just Start.docm and M.dotm.

These two files are needed for the macro construction. The file “Start.docm” contains all macros and initial material that is needed for the construction of macros. “M.dotm” contains all programmes for the extraction, that is all extraction macros that you constructed and three auxiliary macros for the qualitative content analysis, namely “MarkParagraphs”, “RemoveMarks” and “GetSource”.

For the extraction later you only need the template “M.dotm” and the files starting with “Ex” which have been created during the macro construction.

3. What are and how do extraction macros work?

The following flow chart shows what happens during the work with the macros.



4. How to construct macros

4.1 Preparation

4.1.1 Copying of files

Create or select a file directory in which you would like to construct the macros. In this directory, also the files "ExDefaults.docx" (for the default values of all macros) and an output file "Ex???.docx" for each category are stored ("???" stands for the name of the category which is identical with the name of the macro).

It is easier if you choose in advance the directory in which you want to conduct the extractions (that is which contains your texts and your results of the extractions). But it is not a necessary condition. You can also copy the macros in another directory or construct them on another computer and copy them afterwards to the chosen directory.

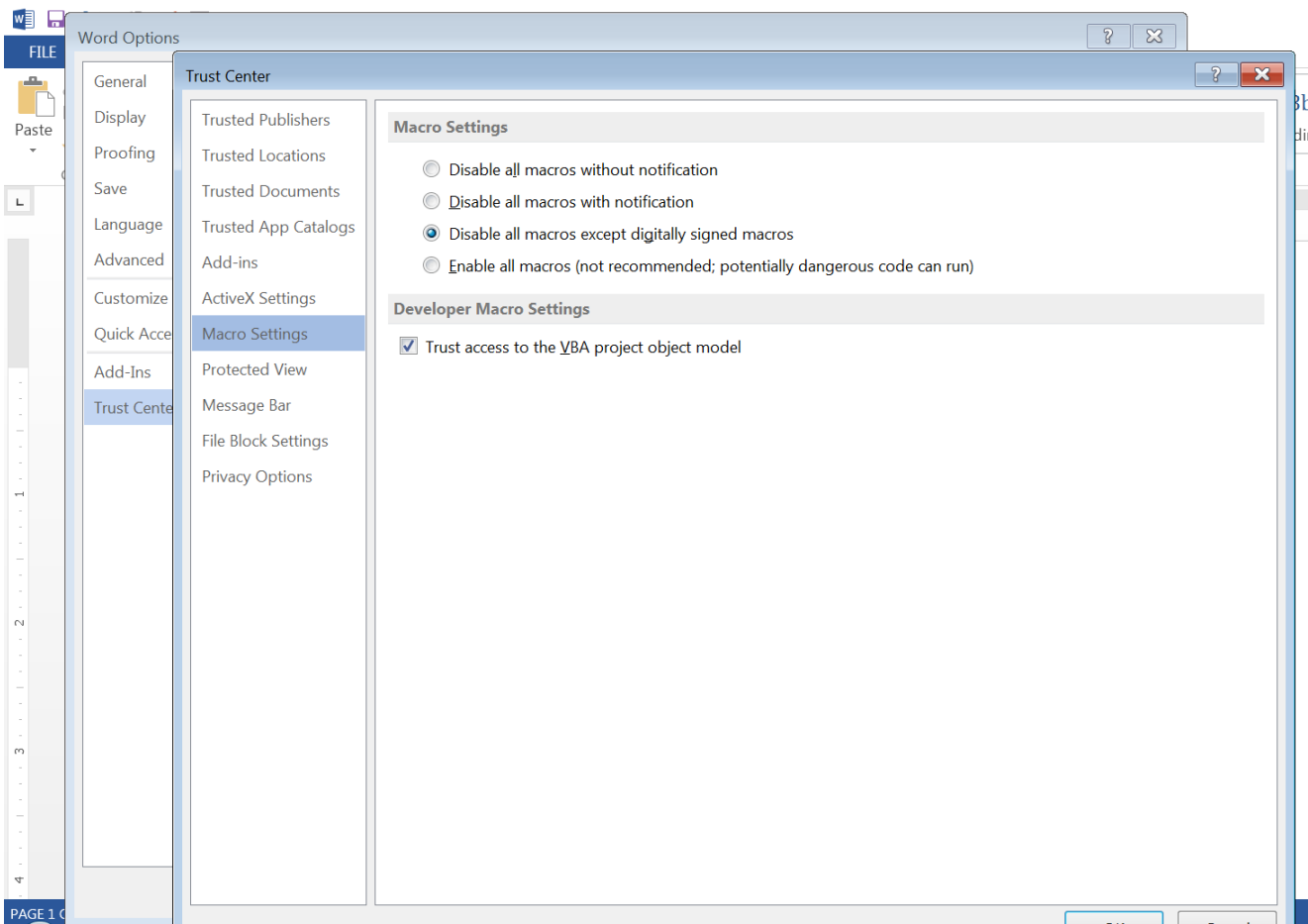
The two files "Start.docm" and "M.dotm" must now be copied into this directory. In the example where you can see some figures here, the directory "C:\MacroConstruction" was created. Now, please start WORD.

4.1.2 Adjusting of the macro security

Click on "File" and select "Options".

Click on the "Trust Center" option and then click on the "Trust Center Settings" option. Click on the "Macro Settings" option. Click on the "enable all macros" option to accept all macros and click on the "trust access to the VBA project object model" option to allow access to the Microsoft Visual Basic Applications (VBA) program.¹ Close WORD. Start WORD again.

¹ All screenshots are taken from the Word 2013 version




Please note: this is not a good security solution in general but there is no other way in Word 2013 to work with the VBA macros. (For no apparent reason, Microsoft has removed the “medium” security level it had introduced in the Word 2003 version). Please set the security level always back to a higher level if you don't work with the macros.

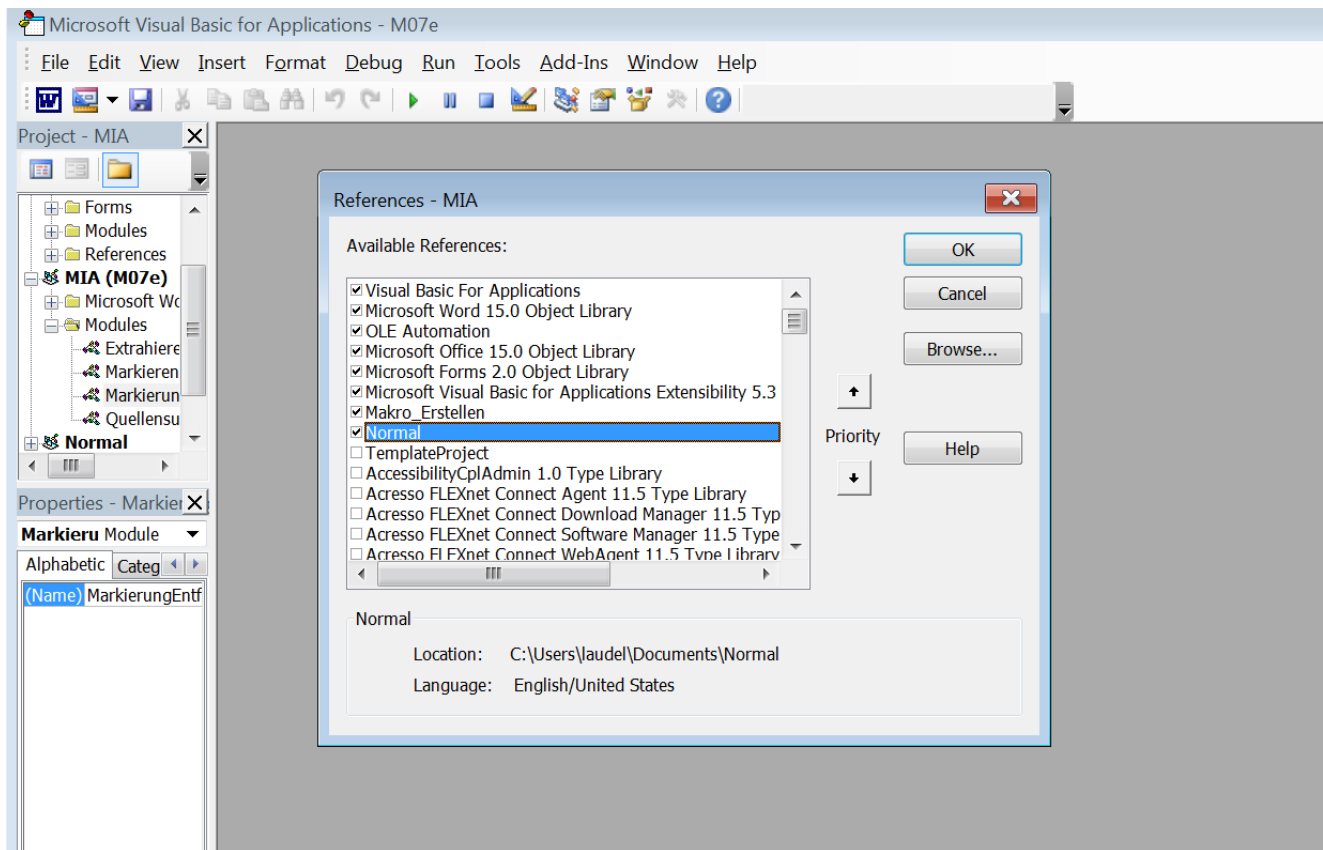
4.1.3 Activating the macros

Open the file "Start.docm" which is located in the directory you have chosen.

4.1.4 Insert references into the Visual Basic Editor

For the construction of macros, certain references must be enabled in the VBA editor. Checking this and if necessary make up for it is one of the steps that cannot be automatised. *These reference settings are kept so that you have to do it only once, that is before the very first work with MIA on your computer.* Change to the Visual Basic Editor. The easiest way is to click the shortcut key Alt-F11. In WORD you can also select “Developer”– “Visual Basic”. In the Visual Basic Editor you search the toolbar for “Tools” and in there for “References ...”.

(If the Reference option is not available click the Microsoft Office Button , and then click Word Options, click Popular, and then select the Show Developer tab in the Ribbon check box.) You will get the following dialog box:



Now, you must search the list for following references and make sure that they are activated:

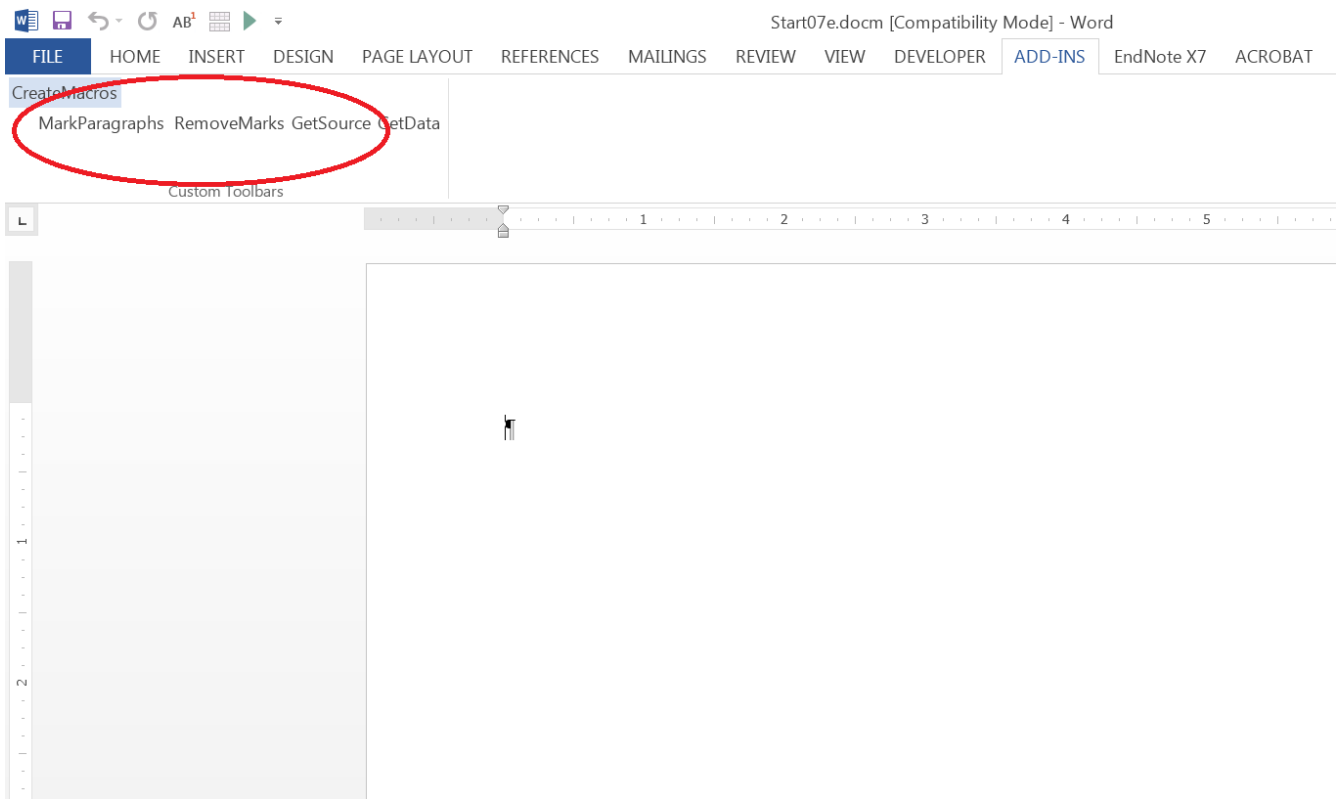
- Visual Basic for Applications
- Microsoft Word 15.0 Object Library
- OLE Automation
- Microsoft Office 15.0 Object Library
- Microsoft Forms 2.0 Object Library
- Microsoft Visual Basic for Applications Extensibility 5.3
- Normal

If these references are already selected you will find them at the beginning of the list and the check box left-hand will be ticked. Otherwise you must search for these references in the list “Available References” and tick their check boxes. Then you click OK and close the Visual Basic Editor. The preparations are now finished.

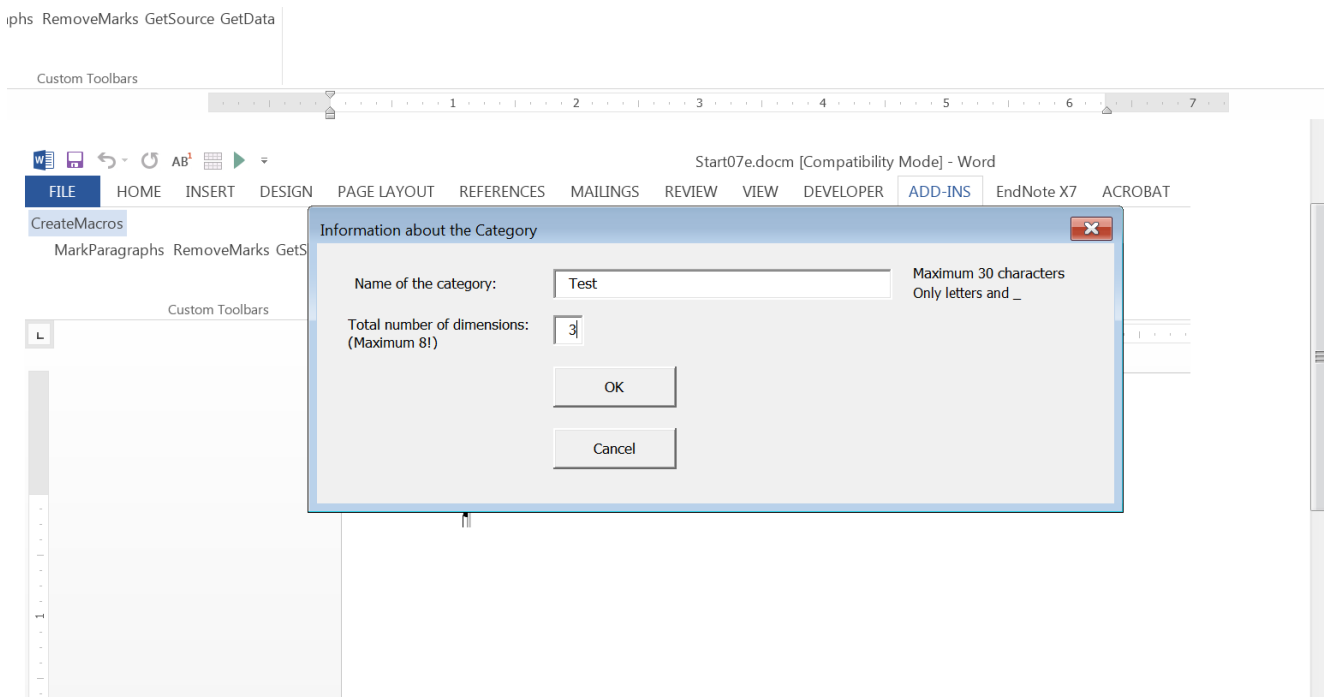
4.2 The process of the macro construction

If the file "Start.docm" is opened, you will find two lines of macros under the menu item “Add-Ins”:

- “CreateMacro”, and
- the macros “MarkParagraphs”, “RemoveMarks” and “GetSource”.



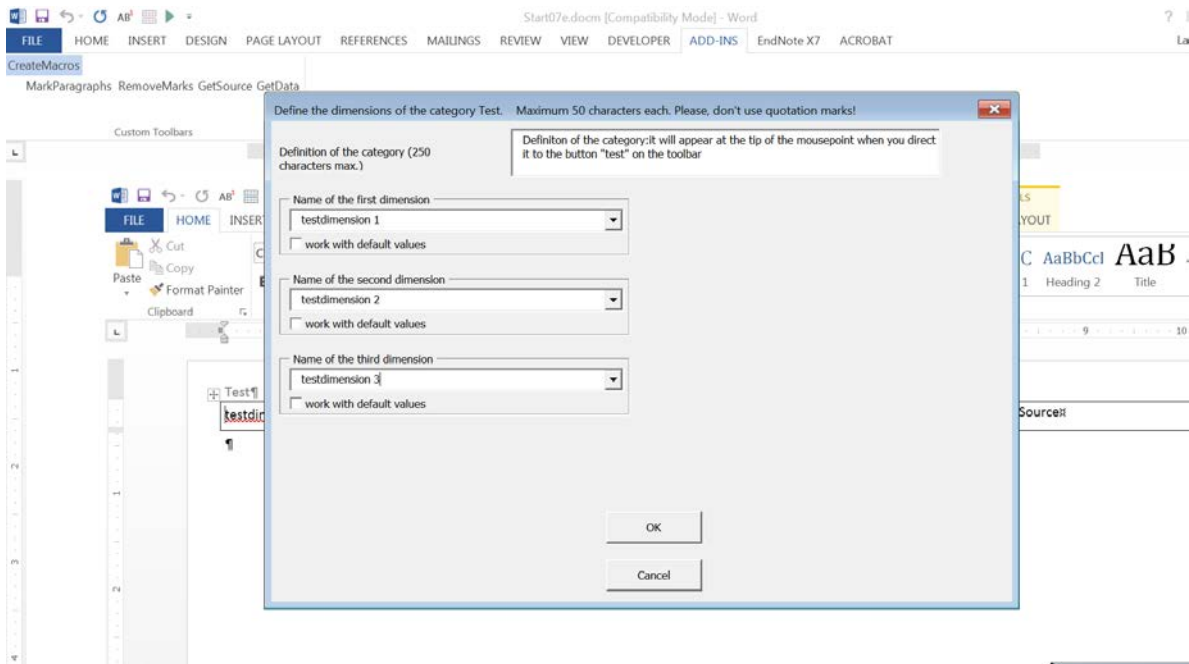
Close all other word files except the file Start.docm and then click on “CreateMacro”. After the licence information, the programme checks whether other files are still open. Then a dialog box appears in which you need to enter the name of the category (which is also the name of the macro) and the number of dimensions. The field ‘OK’ will be only activated if the name of the variable does not contain blanks and if the number of dimensions is larger than 0 and smaller than 9. In the example, the variable was named “Test” and has three dimensions.



The programme checks whether there is already a macro with the same name. What happens in the case of identical names is described in 4.3. If it is a new macro, the next dialog box appears. In this dialog box you are asked to enter a definition for you variable. It appears later as a reminder of the content of the category every time you go with the mouse pointer on the button of the macro (on the toolbar). Furthermore, in the dialog box you give each dimension a name and decide whether default values should be collected. The ‘OK’ button will only be activated if at least two

characters are in each name box. This way you can't forget to insert a name for each dimension. The names of the dimensions must not exceed 50 characters and may contain all kinds of characters (also blanks) –with one exception: *You must not use inverted commas!*

Since the names of the dimensions are also used during the search of default values, you can access the same list of default values with different categories. For example, it is often useful to have a "time" dimension in each category. If this dimension name in each category is written in exactly the same way, all categories access the same list of default values.



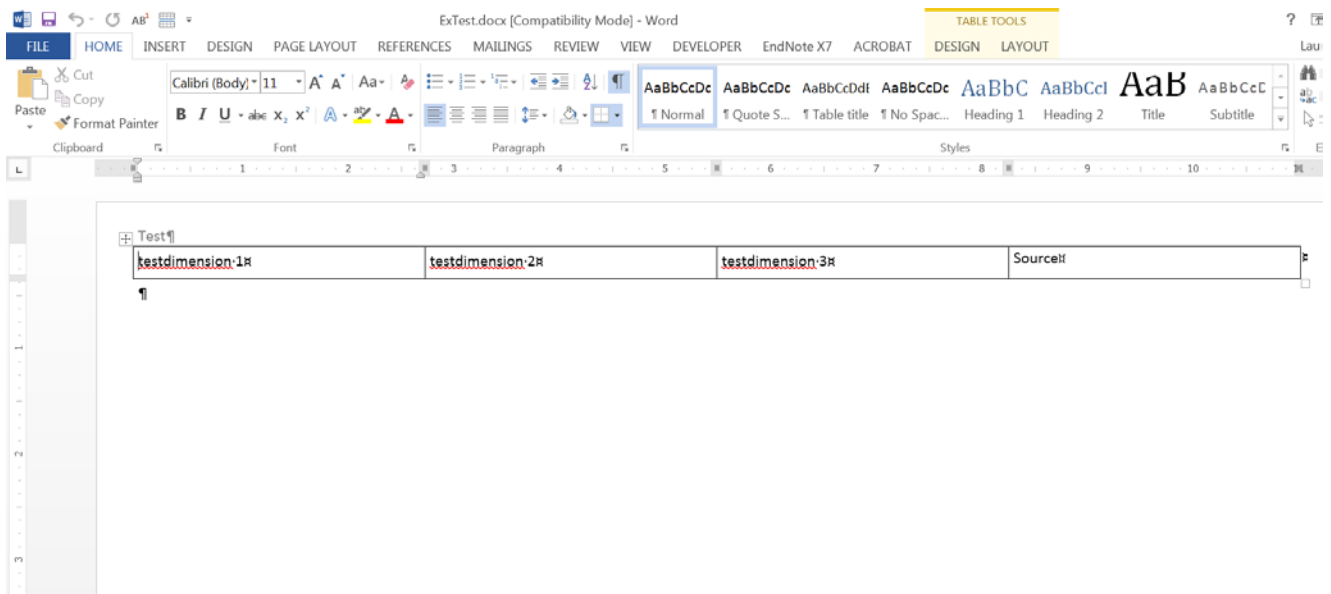
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If you now select 'OK' the macro "CreateMacro" conducts the following tasks:

- Writing the program for the macro – in our example for "Test",
- Creating or open the file "ExDefaults.docx" (for the default values) and enter the dimensions for which default values should be collected,
- Creating the file in which the extraction results are collected – in our example "ExTest.docx",
- Adding in the toolbar a button for the macro – in our example "Test",
- Saving of all work results, close the created files and delete intermediate products that are not necessary any more,
- Going back to the file "Start.docx".

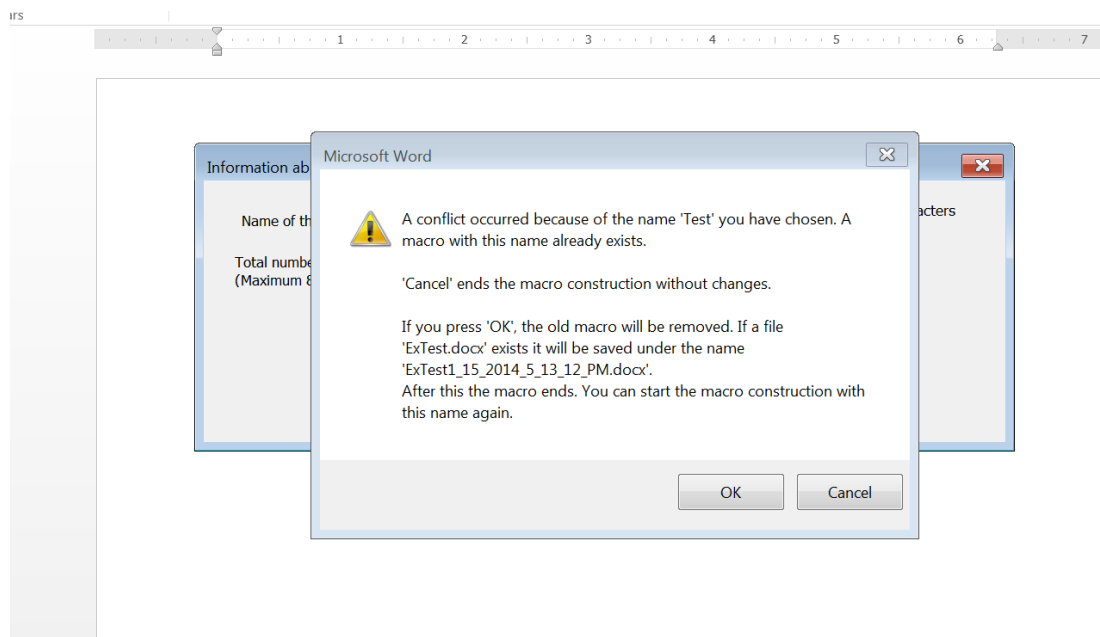
The macro construction is finished.

If you go now to your extraction directory (in our case: "MacroConstruction"), then you will find the new file "ExTest.docx" and "ExDefaults.docx". "ExTest.docx" contains a table with one row (heading row). "ExDefaults.docx" contains one or more tables, each of them consisting of the heading row.



4.3 If you want to change the constructed macro

If you want to add or remove dimensions or even an entire category –you have to repeat the whole procedure and remove the macro in all these cases. You can do that by creating a new macro with the same name as the macro you want to change/ remove. Now the programme offers you to remove the old macro. If you already have produced extraction results, these results will be saved in an extra file. This is done in the following dialog box:



If you choose 'OK' then the old macro including its button will be removed from the toolbar. The related file for the results will be stored under a name consisting of the present name and an identifier. The identifier is simply a character string, consisting of the present date and time on the computer. The file "ExDefaults.docx" will not be changed because other macros might use the list of default values. If you select 'Cancel', the macro construction is cancelled and your old macro remains unchanged.

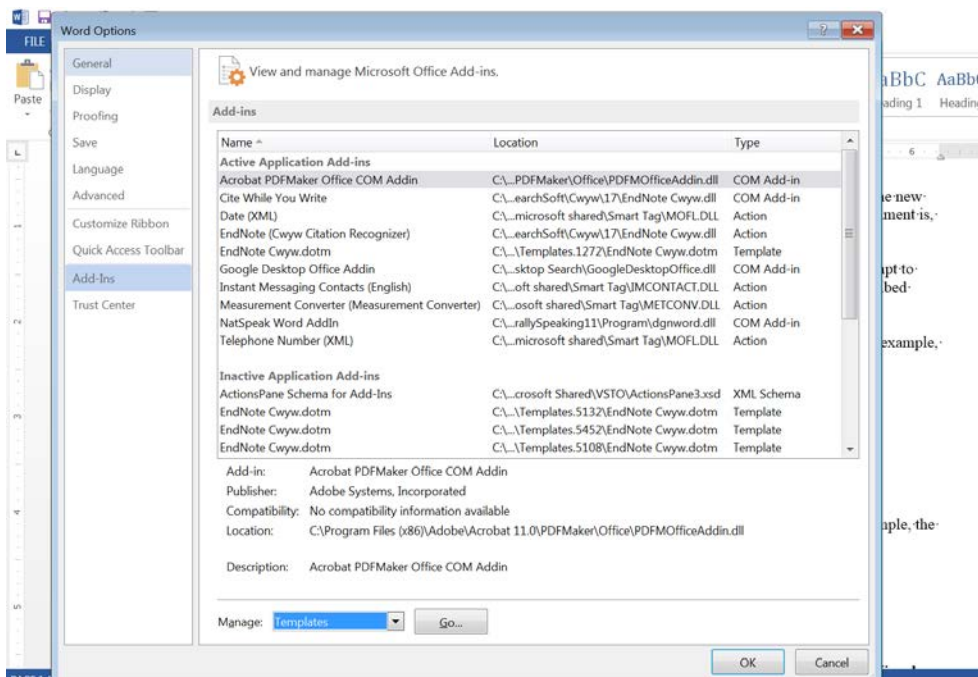
5. Preparation of the extraction

A couple of preparations are still needed. For applying the macros on one of your texts you must make sure that

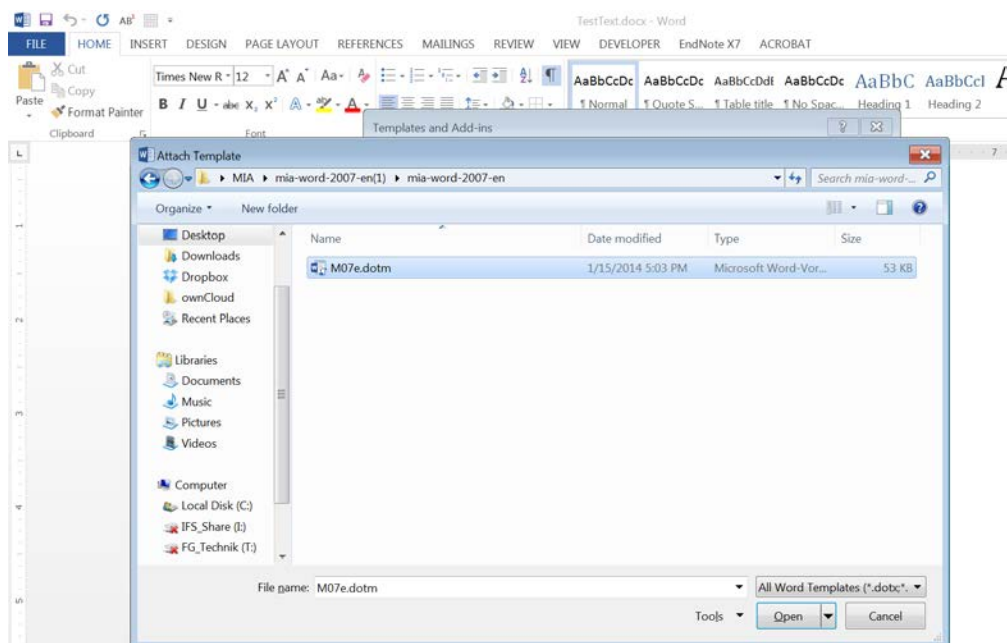
- the text,
- the document template "M.dotm",
- the file " ExDefaults.docx " and
- all extraction files "Ex???.docx" (???= name of the category)

are in one and the same file directory. If you plan to do the extraction in another directory as the one where you constructed the macros then you need to copy these files into that directory.

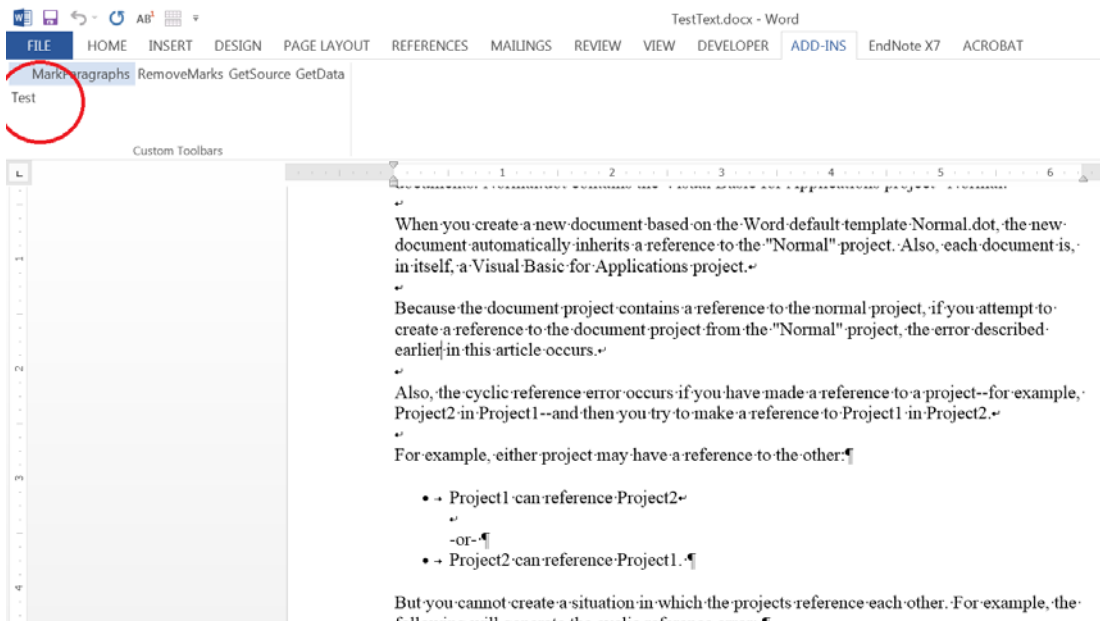
Now you must attach the text file from which information needs to be extracted with the document template "M.dotm". This is done by selecting "File", "Options", "Add-Ins". Look for "Manage" in the lower part and select "Templates", "Go.." (see picture below)



In the upper field, there is usually the document template "Normal.dot". You must click on the right button "Attach ..." to attach the document template "M.dot". Go to the directory in which you copied

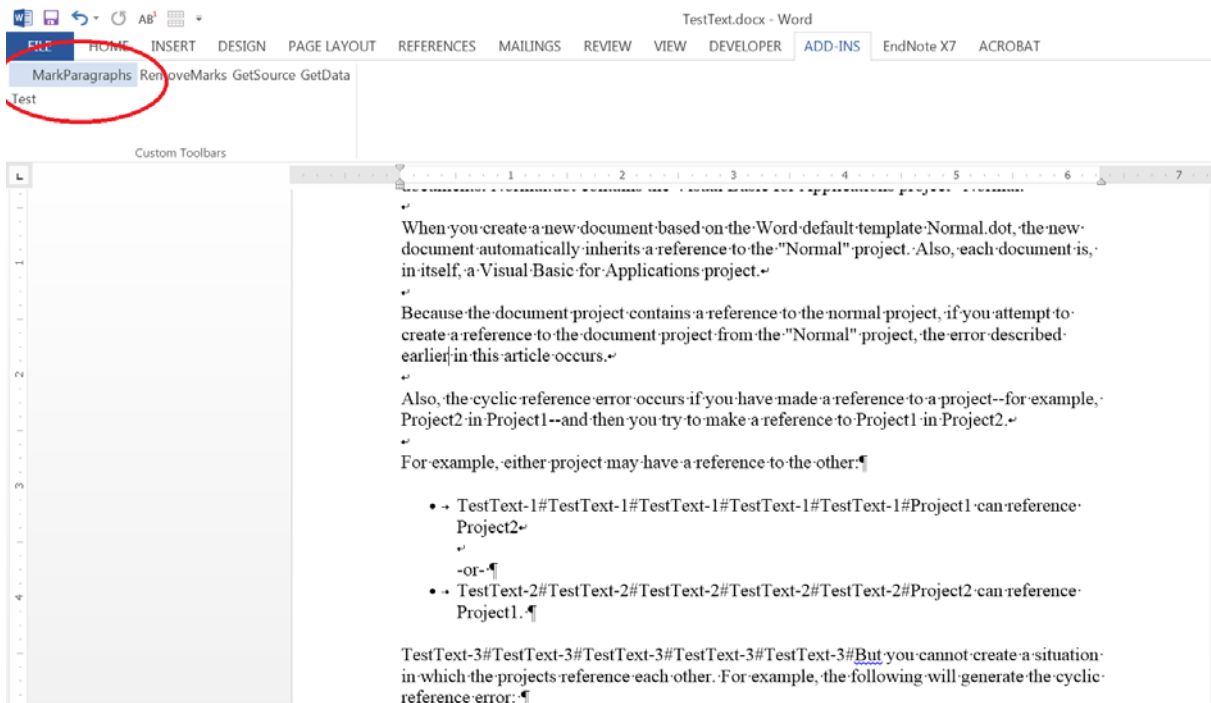


your files. There you select the document template and click 'Open' in the bottom right. Then the previous screen appears but now the name "M.dot" appears under 'document template'. Click on 'OK'. If you double-click on the toolbar item "Add-Ins" the created extraction macros should become visible.

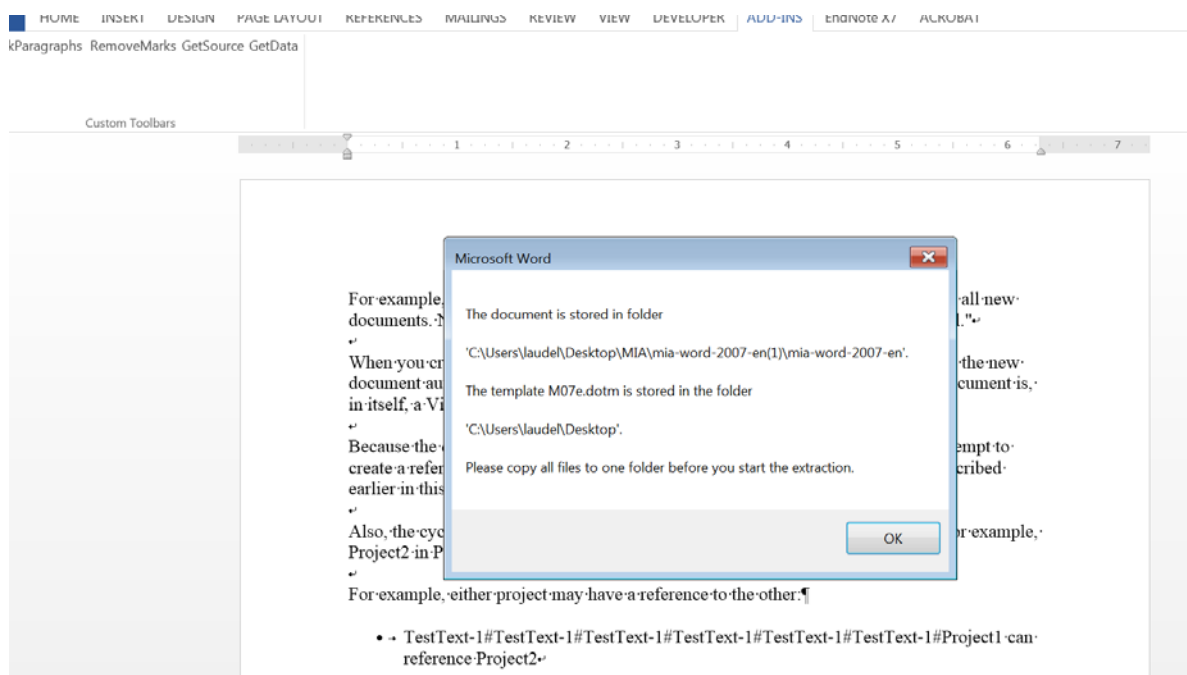


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Now you can start the extraction by applying the "MarkParagraphs" Macro:



If you changed the file directory after the macro construction, then you see the following screen the first time you start a macro:



This gives you the opportunity to stop the extraction if you would prefer to select another directory. If you select ,OK' that directory will be defined as the new directory. If you (after going back to the text) start the macro again, this screen does not show up again. Now, we can really start with the extraction.

6. The macros “RemoveMarks” and “GetSource”

With the macro “RemoveMarks” you can remove identifiers from texts which were wrongly marked. With the macro “GetSource” it is possible to find an extracted paragraph again in the original text. Therefore you open the extraction macro “Ex???.docx”, position the cursor on the source and click on the macro “GetSource”. The cursor must be positioned between the two backward slashes (“\”).

7. Errors

MIA is able to cope with all errors which we have found on our computers. This doesn't say much because each computer with its specific combination of software can produce different errors. If the macro stops because of an error you can only hope that the error does not occur again after running the macro again. Sometimes it helps to close WORD and start it again. Sometimes it helps to start the computer again. Sometimes nothing helps.

If the macro gets stuck and you see only the hour glass without something happening then you can interrupt the macro by pressing the ,Ctrl' and 'Break' button at the same time. But it's better to wait for a while – maybe the macro just needs longer on your computer.

You might contribute to minimise errors by trying to keep a tidy environment. WORD macros get very nervous if there are document templates with the same name in different directories and if you work successively in these directories. Try to keep your computer free from such legacies. Regularly delete old versions – especially if you copy the document template 'M.dot' and the auxiliary files into a new directory. If you cause errors we already experienced the macros give you helping hints. If you encounter new errors you may email us: grit.laudel@tu-berlin.de or jochen.glaser@ztg.tu-berlin.de.

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Version 2, June 1991

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