

Präsentation

BSF4ooRexx/java: Apache POI (OOXML4J): Microsoft Office - Cookbook (Nutshell Beispiele)

Wolfgang Eßl/h11717160

Business Information Systems Seminar

Heutiger
Inhalt

Apache POI

Projekt Seminar Arbeit

Examples

Diskussion

Was ist Apache POI?

Apache POI

- Freie Java-Programmbibliothek
- Apache Software Foundation
- HSSF/XSSF; HWPF/XWPF;
HSLF/XSLF; HSMF

Herangehensweise



INFORMATIONEN
SAMMELN

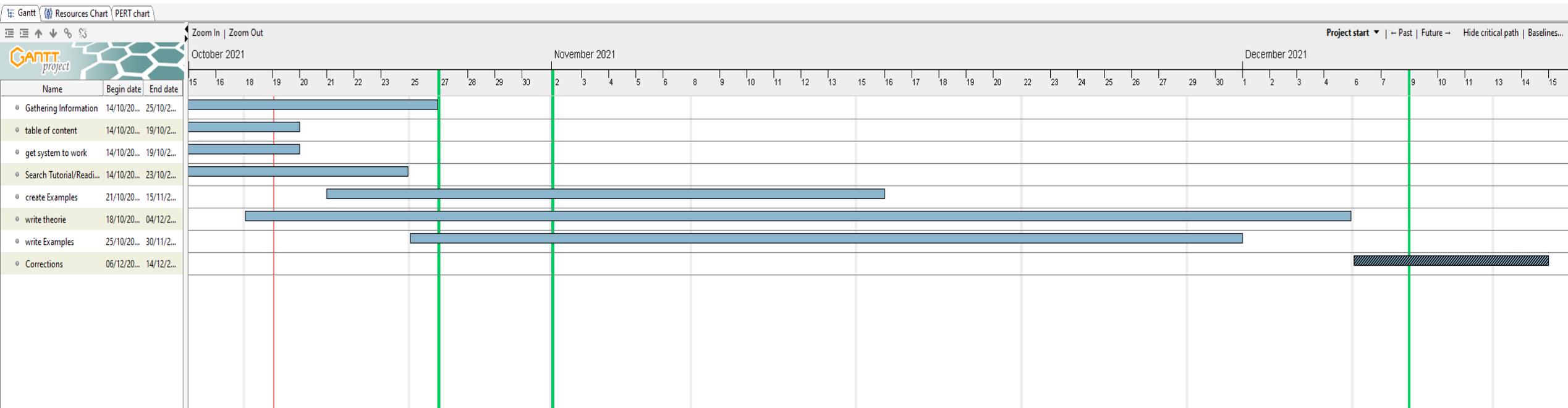


BEISPIELE ERSTELLEN



BEISPIELE
DOKUMENTIEREN

Project Timeline First Version



Project Timeline Final

GANTT
project

Name	Begin date	End date
• Gathering Information	14/10/2021	25/10/2021
• table of content	14/10/2021	19/10/2021
• get system to work	14/10/2021	19/10/2021
• Search Tutorial/Readings	14/10/2021	08/11/2021
• create Examples	21/10/2021	02/12/2021
• write theorie	18/10/2021	04/12/2021
• write Examples	20/11/2021	07/12/2021
• prepare presentation	13/12/2021	15/12/2021
• corrections	06/12/2021	14/12/2021

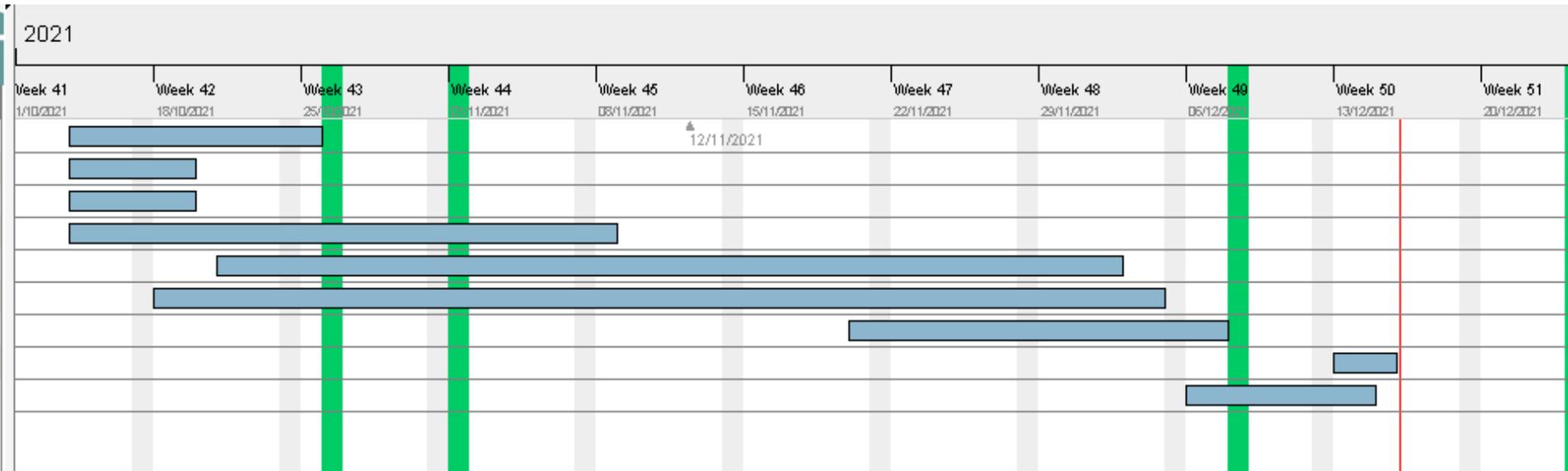




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Examples Apache POI

- XWPF package (Word)
- XSSF package (Excel)
- XSLF package (PowerPoint)

Installation

Java

ooRexx

BSF4ooRexx

Apache POI

.Jar files



XWPF
package
(Word)

```
3  --Create XWPF Object--
```

```
4  word=.bsf~new("org.apache.poi.xwpf.usermodel.XWPFDocument")
```

```
12 --Open an existing Word Document--
```

```
13 filename = directory()\headerfooter.docx"
```

```
14 msword=.bsf~new("java.io.FileInputStream", filename)
```

```
15 word=.bsf~new("org.apache.poi.xwpf.usermodel.XWPFDocument", msword)
```

```
18 --Save the file--
```

```
19 -----
```

```
20 --get current working path--
```

```
21 filename = directory()\headerfooter.docx"
```

```
22 --save file in current directory--
```

```
23 output=.bsf~new("java.io.FileOutputStream", filename)
```

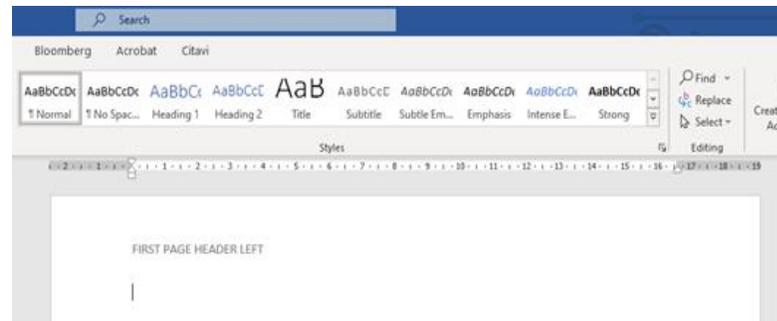
```
24 word~write(output)
```

```
25 --Needed for BSF4ooorex library--
```

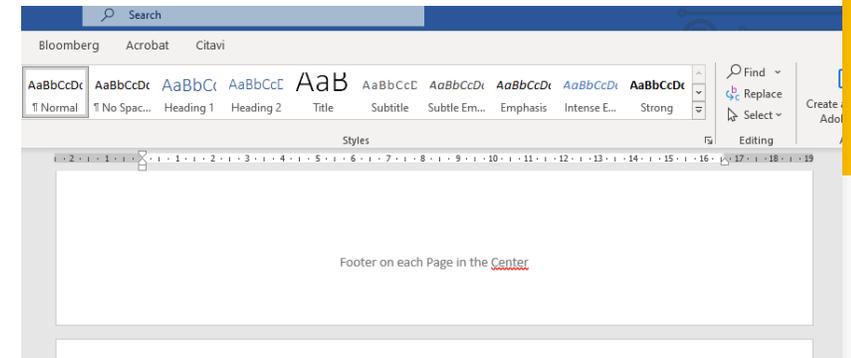
```
26 ::Requires BSF.CLS
```

Header/ Footer

```
19 --Header and Footer--  
20 -----  
21 --Load classes for Header and Footer types--  
22 .bsf~bsf.loadClass("org.apache.poi.wp.usermodel.HeaderFooterType", "HeaderFooterType")  
23 --Load classes for Paragraph settings--  
24 .bsf~bsf.loadClass("org.apache.poi.xwpf.usermodel.ParagraphAlignment", "ParagraphAlignment")  
25 --create Header object--  
26 Header=word~createHeader(.HeaderFooterType~FIRST)  
27 --create Paragraph and a Run + Paragraph Alignment--  
28 texthead=Header~createParagraph()  
29 texthead~setAlignment(.ParagraphAlignment~LEFT)  
30 runHead= texthead~createRun()  
31 --set Text at Position of the Runner--  
32 runHead~setText("FIRST PAGE HEADER LEFT ")
```

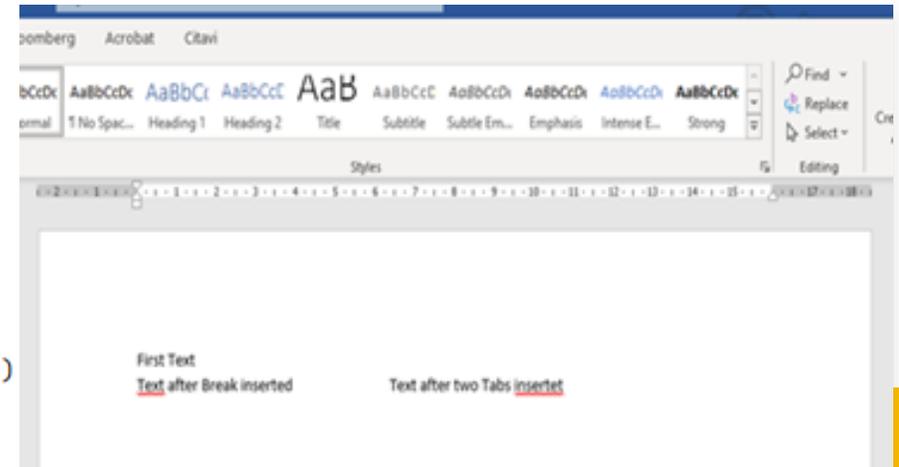


```
34 --create Footer object--  
35 Footer=word~createFooter(.HeaderFooterType~DEFAULT)  
36 --create Paragraph and a Run + Paragraph Alignment--  
37 textFooter=Footer~createParagraph()  
38 textFooter~setAlignment(.ParagraphAlignment~CENTER)  
39 runFooter= textFooter~createRun()  
40 --set Text at Position of the Runner--  
41 runFooter~setText("Footer on each Page in the Center")
```



Einfache Funktionen

```
67 --showing how to add a break and a Tab--
68 para=word~createParagraph()
69 Run=para~createRun()
70 Run~setText("First Text")
71 Run~addBreak()
72 Run~setText("Text after Break inserted")
73 Run~addTab()
74 Run~addTab()
75 Run~setText("Text after two Tabs inserted")
```



```
78 --get Paragraphs and Text--
79 getPara=word~getParagraphs()
80 getText=para~getText()
81 say getPara
82 say getText
```



Tabelle erzeugen

```
44 --create Table-  
45 -----  
46 --one empty table field--  
47 table=word~createTable()
```

```
48 --A Table of 2 Rows and 2 Cells--  
49 table=word~createTable(2,2)  
50  
51  
52 --Fill all created Fields--  
53 row1=tab~getRow(0)  
54 row1~getCell(0)~setText("First Row First Cell")  
55 row1~getCell(1)~setText("First Row Second Cell")  
56  
57 row2=tab~getRow(1)  
58 row2~getCell(0)~setText("Second Row First Cell")  
59 row2~getCell(1)~setText("Second Row Second Cell")
```

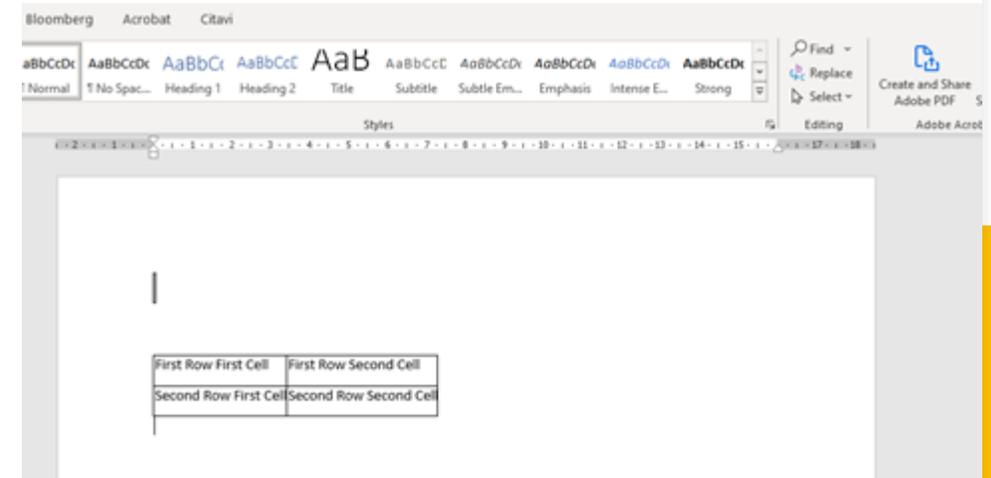
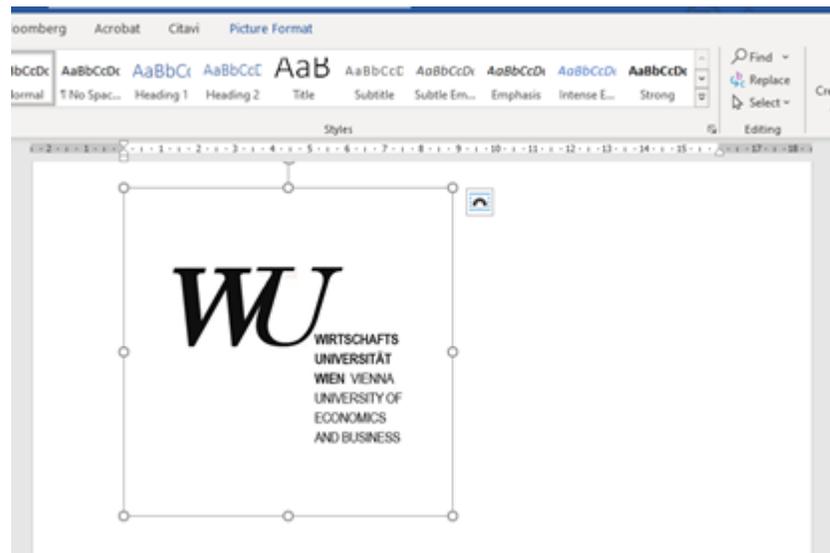


Foto einfügen

```
84 --add a Picture--
85 -----
86 --Load needed classes--
87 .bsf~bsf.loadClass("org.apache.poi.xwpf.usermodel.Document", "Document")
88 .bsf~bsf.loadClass("org.apache.poi.util.Units", "Units")
89 --get location of the Picture--
90 pathpic = directory()"\wu_logo_2020.jpeg"
91 --create FileInputStream Object--
92 pic=.bsf~new("java.io.FileInputStream", pathpic)
93 --Add Picture at Runner with chosen settings--
94 Run~addPicture(pic, .Document~Picture_Type_Jpeg, "wu_logo_2020.jpeg", .Units~toEmu(250), .Units~toEmu(250))
```





XSSF
package
(Excel)

```
110  --Create/Open Excel Document and save it--
111  -----
112  --Create XSSF Object--
113  msexcel=.bsf~new("org.apache.poi.xssf.usermodel.XSSFWorkbook")
114  --Create First Sheet--
115  sheet=msexcel~createSheet("First Sheet")

117  filename = directory()"\open.xlsx"
118  msexcel=.bsf~new("java.io.FileInputStream", filename)
119  excel=.bsf~new("org.apache.poi.xssf.usermodel.XSSFWorkbook", msexcel)

231  --Save the file--
232  --get current working path--
233  filename = directory()"\open.pptx"
234  --save file in current directory--
235  output=.bsf~new("java.io.FileOutputStream", filename)
236  powerpoint~write(output)
237  --Needed for BSF4ooorex library--
238  ::Requires BSF.CLS
```

Einfache Funktionen

```
124 --write value in Cell--
125 excel=.bsf~new("org.apache.poi.xssf.usermodel.XSSFWorkbook")
126 sheet=excel~createSheet("basics")
127 --Create row and Cells--
128 Row0=sheet~createRow(0)
129 Cell0=Row0~createCell(0)~setCellValue("A")
130 Cell1=Row0~createCell(1)~setCellValue("B")
131 Cell2=Row0~createCell(2)~setCellValue("C")
132 Cell3=Row0~createCell(3)~setCellValue("D")
```

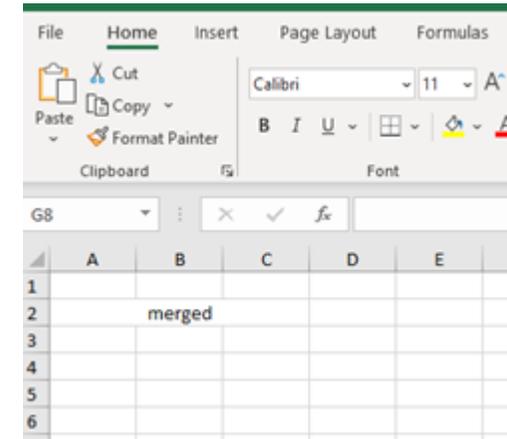
```
141 --get acces to Sheet at Position 0--
142 sheet=excel~getSheetAt(0)
143 --get Row and Cell--
144 abfrage=sheet~getRow(1)~getCell(0)
145 --get Value--
146 abfragewert=abfrage~getRowValue()
147 say abfragewert
149 --get last Row--
150 lastrow=sheet~getLastRowNum()
```

```
C:\Users\impr\OneDrive\Documents\... -p1).PEXX
10
```

	A	B	C	D	E	F
1	A	B	C	D		
2	10	100	1000	10000		
3	20	200	2000	20000		
4	30	300	3000	30000		
5						
6						
7						

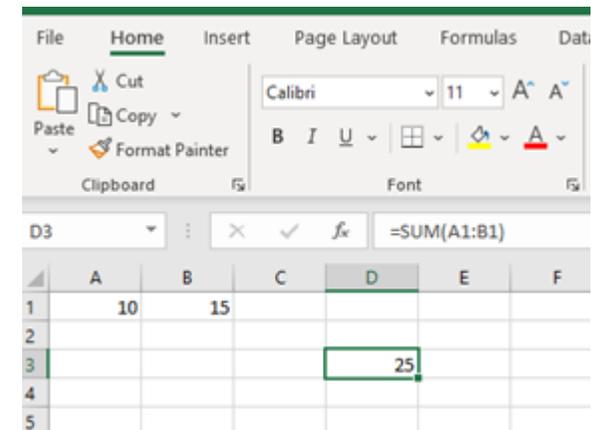
Einfache Funktionen

```
151 --hide a cell--
152 getheight=Row~getZeroHeight()
153 Row~setZeroHeight(1)
154 -- Get Height of a Row--
155 heighth=Row~getHeight() --default = 300
156 heighth=Row~setHeight(200)
157 -- unhide Row--
158 Row~setZeroHeight(0)
```



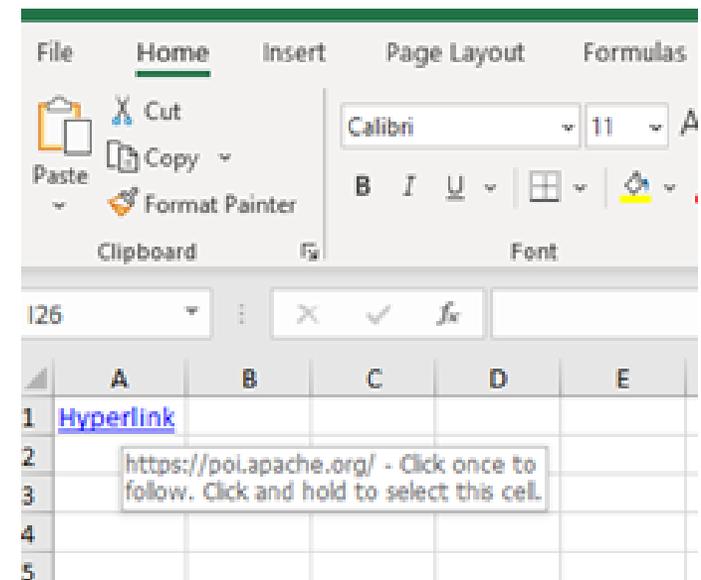
```
159 --merge Cells--
160 .bsf~bsf.importClass("org.apache.poi.ss.util.CellRangeAddress", "CellRangeAddress")
161 range=.CellRangeAddress~new(1, 1, 0, 2)
162 merger=sheet~addMergedRegion(range)
```

```
164 --Set Formula--
165 Cell=sheet~createRow(2)~createCell(3)
166 Cell~setCellFormula("SUM(A1:B1)")
```



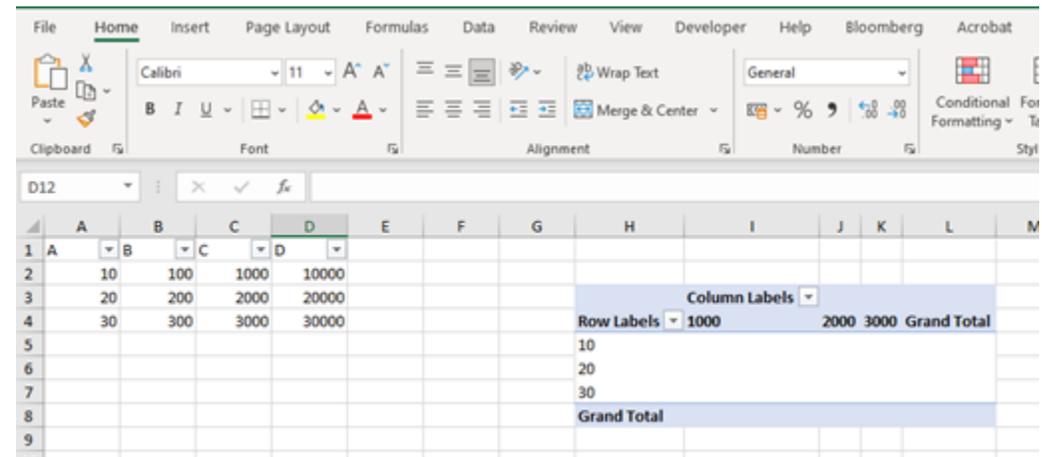
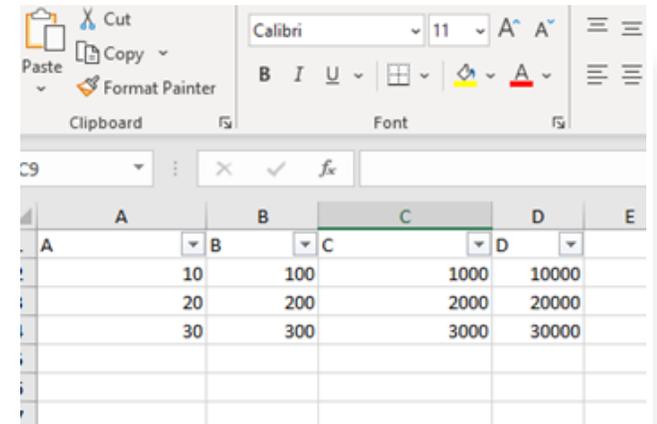
Hyperlink

```
170 --load needed classes--
171 .bsf~bsf.loadClass("org.apache.poi.ss.usermodel.CreationHelper", "CreationHelper")
172 .bsf~bsf.loadClass("org.apache.poi.ss.usermodel.CellStyle", "CellStyle")
173 .bsf~bsf.loadClass("org.apache.poi.ss.usermodel.Font", "Font")
174 .bsf~bsf.loadClass("org.apache.poi.ss.usermodel.Hyperlink", "Hyperlink")
175 .bsf~bsf.loadClass("org.apache.poi.ss.usermodel.IndexedColors", "IndexedColors")
176 .bsf~bsf.loadClass("org.apache.poi.common.usermodel.HyperlinkType", "HyperlinkType")
177 --create Helpers--
178 helper=excel~getCreationHelper()
179 hlinkstyle=excel~createCellStyle()
180 font=excel~createFont()
181 font~setUnderline(.Font~U_SINGLE)
182 font~setColor(.IndexedColors~BLUE~getIndex())
183 hlinkstyle~setFont(font)
184 link=helper~createHyperlink(.HyperlinkType~URL)
185 link~setAddress("https://poi.apache.org/")
186 --create Cell and set Hyperlink--
187 Row0=sheet~createRow(0)
188 Cell=Row0~createCell(0)
189 Cell~setCellValue("Hyperlink")
190 Cell~setHyperlink(link)
191 Cell~setCellStyle(hlinkstyle)
```



Filter / Pivot Tabelle

```
193 --set Filter--
194 sheet~setAutoFilter(.CellRangeAddress~valueOf("A1:D4"))
-----
196 --set Pivot Table--
197 -----
198 --load needed classes--
199 .bsf~bsf.importClass("org.apache.poi.ss.util.CellReference", "CellReference")
200 .bsf~bsf.importClass("org.apache.poi.ss.util.AreaReference", "AreaReference")
201 .bsf~bsf.importClass("org.apache.poi.ss.SpreadsheetVersion", "SpreadsheetVersion")
202 --set Reference and Posiotion of the Pivot Tbable--
203 position=.CellReference~new("H3")
204 source=.AreaReference~new("A1:D4",.SpreadsheetVersion~EXCEL2007)
205 --Add Pivot Table and add Labels--
206 Pivot=sheet~createPivotTable(source, position)
207 Pivot~addRowLabel(0)
208 Pivot~addCollabel(2)
```



XSLF package (PowerPoint)

```
221 --Create an XSLF Object--  
222 powerpoint=.bsf~new("org.apache.poi.xslf.usermodel.XMLSlideShow")  
223 --create a empty Slide--  
224 slide=powerpoint~createSlide()
```

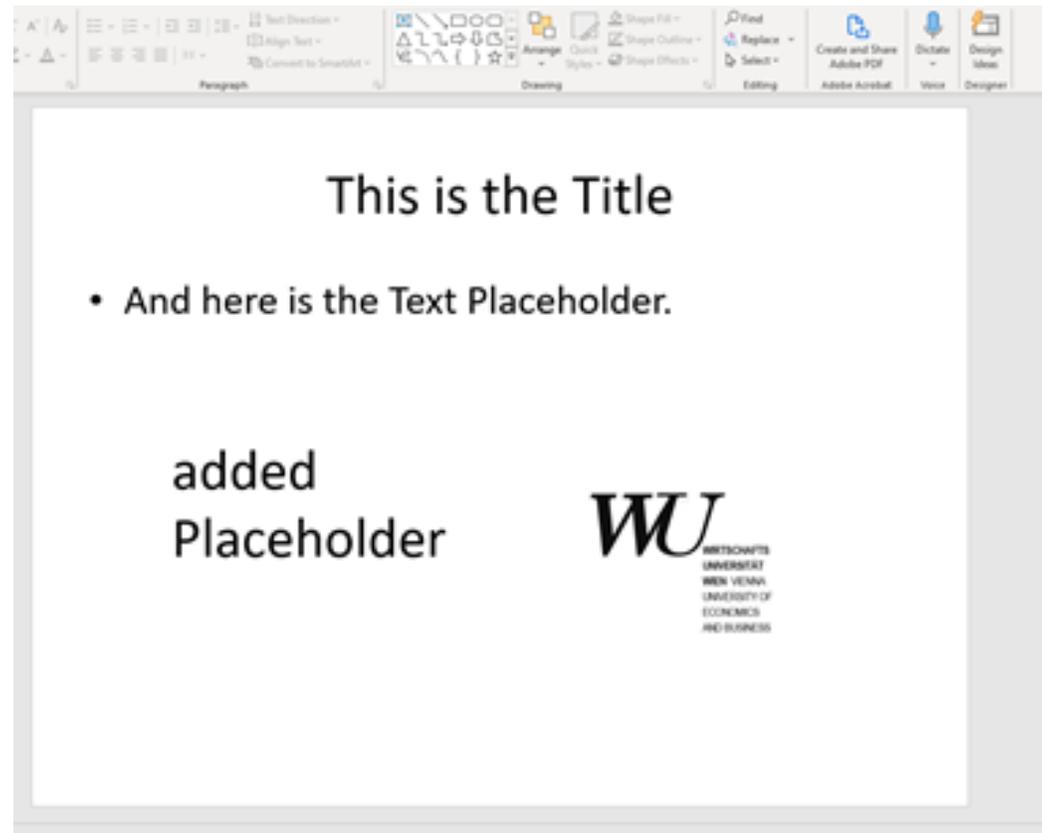
```
226 --Open a PowerPoint--  
227 filename = directory()"\open.pptx"  
228 mssp=.bsf~new("java.io.FileInputStream", filename)  
229 powerpoint=.bsf~new("org.apache.poi.xslf.usermodel.XMLSlideShow", mssp)
```

```
231 --Save the file--  
232 --get current working path--  
233 filename = directory()"\open.pptx"  
234 --save file in current directory--  
235 output=.bsf~new("java.io.FileOutputStream", filename)  
236 powerpoint~write(output)  
237 ⚠️--Needed for BSF4ooorex library--  
238 :::Requires BSF.CLS
```

Einfache Funktionen

```
25 --import needed Classes--
26 .bsf~bsf.importClass("org.apache.poi.xslf.usermodel.SlideLayout", "SlideLayout")
27 .bsf~bsf.importClass("org.apache.poi.xslf.usermodel.XSLFSlideMaster", "XSLFSlideMaster")
28 .bsf~bsf.importClass("org.apache.poi.xslf.usermodel.XSLFSlideLayout", "XSLFSlideLayout")
29
30 --Create a specific Slide--
31 --Create an XSLF Object--
32 powerpoint=.bsf~new("org.apache.poi.xslf.usermodel.XMLSlideShow")
33 slideMaster =powerpoint~getSlideMasters()~get(0)
34 Layout = slideMaster~getLayout(.SlideLayout~TITLE_AND_CONTENT)
35 slide=powerpoint~createSlide(Layout)
249 --Load Classes--
250 .bsf~bsf.importClass("java.awt.Rectangle", "Rectangle")
251 .bsf~bsf.importClass("org.apache.poi.sl.usermodel.Placeholder", "Placeholder")
252 --Create Placeholder and fill it with Text--
253 shape=slide~createTextBox()
254 shape~setPlaceholder(.Placeholder~TITLE)
255 shape~setText("added Placeholder")
256 range=.Rectangle~new(100,250,250,120)
257 shape~setAnchor(range)
259 --Add Picture--
260 -----
261 --Load Classes--
262 PicType=bsf.importClass("org.apache.poi.sl.usermodel.PictureData$PictureType")
263 --Create InputFile for Picture--
264 picpath = directory()"\wu_logo_2020.jpeg"
265 image=.bsf~new("java.io.FileInputStream", picpath)
266 --Add Picture--
267 addpic=powerpoint~addPicture(image, PicType~JPEG)
268 createimage=slide~createPicture(addpic)
269 createimage~setAnchor(.Rectangle~new(400, 250, 200, 200))
```

Einfache Funktionen



Probleme/Learnings



ZURECHTFINDEN IN
DER API



AM ANFANG VIELE
FEHLER



ZEITMANAGEMENT

Weitere Schritte

- Speichern in anderen Formaten
- Files ineinander einbinden
- Mehr Entdecken

Fragen? / Diskussion
