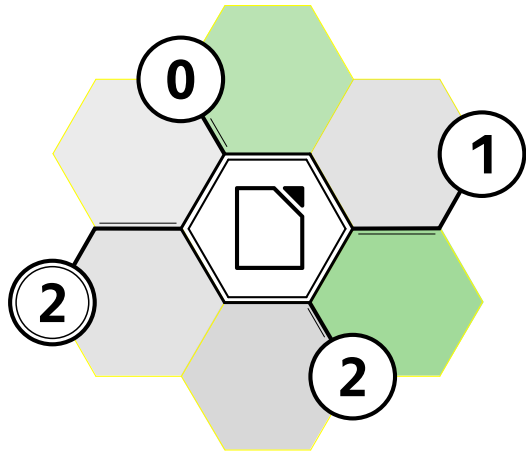


# LibreOffice SDK Examples Overhaul

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The Document Foundation (TDF)



**LibreOffice**  
Conference 2021

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# **Self Introduction**

# Self Introduction

- **I am Hossein Nourikhah**
  - Ph.D. in Information Technology
  - Developer Community Architect for The Document Foundation (TDF)
  - Developer, University Lecturer and FOSS Advocate
- **Do you want to get started in LibreOffice development?**
  - Contact me!
    - **Email:** [hossein@libreoffice.org](mailto:hossein@libreoffice.org)
    - **Wiki:** <https://wiki.documentfoundation.org/User:Hossein>
    - **IRC:** hossein at libreoffice-dev room in LiberaChat Network  
<irc://irc.libera.chat/#libreoffice-dev>

# **Introduction to LibreOffice SDK**

# Use Cases of LibreOffice SDK

- **Office format applications**
  - Writing applications that work with office formats
- **Extensions**
  - Writing extensions that add functionality to the LibreOffice
- **Convertors**
  - Writing convertors that read/write different formats and convert various formats

# Programming Languages

- Python
- C++
- Java
- LibreOffice Basic
- .NET languages
  - C#
  - VB.NET
- OLE/ActiveX

# **LibreOffice SDK Examples**



# What are the examples?

- Examples showcase the LibreOffice SDK capabilities
- Written are in many languages
  - Mostly in Java
  - Some are in C++, Python and Basic
  - They work with LibreOffice through API
  - LibreOffice process should be active and listen for the incoming connections
  - Not all of the examples are LibreOffice extensions

# Where to find them?

- Distributed both with the LibreOffice source code and the SDK installed alongside binaries
- SDK examples inside source code: [git.libreoffice.org](https://git.libreoffice.org)
  - `core/odk/examples/`
  - `sdk-examples/`
- SDK examples inside LibreOffice/SDK installation
  - `sdk/examples`

# What do they do?

- Various Things
- C++ Examples
  - DocumentLoader: Loads a sample Document
  - Draw: Creates drawings inside LibreOffice Draw
    - <https://git.libreoffice.org/core/+refs/heads/master/odk/examples/cpp/>
  - Converter: Convert ODT to PDF
    - <https://github.com/hosseinn/loconverter>

# How to compile and run on Linux?

- Linux
  - Run LibreOffice
    - `libreoffice7.2 --accept=socket,port=2083;urp;`
  - Go to SDK folder
    - `cd /opt/libreoffice7.2/sdk/`
  - Setup environment
    - `./setsdkenv_unix`
  - Go to example folder and make
    - `cd examples/cpp/DocumentLoader && make`
  - Run example
    - `make DocumentLoader.run`

# Setup environment for Linux

```
$ ./setsdkenv_unix
```

```
*****  
*  
* SDK environment is prepared for Linux  
*  
* SDK = /home/hossein/Projects/libreoffice/core/instdir/sdk  
* Office = /home/hossein/Projects/libreoffice/core/instdir/sdk/..  
* Make = /usr/bin  
* Zip = /usr/bin  
* cat = /usr/bin  
* sed = /usr/bin  
* C++ Compiler = /usr/bin  
* Java = /usr  
* SDK Output directory = /home/hossein/libreoffice7.2_sdk  
* Auto deployment = YES  
*  
*****
```

# How to compile and run on Windows

- Windows
  - Run LibreOffice
    - `soffice.exe "--accept=socket,port=2083;urp;"`
  - Start VS 2019 command prompt, go to SDK folder
    - `cd /d c:\progra~1\Libreoffice\sdk`
  - Setup environemnt (second line is sometimes needed)
    - `set PATH=%PATH%;c:\cygwin64\bin && setsdkenv_windows.bat`
    - `SET URE_BOOTSTRAP=vnd.sun.star.pathname:C:/Progra~1/LibreOffice/program/fundamental.ini`
  - Go to example folder and make
    - `cd examples\cpp\DocumentLoader && make`
  - Run example
    - `make DocumentLoader.run`

# Setup environment for Windows

```
> setsdkenv_windows.bat
```

```
*****
```

```
*
```

```
* SDK environment is prepared for Windows
```

```
*
```

```
* SDK = c:\progra~1\Libreoffice\sdk
```

```
* Office = c:\progra~1\Libreoffice
```

```
* Make = C:\cygwin64\bin
```

```
* Zip = C:\cygwin64\bin
```

```
* cat = C:\cygwin64\bin
```

```
* sed = C:\cygwin64\bin
```

```
* C++ Compiler = C:\Progra~2\Micros~2\2019\Community\VC\Tools\MSVC\14.29.30037\bin\Hostx64\x64\
```

```
* C# and VB.NET compilers = C:\Windows\Microsoft.NET\Framework64\v2.0.50727
```

```
* Java =
```

```
* Special Output directory = c:\libreoffice7.2_sdk
```

```
* Auto deployment = YES
```

```
*
```

```
*****
```

# Requirements

- LibreOffice + SDK
- C++ Compiler
- Other dependencies (Cygwin is needed for Windows)
  - Make
  - Zip
  - cat
  - sed
  - Shell scripts to set environment variables



# **Using Modern Build Tools**

# What if...

- What if requirement would be only:
  - LibreOffice + SDK
  - C++ Compiler + CMake (or qmake)
- >>>> **Yes, it is possible!** <<<<
- You can use IDE of your choice for the development
  - Visual Studio / VSCode / Qt Creator, Xcode, ... support CMake natively
- You can't rely on shell scripts to setup things for you anymore!
  - Generating headers / Setting up environment variables / Running the application will be done by CMake/qmake

# Important Environment Variables

- export **SAL\_USE\_VCLPLUGIN**=gen
- export **UNO\_PATH**=/opt/libreoffice7.2/program
- export  
**URE\_BOOTSTRAP**=vnd.sun.star.pathname:/opt/libreoffice7.1/program/fundamentalrc

**Demo...**

# **Future Works**

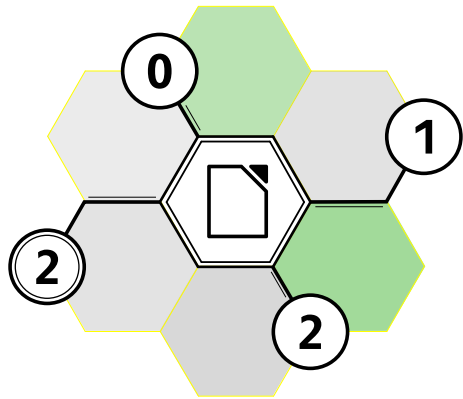
# Road Ahead

- This was only a proof of concept
- Things to do
  - Port other examples to different Languages
    - C++
    - Java
    - Python
  - Defined as **EasyHacks**
    - You can help!
  - Add qmake/CMake support for other examples

# Recommended Readings

- Java LibreOffice Programming (JLOP), Dr. Andrew Davison
  - <https://fivedots.coe.psu.ac.th/~ad/jlop/>
- LibreOffice API Documentation
  - <https://api.libreoffice.org/>
- LibreOffice Development Tools
  - <https://api.libreoffice.org/docs/tools.html>
- LibreOffice Extensions Website
  - <https://extensions.libreoffice.org/>





# LibreOffice

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# Thank You



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