From extension to core

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I have no idea what I'm doing
gifbin.com

Interfaces, Services and Implementations

A quick race through some UNO concepts ...

Interfaces, Services and Implementations

- ***Interfaces*** say what you can do with a UNO-thing
  - usually named com::sun::star...
  - and then a name prefixed with X

- ***Services*** promise to provide a set of Interfaces
  - usually named com::sun::star...
  - and then a name not prefixed with X

- ***Implementations*** can provide a service or a set of Interfaces
  - usually named … inconsistently
  - have some some real core code behind it

XCargoStorage

XTransport

Lorry service

- still abstract
- implements XTransport and XCargoStorage

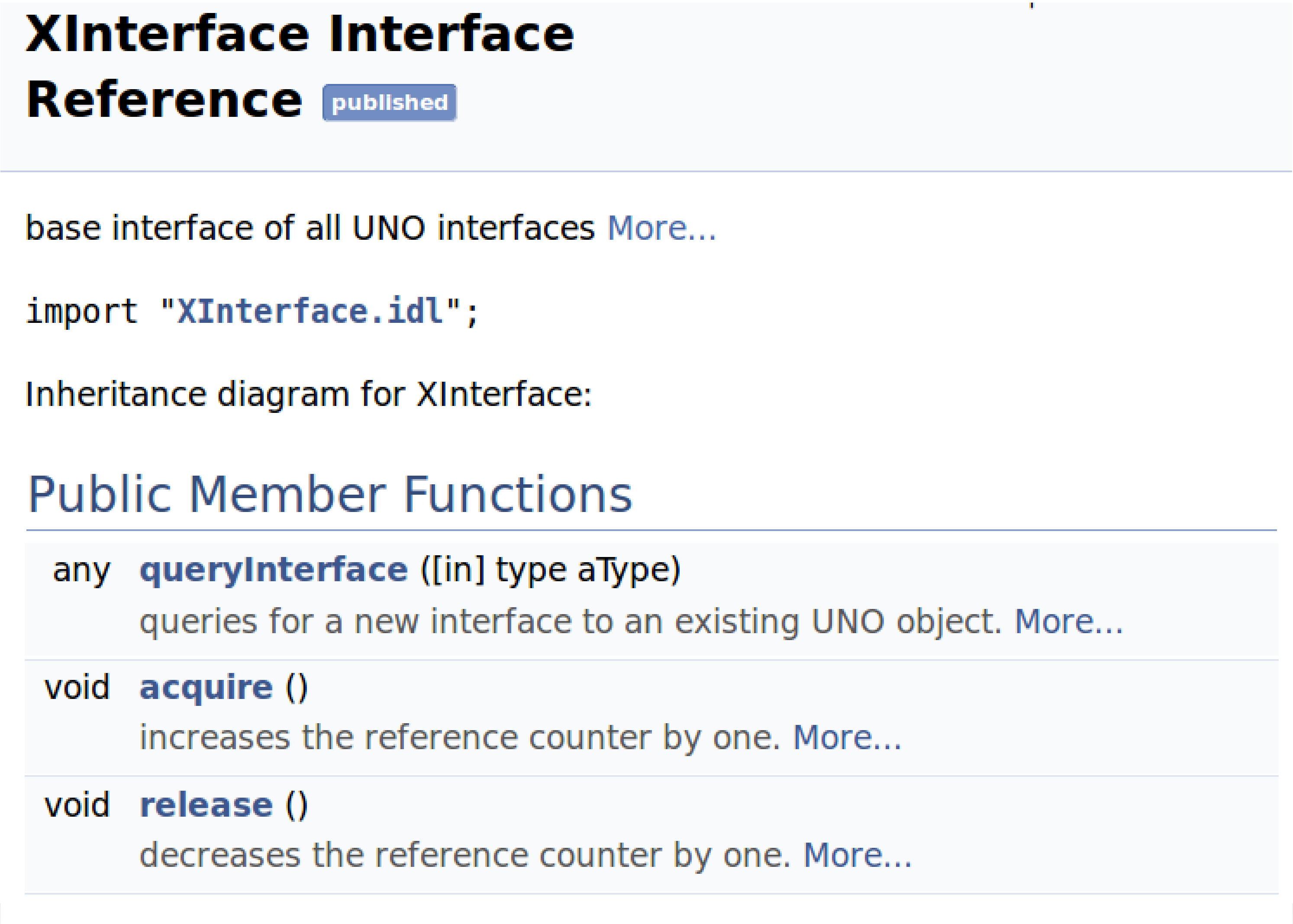
Lorry implementation

- concrete
- implements a service
- has some real code behind it

UNO Runtime Reflection

How to find out what kind of UNO thing you are holding ...

XInterface



XInterface Interface Reference published

base interface of all UNO interfaces More...

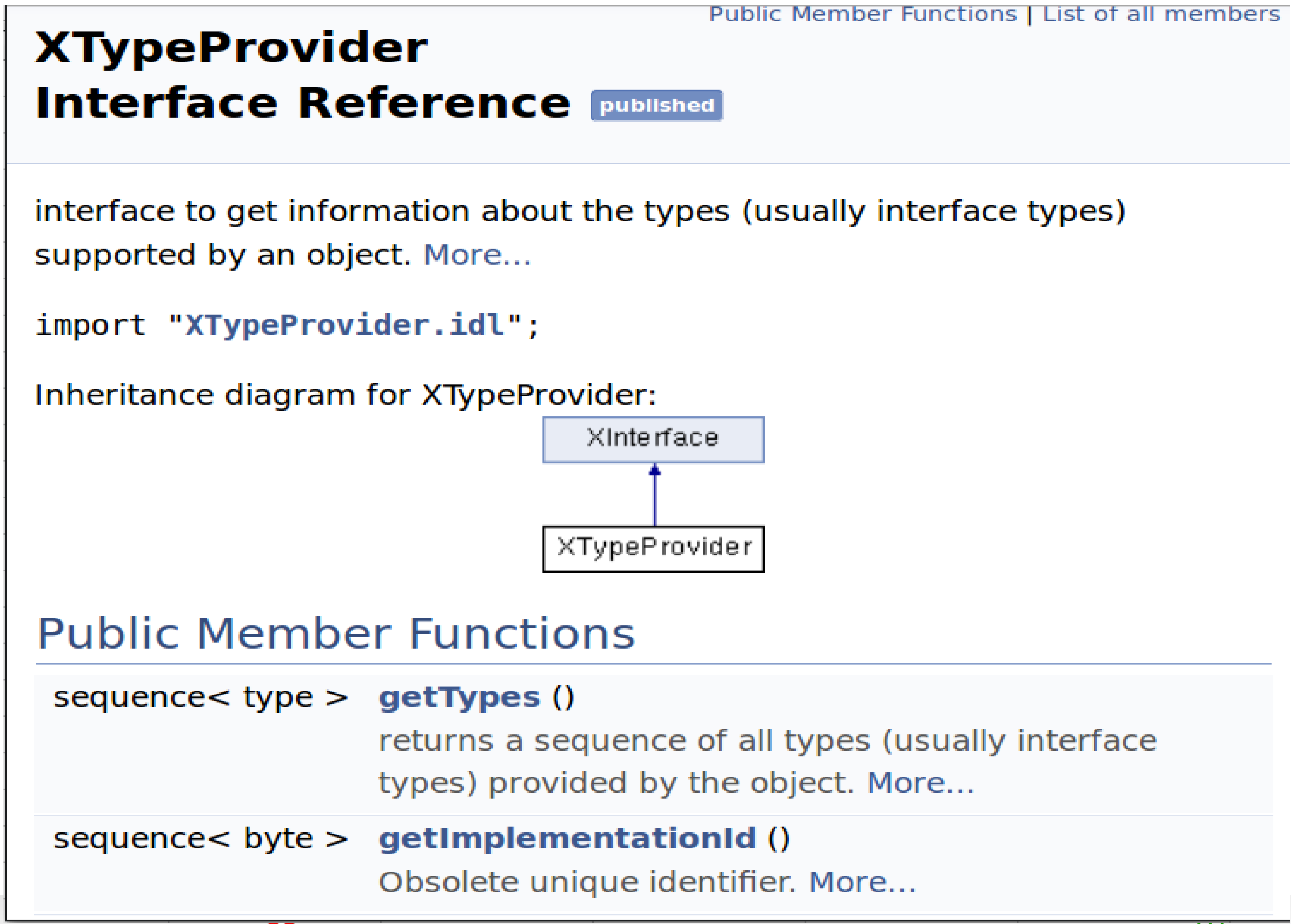
```
import "XInterface.idl";
```

Inheritance diagram for XInterface:

Public Member Functions

any	**queryInterface** ([in] type aType) queries for a new interface to an existing UNO object. More...
void	**acquire** () increases the reference counter by one. More...
void	**release** () decreases the reference counter by one. More...

XTypeProvider



Public Member Functions | List of all members

XTypeProvider Interface Reference published

interface to get information about the types (usually interface types) supported by an object. More...

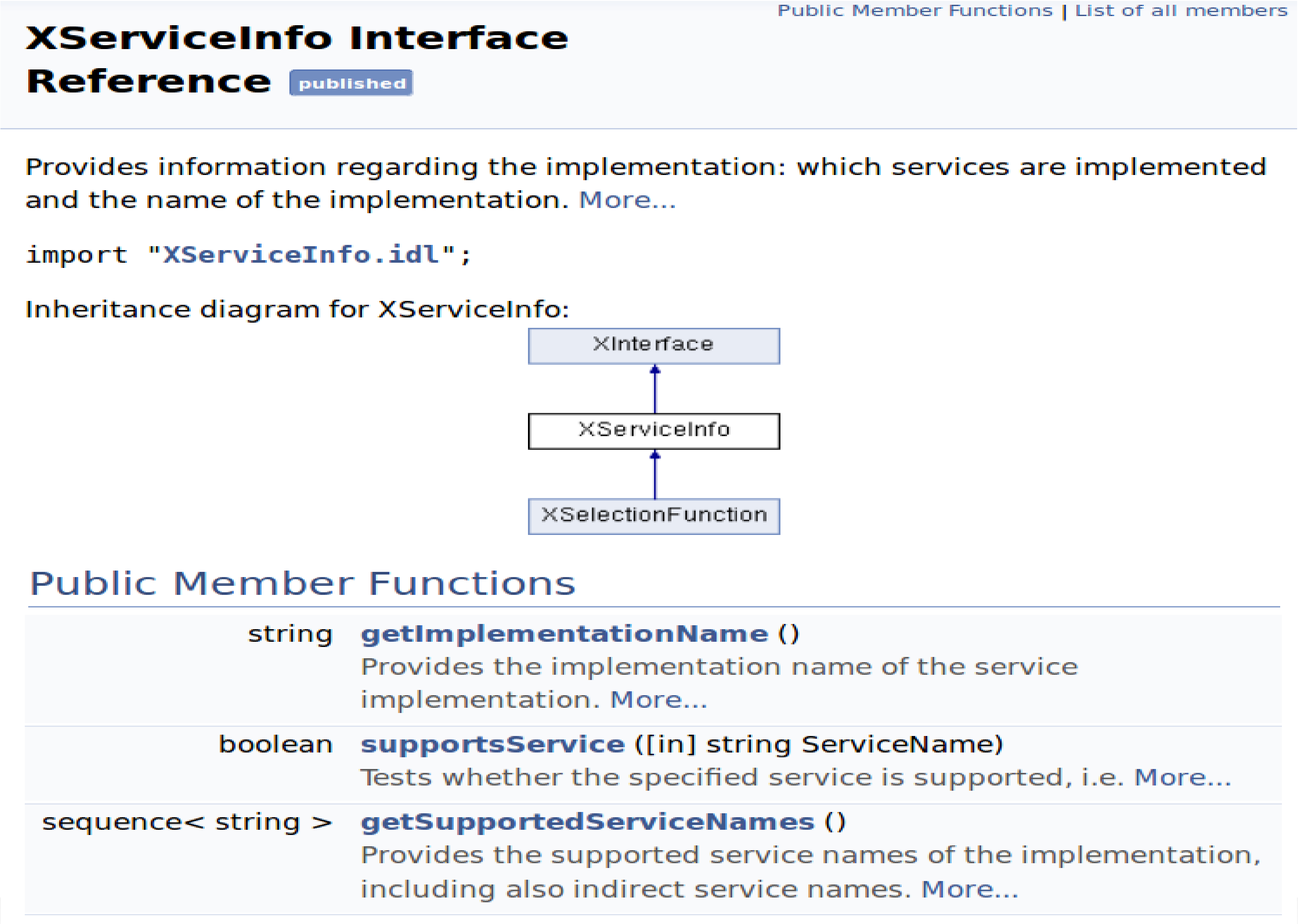
```
import "XTypeProvider.idl";
```

Inheritance diagram for XTypeProvider:

Public Member Functions

sequence< type >	**getTypes** () returns a sequence of all types (usually interface types) provided by the object. More...
sequence< byte >	**getImplementationId** () Obsolete unique identifier. More...

XServiceInfo



Public Member Functions | List of all members

XServiceInfo Interface Reference published

Provides information regarding the implementation: which services are implemented and the name of the implementation. More...

```
import "XServiceInfo.idl";
```

Inheritance diagram for XServiceInfo:

XInterface

XServiceInfo

XSelectionFunction

Public Member Functions

string	**getImplementationName** () Provides the implementation name of the service implementation. More...
boolean	**supportsService** ([in] string ServiceName) Tests whether the specified service is supported, i.e. More...
sequence< string >	**getSupportedServiceNames** () Provides the supported service names of the implementation, including also indirect service names. More...

Introducing the css.script.theServiceDocumenter singleton

Getting to the UNO documentation from your extension or script quickly ...

TheServiceDocumenter.showServiceDocs(...)

- [attribute] string ServiceBaseUrl;
- void showServiceDocs([in] com::sun::star::lang::XServiceInfo xService);

- opens documentation for all services supported by this implementation in a browser

TheServiceDocumenter.showInterfaceDocs(...)

- [attribute] string ServiceBaseUrl;
- void showServiceDocs([in] com::sun::star::lang::XTypeProvider xTypeProvider);

- opens documentation for all interfaces (types) supported by this implementation in a browser

Example Ad-hoc StarBasic

```
TheServiceDocumenter =
    GetDefaultContext().getValueByName(
        "/singletons/com.sun.star.util.theServiceDocumenter")

' old style reflection helpers
MsgBox(TheServiceDocumenter.Dbg_Methods)
MsgBox(TheServiceDocumenter.Dbg_Properties)
MsgBox(TheServiceDocumenter.Dbg_SupportedInterfaces)

' using the Service Documenter
TheServiceDocumenter.showServiceDocs(ThisComponent)
'TheServiceDocumenter.showInterfaceDocs(ThisComponent)
```

WIP: using the css.script.theServiceDocumenter singleton for finding core implementations

Getting to the C++ documentation of your implementation from your extension or script quickly ...

The old manual ways:

- ad-hoc: Just search for the implementation name on http://opengrok.libreoffice.org
  - lots of clutter from testcode etc. though
- somewhat more reliable: finding implementation in .component files, then find the implemenation in the cxx files of that library
- best solution: leak the information with a clang plugin triggering on getImplementationName(..)

Finding implementation via .component files

```
for f in `git ls-tree -r --name-only HEAD|grep '.component$'`
do
    grep 'implementation name' $f|nl -s ",$f,"
done > componentgrep.csv
```

- In the second row, we then find the path of the component file
- In the third row, we then find the implemenation name
- thus we can find the ${module}/Library_${libname}.mk for each implementation and the cxx files where it could be implemented

clang, the Ultimate:

- best solution: leak the information with a clang plugin triggering on getImplementationName(..)

- There might be some cases where the implementation name is dynamically generated
  - That likely a bad idea anyway, so fix that then
  - (or worst case: fallback on the scripted solution via component files)

Example Ad-hoc StarBasic

```
TheServiceDocumenter =
    GetDefaultContext().getValueByName(
        "/singletons/com.sun.star.util.theServiceDocumenter")

' old style reflection helpers
MsgBox(TheServiceDocumenter.Dbg_Methods)
MsgBox(TheServiceDocumenter.Dbg_Properties)
MsgBox(TheServiceDocumenter.Dbg_SupportedInterfaces)

' using the Service Documenter
TheServiceDocumenter.CoreBaseUrl =
    "http://people.canonical.com/~bjoern/implref/5.1/"
TheServiceDocumenter.showCoreDocs(ThisComponent)
```

- WIP: only works for SwXTextDocument for now
- Opens http://docs.libreoffice.org/sw/html/classSwXTextDocument.html

How should the Core Documentation Reference work in the end?

- It just opens
  “{$CoreBaseUrl}/{$ImplementationName}”
  in a browser
- and the URLs at ${CoreBaseUrl} are just statically generated redirects to http://docs.libreoffice.org
- (possibly we could also link to github or opengrok) later

Thank you!

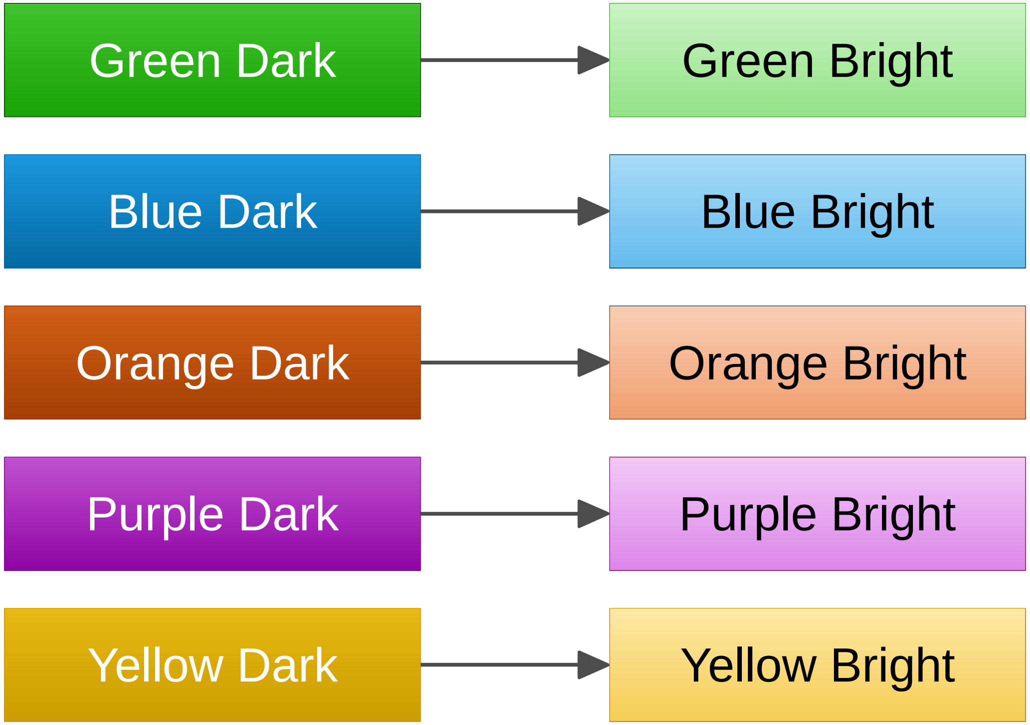
- @Sweet5hark
- See you at the LibreOffice Aarhus Conference
- Find out more at http://conference.libreoffice.org

Default Slide Example

- Here is space for your content …
- Some hints:
  - being the basis for the default slides
  - It would be useful to add your presentation title to the footer. Add it via
  - Use the delivered with LibreOffice (libreoffice.soc)

Pre-defined Shapes

Here are some pre-defined shapes for your convenience: copy the shapes, copy their formatting, or use the LibO styles.



```
You may add your code
examples, XML statements,
or debug output here ;-)
```

Section Header Example

You may add additional text here ...