



Development Workshop

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Why LibreOffice?



- ▼ Libre/free, powerfull
- ▼ Fun project & fantastic community
- ▼ Lucrative experience
- ▼ 11 students @GSoC 2018
- ▼ Various companies, as part of the community

Companies/Institutions

- ▼ Canonical
- ▼ CIB
- ▼ Collabora
- ▼ Igalia
- ▼ Red Hat
- ▼ SUSE
- ▼ The Document Foundation
- ▼ TÜBİTAK ULAKBİM
- ▼ Some Turkish companies



Collabora Productivity

CANONICAL

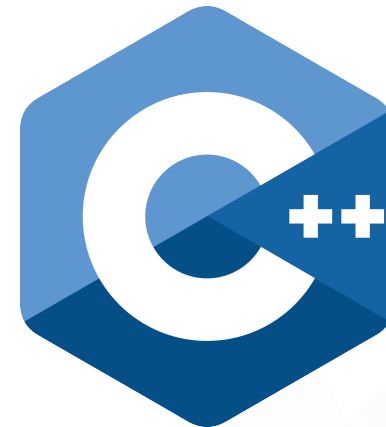


Required Skills

- ▼ Programming
- ▼ Code reading
- ▼ Patience

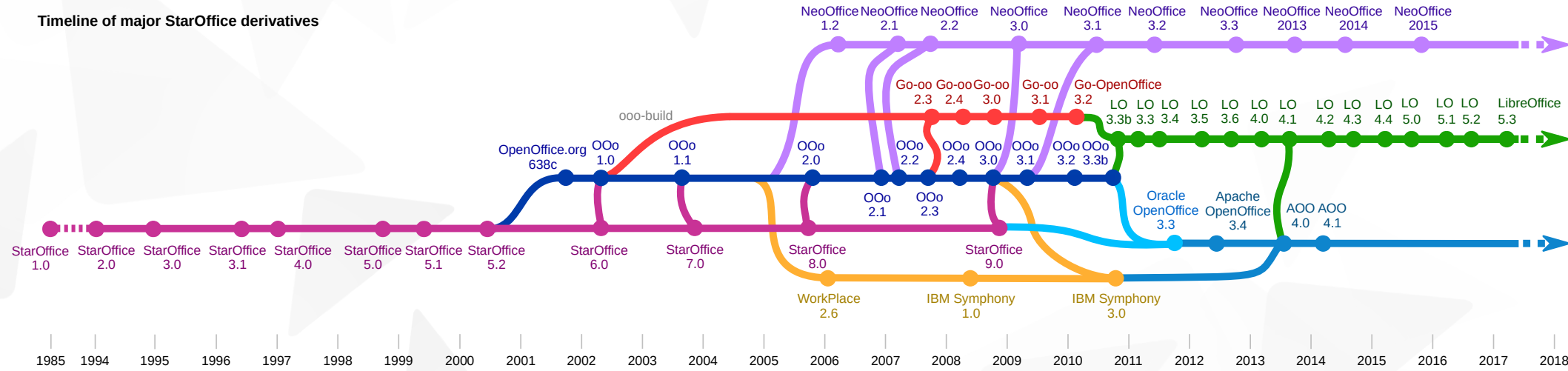
Programming

- ▼ C++ → Main language of core
- ▼ Python → Testing
- ▼ Javascript → LO Online
- ▼ Java, BASIC...

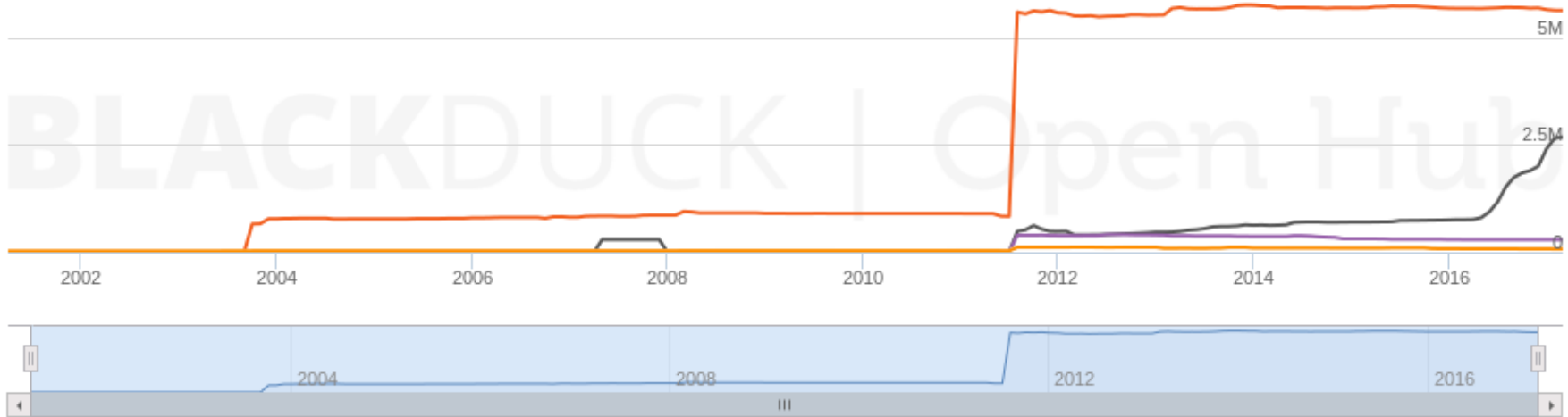


Code Reading

Timeline of major StarOffice derivatives



Code Reading



Language Breakdown

Language	Code Lines	Comment Lines	Comment Ratio	Blank Lines	Total Lines	Total Percentage
C++	5,625,477	1,213,786	17.7%	1,123,492	7,962,755	67.4%
XML	2,682,635	34,592	1.3%	15,203	2,732,430	23.1%
Java	293,475	137,975	32.0%	69,044	500,494	4.2%
Make	103,004	32,465	24.0%	23,372	158,841	1.3%
C	73,899	26,890	26.7%	16,126	116,915	1.0%
Python	70,473	8,689	11.0%	7,771	86,933	0.7%
XSL Transformation	68,613	5,667	7.6%	1,978	76,258	0.6%
Perl	33,630	7,729	18.7%	9,490	50,849	0.4%
Objective-C	14,449	2,642	15.5%	3,219	20,310	0.2%

Patience

- ▼ Many languages
- ▼ Hundreds of classes
- ▼ Complicated relations



- ▼ Note taking
- ▼ Logging
- ▼ Small steps
- ▼ Asking for help

What is where?

- ▼ C++ code → .cxx, .hxx
- ▼ Interface designs (XML) → .ui
- ▼ String literals → .src, .hrc

Tools - Offline

- ▼ IDE/Editor: Vim, emacs, KDevelop, eclipse...
- ▼ Git, grep → Code management & search
- ▼ Glade → Interface design

Tools - Online

<http://devcentral.libreoffice.org/>

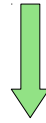
- ▼ Gerrit
- ▼ Bugzilla
- ▼ TDF Wiki
- ▼ OpenGrok
- ▼ Cppcheck

Let's Start

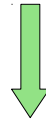
- ▼ Get & build the source code
- ▼ Choose a problem/bug to solve
- ▼ Find the relevant code segment
- ▼ Dig deeper
- ▼ Test the changes
- ▼ Submit patch

Get & Build the Source Code

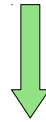
```
git clone https://gerrit.libreoffice.org/core libreoffice
```



```
sudo apt-get build-dep libreoffice
```



```
./autogen.sh  
make
```

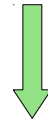


```
./instdir/program/soffice
```

<https://www.libreoffice.org/about-us/source-code/>

IDE Integration

make & make check



make qtcreeator-ide-integration

- ▼ *Code completion*
- ▼ *Go to definition, find usages*
- ▼ *Switch between header and source easily & quickly*
- ▼ *Integrated debugging*
- ▼ *Familier interface*
- ▼ *...*

<https://wiki.documentfoundation.org/Development/IDE>

Find the Relevant Code Segment

- ▼ *OpenGrok*
- ▼ *git grep*
 - ▼ *git grep "a string on a dialog"*
- ▼ <http://docs.libreoffice.org/>
- ▼ *E-mail list*
 - ▼ <http://lists.freedesktop.org/mailman/listinfo/libreoffice>
- ▼ *IRC*
 - ▼ *#libreoffice-dev @ freenode*

Dig deeper...

▼ *Enable debugging*

```
./autogen.sh --enable-debug  
make  
make dev-install
```

▼ *Run with GDB*

```
cd [lo-root]/install/program  
. ./ooenv  
gdb ./soffice.bin  
(gdb) run
```

<http://www.yolinux.com/TUTORIALS/GDB-Commands.html>

Test the changes

- ▼ *Rebuild a single module*
make [module-name]
- ▼ *Run tests/checks*
make check
- ▼ *Run & check manually*

Submit the Patch

- ▼ Register on gerrit, and complete the setup
 - ▼ <https://wiki.documentfoundation.org/Development/gerrit>
- ▼ Commit the changes
 - git commit***
- ▼ Submit to gerrit
 - ▼ ***./logerrit submit master***

More...

<http://www.libreoffice.org/community/developers/>

Community

- ▼ LibreOffice is being developed, improved, and distributed by a world-wide community of volunteers (individuals & companies).
- ▼ You can also join the LibreOffice project as a:
 - ▼ Developer
 - ▼ Tester
 - ▼ Translator
 - ▼ Support volunteer
 - ▼ Designer
 - ▼ Marketer
 - ▼ ...
- ▼ www.libreoffice.org.tr



Thank you!

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References

- ▼ <http://libreoffice.org>
- ▼ <https://wiki.documentfoundation.org/Development>
- ▼ <http://www.gnome.org/~michael/blog/>
- ▼ <http://www.lanedo.com/libreoffice-development-howto/>



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