Easy Hacks
or how to make a difference in LibreOffice.

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“Stand at the crossroads and look; ask for the ancient paths, ask where the good way is, and walk in it, and you will find rest for your souls...” - Jeremiah 6:16
Overview / the basic message

Easy:
- You can get stuck into them fast:
  http://wiki.documentfoundation.org/Development/Easy_Hacks_by_required_Skill

Hacks:
- Various kinds of small but useful code changes
- No-one blocking on your work … nice to have

Significant
- Which individually & collectively make a difference.

Quick Skills Audit:
- Simple programming ?
- German & English speakers ?
- Ability to use Linux & a text editor ?
Easy: Translating German Comments ...

- Admittedly much easier if you are a German
  git clone git://anongit.freedesktop.org/libreoffice/core

- Beautiful tool tool help out with this: (thanks Miklos)
  cd clone
  bin/find-german-comments cppuhelper # random directory

    forms/source/component/FormComponent.cxx:924:
    3. Lesen der allgemeinen Properties
    forms/source/component/FormComponent.cxx:2099:
    wenn eine Verbindung zur Datenbank existiert
    forms/source/component/FormComponent.cxx:2102:
    Feld bestimmen und PropertyChangeListener
    ...

Significant: Translating Comments …

- It makes things **significantly** easier for non-Germans …
- We removed or translated ~30k lines of these so far
- We still have 22k to go: done mostly by new guys …
- Thanks to all who helped!

Detected lines of German comment

```
3.3  3.4  3.5  3.6  3.7
0     10,000 20,000 30,000 40,000
```

*Thanks to (recent translators):*
Gerhard Oettl,
Tomaž Vajngerl
Philipp Riemer
Albert Thuswaldner
Philipp Weissenbacher
Mark Wolf
Josh Heidenreich
*and many more!*
Success story – removing unused code ...  

Essentially ~no un-used code left anymore thanks recently to: 

Julien Nabet, Caolán McNamara, Marcos Paulo de Souza, Matúš Kukan, Thomas Arnhold, Elton Chung, Javier Catala, and many more ...
Easy: Using git ...

- Git can **sound** scary – but it's not -so- bad …
- One off setup your of name / E-mail (we like real ones)
  - `git config user.name “Jim Bob”`
  - `git config user.email “jim.bob@easy.com”`
- Checkout the code:
  - `git clone git://anongit.freedesktop.org/libreoffice/core`
- Edit a file you like
  - `git diff # will show you your diff`
  - `git commit -a # commit all changes`
  - `git format-patch -1 HEAD # create a patch to E-mail us …`
  - `git pull -r # get the latest changes from others`
  - `git stash # squirrel away your changes, giving a clean tree.``
  - `git stash pop # get them back back again …`
Easy: fixing all SvStream operators ...

- So:
  - `git clone git://anongit.freedesktop.org/libreoffice/core`
  - Load up: tools/inc/tools/stream.hxx
    - `SvStream& operator<<( sal_Int16 nInt16 );`
    - `SvStream& operator<<( sal_Int32 nInt32 );` ...
  - Remove / re-compile with:
    - 'void writeInt16(sal_Int16 nInt)' style methods
    - Update all calling code & remove operator overload.

```cpp
if( pPiece->IsUnicode() )
-    Strm() << c;
+    Strm().WriteInt32(c);
else
-    Strm() << (sal_uInt8)c;
+    Strm().WriteuInt8(c);
```
Significant: improves security & hackability

- Operator overloading / Magic type selection & inference
- ripple/format problems from ~unrelated code change
- Nail security bugs from lame impl. of read operators:

```cpp
SvStream& SvStream::operator>>(sal_uInt32& r)
{
    sal_uInt32 n = 0;
    READNUMBER_WITHOUT_SWAP(sal_uInt32, n)
    if (good())
    {
        if (bSwap)
            SwapULong(n);
        r = n;
    }
    return *this;
}
```

Ergo 'read' operator changes need some degree of auditing
Success story – translating wizards at runtime

- Problem:
  - Wizards duplicate tens of ODF .zip files per language
  - We ship 100+ languages

- Solution:
  - Istvan Turi – easy hack fdo#49101 and others
  - Windows download is 15+Mb smaller …

- Opportunity:
  - More low-hanging fruit here
  - Size / profiling of Win32 MSI files needed …
Easy: Making our dialogs beautiful ...

- Caolan's Widget Layout work:
  http://wiki.documentfoundation.org/Development/WidgetLayout

- Core skills required:
  - Ability to install / run glade-2
  - Basic motor / mouse skills ...
  - HowTo – cf. above link.
    - Examine the dialog / .src file and/or User Interface
    - Draw (using glade-2) an equivalent .ui file
    - Either: send that file in as-is, or ...
    - Remove obsoleted .src / .hrc file cruft.
    - Search / replace widget members to pointers
**Significant:** key to improving our look & UI

- **Major benefits:**
  - This will fix dozens of point-zero / release bugs
  - Fixing embarassing translation problems
    - “*why is Donaudampfschiffahrtsgeesellschaftsk... truncated ?*”
  - Improve the compactness and look of dialogs for all
  - Allow UI designers to improve the looks
  - Removes tons of old, un-tweakable, overly verbose code
  - You get to know Caolan McNamara <caolanm@redhat.com>

- **We can't do (at all quickly) it without you:**
  - 600 .src file / dialogs, 33 converted so far …
  - This could be where you make your blow for our look & feel
  - 6 weeks to go before feature freeze …
Easy: Creating a UI lookup tooling

- **Problem**
  - How to find the code behind the dialog I see

- **Solution:**
  - Build a database to do simple lookups:

```plaintext
CheckBox CB_INSERT_TIP...

Text [ en-US ] = "~Display remainder of name as suggestion while typing" ;
```

OpenGrok
Code Reading ...
**Significant**: accelerating the on-ramp …

- **Major benefits:**
  - People want to scratch their itch …
  - They want to get into the code ASAP
  - Currently, there is a *very* high barrier to entry here.
  - New developers just can't do it
  - Worse – many items have inconsistent names in the code / UI
    - 'AutoText' → 'SwGlossaryDlg' etc.

- **Skills:**
  - Web development / a bit of perl / python / php parse some SRC files
  - Bonus points for internationalised solutions
  - Bonus points for a fake menu – click the item → code ...
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For existing developers ...

How to get easy hacks created ...
Easy: To create your own easy hacks...

- Head to bugzilla:
  - https://bugs.freedesktop.org/enter_bug.cgi?product=LibreOffice
- Summary: “EasyHack: …..”
- Component: “LibreOffice” or …
- Description:
  - a **clear** set of code pointers
  - Enough detail to jump *immediately* into the code / task
  - ie. do the leg-work, a good EasyHack takes time to file.
- [Submit]

One more step:
- Add Whiteboard: see list of names or just use:
  - EasyHack,DifficultyBeginner,SkillCpp,TopicCleanup
Grok the website ... lots more out there ...

If you want help matching you with an issue:

Easy Hacks requiring C++ Skills

These lists contain the bugs with whiteboard status "SkillCpp".

**Skill Level: Beginner**

This list contains the bugs with whiteboard status "DifficultyBeginner".

- **Easy Hack 39428** - audit / remove SvStream long operators
- **Easy Hack 51309** - Names of DatabaseRanges should not be case sensitive
- **Easy Hack 39625** - Make existing cppunitests work
- **Easy Hack 45904** - move java based api tests to c++
- **Easy Hack 51304** - dung out bogus boilerplate
- **Easy Hack 55410** - on windows automatically fill in the default user's name into tools->options->user data
- **Easy Hack 55066** - FILEOPEN: flaws in importing 123 files
- **Easy Hack 39626** - Store/Restore font dropdown MRU
- **Easy Hack 39468** - translate German comments, removing redundant ones
- **Easy Hack 46718** - UI: Delete multiple styles at once
- **Easy Hack 40694** - Error in message warning that the column limit was exceeded for MS-Excel format
- **Easy Hack 54493** - On Windows auto enable CJK or CTX features if a keyboard layout in that category is installed
Easy Hacks are Easy & Useful ...
Come and see me to get setup ...

- You can do them ...
- Please do get involved and help us ...

Oh, that my words were recorded, that they were written on a scroll, that they were inscribed with an iron tool on lead, or engraved in rock for ever! I know that my Redeemer lives, and that in the end he will stand upon the earth. And though this body has been destroyed yet in my flesh I will see God, I myself will see him, with my own eyes - I and not another. How my heart yearns within me. - Job 19: 23-27