

# Welcome to today's meeting



OCC  
Free Software

Joachim  
Breitner

Prelude

Recapitulation  
Geek Points

Software

Hello World  
Step for Step

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Why?  
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```
GET /OCC-2.pdf HTTP/1.0
```



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# Obroni Computer Club – Free Software

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# Today's topics



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- 1 Prelude
  - Review of the last meeting
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- 2 How software is made
  - Hello to the World
  - The Steps of Programming
- 3 What is Free Software
  - Why do we need Free Software
  - What exactly is it now?
  - Examples of Free Software
  - Things to find out. . .



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# Do you still remember?



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Last week, we talked about blogs and wikis. We have our own, the addresses are `http://occ.soshgic.edu.gh/blog/` and `http://occ.soshgic.edu.gh/wiki/`.

Everybody can use the wiki, and you have got a password for the blog from me.

We also agreed on the “Jargon List”, a dictionary that we want to create.



Another suggestion:

## Club Internal Competition

Every member can collect “Geek Points” for geeky stuff, like:

- Interesting blog entries
- Wiki contributions
- Programming competitions (maybe)
- Other projects

At the end of the schoolyear, or the semester, or maybe a few times in between, we will see the standings and you might win some stuff.

# A way to make points...



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(skip if suggestion was not accepted)

# A way to make points. . .



I will keep track of the points on the wiki. Any changes by you will simply be reverted. . .

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# A way to make points...



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I will keep track of the points on the wiki. Any changes by you will simply be reverted...

One good way of making points is being the first to fulfill this task:

## The Greeting Challenge

At the beginning and the end of each meeting's slides are some technical expressions. Find out what they mean and where they come from (what product, what fileformat, what language, what protocol, whose quote), put this information on a page on the wiki, telling your fellow members about it.

# How software is made



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# Demonstration



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You will see now how I

- 1 Enter the source code for a “Hello World” program in Python
- 2 Run the program
- 3 Fix a bug (“Club” instead of “World”)

May be repeated in Perl, C, Haskell.

# Demonstration



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May be repeated in Perl, C, Haskell.

## The “Hello World” Program

This is a common term among programmers, as the first thing you usually learn to write in a new language is the trivial Program, that just outputs a greeting to the world.

# The Programming Cycle



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- 1 Mental pre-work: Idea, planning (or not)
- 2 Write code
- 3 Compile code
- 4 Test code
- 5 If not ok, fix bug and go to step 3
- 6 Write more code (e.g. more features), go to step 3

As you can see, a program is never finished (besides by losing interest).



Ok, not really:



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*It has been just so in all of my inventions. The first step is an intuition, and comes with a burst, then difficulties arise—this thing gives out and [it is] then that “Bugs”—as such little faults and difficulties are called—show themselves and months of intense watching, study and labor are requisite before commercial success or failure is certainly reached.*

Source: Edison to Puskas, 13 November 1878, Edison papers, Edison National Laboratory, U.S. National Park Service, West Orange, N.J., cited in Thomas P. Hughes, *American Genesis: A History of the American Genius for Invention*, Penguin Books, 1989, on page 75.



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Besides just writing the program, there is more to be done:

- Documentation
  - Comments in the Code
  - User documentation
  - Technical documentation
- Packaging, i.e. making an installer
- Bug tracking
- User support
- Translation
- Teamwork

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# What is Free Software



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- Why do we need Free Software
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# Why care about software?



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In today's world, the use of computers has become a “culture technology” like reading and writing. The problem with computers is, that they are in practice limited to what the software on them does.

He who controls the software, controls the culture.

Therefore, it is important for open societies, democracies and responsible persons to not lose control over the software.

# So what's wrong with the current software.



The predominant kind of Software nowadays is *proprietary software*. This means:

- You pay for the right to use it on one computer.
- You have no right to pass it on.
- You have no right to adjust it to your needs more than the designated options allow.
- You have no right to make it work with other soft- and hardware, unless intended by the manufacturers.
- You have no right to learn about its inner workings.
- The manufacturer will only care about your problems as long as you are an effective market.
- You don't know what else it's doing. (→ Privacy!)

Ugly, isn't it?

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# A kitchen analogy



You buy a new frying pan. You find a nice one, and it even comes with a cookbook! (That made then pan more expensive, but you don't know that.) At home, you unpack it, and it has a label "by opening this cookbook, you agree to the included EULA". This text tells you that you can use these recipes only with this pan. Unless you register, the recipes can only be used for 30 days. You may not adjust the recipes to your tastes or even medical requirements. Problems get only fixed once a month, until then you have to eat too salty or burned food. Some of the ingredients are strange, but you are not allowed to find out if they are healthy or not.

So one day you have friends over. They really like your cooking and ask for the recipe. Too bad: You can't share them, and if you do, you'll be prosecuted.

(based on [http://deshalbfrei.org/wiki/freiheit:vergleiche#freiheit\\_und\\_kochen](http://deshalbfrei.org/wiki/freiheit:vergleiche#freiheit_und_kochen) by Webbuterfly)

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# Free Software to our rescue!



With Free Software, all that is different, as Free Software guarantees the following four freedoms:

**Freedom 0** The freedom to run the program for any purpose.

**Freedom 1** The freedom to study and modify the program.

**Freedom 2** The freedom to copy the program so you can help your neighbor.

**Freedom 3** The freedom to improve the program, and release your improvements to the public, so that the whole community benefits.

Think of 'free' here as in 'free speech', not as in 'free beer'.

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# Do I really need these freedoms?



- I don't like something about the program.  
Example: The toolbar takes away too much screen estate.

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# Do I really need these freedoms?



- I don't like something about the program.  
Example: The toolbar takes away too much screen estate.
- A feature is missing in the program.  
Example: My IM should flash my ThinkLight.

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- I don't like something about the program.  
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- I don't trust the program.  
Example: Is my e-mail encryption really safe?

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- I want to know how it works.  
Example: What algorithm is behind this cool screen saver.

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Example: What algorithm is behind this cool screen saver.
- I need my money somewhere else.  
Example: Free Software is usually free of cost.

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Example: Free Software is usually free of cost.
- My friends should use that, too.  
Example: I just copy it to them.

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- I need my money somewhere else.  
Example: Free Software is usually free of cost.
- My friends should use that, too.  
Example: I just copy it to them.
- I want to have a choice.  
Example: KDE/GNOME, vim/EMACS, Linux/BSD...

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# And who does all that?



Free Software is mainly created by geeks like you and me in their free time. But there are also companies involved, small ones as well as large ones as IBM and HP.

You can also make money with Free Software. As a student, you can apply for one of Google's "Summer of Code" scholarship. As a company, you can make money by supporting Linux. The company "Red Hat" went to the stock market with \$84.000.000 and in the first four months multiplied it's value twenty-fold.

And then there are millions of users who contribute by sending bug reports, by making feature requests and by being the motivation for the programmer.

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# Sounds good. So what programs are there?



- Programs that run both on Linux and on Windows.
  - Firefox, the better web browser
  - Thunderbird, the safer e-mail client
  - OpenOffice, the office suite
  - Gaim, the multi protocol instant messenger

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- Notable programs on Linux (There are many many more...)
  - GIMP, the full features image manipulation program
  - LaTeX, the professional text setting program (see this)
  - Various desktop environments (GNOME, KDE and more)
  - Powerful text editors like vim and EMACS

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  - Powerful text editors like vim and EMACS
- Lots of programs for servers

(The apache web server, other servers, routers, firewalls, our blog and wiki and similar software)

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(The apache web server, other servers, routers, firewalls, our blog and wiki and similar software)
- Lots and lots of small and big games

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- Lots of programs for servers

(The apache web server, other servers, routers, firewalls, our blog and wiki and similar software)
- Lots and lots of small and big games
- And of course Linux, the Unix like operating sytem that is stable, flexible, customizable and free!

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# A time to make points



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Here are a few questions you can try to find out. If you put an answer on the wiki, you get geek points!

- Who or what is *rms*?
- What does GNU and HURD stand for?
- What is a “distribution” in this context?
- And of course:  
What does the stuff on the first and last slide mean?



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# Any Questions?

Good bye 'till next time



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```
HTTP/1.1 200 OK
Content-Type: text/html
```