Ethics and practicality of free software

This will be an assignment you should do over the next few weeks. It will be due with the Fourier transforms assignment, but that does not mean that you should wait a month before starting it.

Over the semester, at a few points, we will take advantage of forms of free software, mostly from the GNU project. I am not going to try to indoctrinate you into thinking that all software should be free. I am just going to assign you to read a few articles from the internet, books and magazines about the various ideas about how software should be written and distributed and how people working on software should earn a living.

The questions you should address in your essay are:

1. What is the free software movement, and what is the open source movement, and how are they different?

2. In a system where source code is distributed freely, how can people earn a living writing software?

3. What are some notable successful software projects that were made possible because of free or open source software?

4. Explain how the GNU Lesser General Public License allows for cooperation between proprietary and free software producers.

5. What are some key arguments for and against free and open source software?

Your essay should be about 1000 words long. It should be typed. All references should be cited properly. You should use proper English grammar and spelling throughout the essay. If you do an acceptable job on the assignment, I will give you a passing mark on it. If you do not, I will return it to you with comments and ask you to re-submit it. As long as you pass, it will not contribute to your final grade.

Referencing

Different professors will have different rules about how to cite things, as will different publishers if you eventually get to the point of doing professional academic writing. My only requirements are (1) you cite your sources *within the main body of your text* and (2) you have a reference list that is detailed enough that if I wanted to track down your source material, I could do it. When I state that you must cite your sources within the main body of the text, what I mean is that any information that is not common knowledge and not your own work must be cited whether it is in your own words or not. If you use someone else's words, you must include quotation marks as well. I do not care whether you use footnotes or put the author's name and the year of the publication in parentheses.

Just a few examples of what is acceptable and not acceptable.

Not acceptable: reference not embedded in text

```
The muon was discovered by cloud chamber experiments.
Blah blah blah
```

```
    References
Ref 1
Ref 2
...
Street J.C, Stevenson E.C., 1937, Phys Rev., 52, 1003
...
```

Not acceptable: not enough information to dig up the right reference easily

```
The muon was discovered by cloud chamber experiments (Street & Stevenson
1937).
Blah blah blah
```

Acceptable: reference in text and in reference list

```
The muon was discovered by cloud chamber experiments (Street & Stevenson
1937).
Blah blah blah
```

```
References
Ref 1
Ref 2
...
Street J.C, Stevenson E.C., 1937, Phys Rev., 52, 1003
...
```

Acceptable: footnote

`The muon was discovered by cloud chamber experiment.`[1]
`Blah blah blah`

Referencing web sites

Three things: one, if the web site you're looking at is a web site for a journal or a magazine which is also printed, give the reference for the paper version of the article. Two, if you do reference some other kind of web site, give the full path to the web site you're looking at, not to the front page for the organization hosting that page – that is, give me something where I could type the web link you give me into my browser and the right web page would display on my computer with no further clicking needed. Third, since web pages can be updated, give the date on which you downloaded the page. I *will* send your report back to be re-done if you don't follow these rules.

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[1]Street J.C, Stevenson E.C., 1937, Phys Rev., 52, 1003