General project questions:

* How would you describe the project idea?

Building the most state-of-the-art physics book available for students.

* What was the origin of the idea?

Since my students days in the 1990ties I have tinkered with web technology. Although I was always impressed what is achievable by combining HTML+JavaScript I never dreamed of the possibility of building full applications like [Google maps]( https://www.google.at/maps) or [tinkercad]( https://www.tinkercad.com/) by using pure web technologies. Browsers evolved from a simple Hypertext displaying applications to nearly an Operating System of their own.

In Austria the current “digital schoolbook” of today is basically a PDF document put on the internet. There is more possible with today’s web technology. \*Much\* more…

* Give an overview of the historical development and phases of the project

The idea was roughly born three years ago, when I was experimenting with the [canvas element]( <https://de.wikipedia.org/wiki/Canvas_(HTML-Element))> which I was using the first time in my physics applets, which let me abandon flash applets once and for all – don’t get me wrong: flash was a cool tool for the time and I loved working with it, but it always felt like a workaround and it was proprietary software. Then I thought there are all building blocks available to realize such a project with pure web technology.

The following months I learned SVG/Incscape, discovered Markdown and its pandoc flavor, git and found the gitbooks project.

Last summer I heard of the [bookdown](https://bookdown.org/yihui/bookdown/) package. The following school year I would teach a class of 5th grades of Austrian secondary school (second year of the upper school) in physics. So I decided to start the work on the project.

Right now I have roughly completed one fourth of the physics topics planned for the complete book

* Were there some crisis? If yes: How did you solve them?

Time. Less sleep…

* Were there some favorable circumstances for the project? If yes: How did you use them?

First of all: I would have never had a chance to do such a project if there were not such fine Linux software tools and the combined efforts of the Wikimedia community.

On the technical side: I studied Mathematics and Physics, but I also have acquired some basic programming skills. This helped me to glue together some parts in the workflow of the book.

On the personal side: First there is the love of my wife and my child. Also my school principal is so generous as to give me a share of our schools web space for my project.

Question about the environment:

* Are there partners, partner institutions? If yes: who are they and what are their part?

Some colleagues at my school help me with error corrections and style questions.

* Are there competitive projects? If yes: who are they and what areas are in competition?

As far as I know there is no such a project planned.

* What are the distinguish factors for your project?

I want the project to be as much open and community driven as possible. So my projects aims to

- support as many devices as possible (Smart-TV, PC, Notebook, Tablet, Smartphone, E-Book Reader, Book (printed version))

- Exclusive use of open formats (Web-Browser, ePub Reader, PDF-Reader)

- Exclusive use of open standards (HTML, JS, CSS, ePub, PDF)

- Reuse of existing media (Wikimedia commons)

- Exclusive use of open licenses (CC-BY-SA 4.0, GPL 2,…)

- Exclusive use of free software (bookdown, gitbooks, R, pandoc, TeX, Inkscape,...)

- Community driven (all files on GitHub/GitLab)

- Open access and respect for user privacy (no accounts, no logins, no tracking)

- Accessible (share Formulas, sections, media on social media and learning management systems, full text search)

- Possible multilingual (switch the language, while remaining on the same topic).

There are projects featuring some of these points. I would like to see \*all\* of them realized in the project.

* How would you describe the economic situation of your project (Human Resources, technology, financing)?

Currently it’s just me working in my spare time…

* How would you estimate the sustainability of your project?

I honestly have no idea, since this will be my first GitHub community project.

Question about the future development and perspectives:

* What are your next plans? (From different perspectives: content, technology, staff, finance)

First get the project in a form so that I can put someone else to it and document open issues. Then the project is uploaded to a GitHub repository.

From September on I teach a physics class of 6th grades of Austrian secondary school (second year of the upper school), so the next ¼ of the contents is written during the coming school year.

As upcoming features are planned: a gif player for animated gif appearing the book and a drawing and annotation tool for drawing over images in the book.

* What are your success criteria? What would you define as a successful project?

I consider my project to be successful if I can realize the project with all the points mentioned above and my students like and use it.