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Introduction

This document serves as a comprehensive guide for creating and managing your project Wiki. It is organized into various sections that cover specific aspects of project management, collaboration, design, documentation, and technical implementation.

Throughout this guide, I will assume a successful activation of the team Wiki but will walk the reader through the fundamental aspects of setting up the Wiki, as well as providing a general overview of project documentation. I will emphasize key elements that are essential for the Wiki team, such as effective documentation, clarity, and organizational strategies. The coding section will specifically focus on React applications, explaining the basics and offering guidance on best practices and methods for creating a dynamic and user-friendly interface.

At the end of the guide, there will be an index list to help you easily find specific topics and navigate through the content more efficiently.

This guide also serves as documentation to the associated template wiki, which teams are free to use as a starting point. It can be found at `https://github.com/liliana-sanfilippo/igem-wiki-guide`.

It is a first version and I will be working on improving it, so any feedback or ideas can be sent to liliana.sanfilippo@uni-bielefeld.de or raised as issues on GitHub.

Documentation for other tools or packages by myself is not included, but wil be linked.

While updating the guide, some already finished sections will be re-added and the following aspects will be added:

- An in-depth explanation on how to implement a citation React component
- Setting Global Variables in React
- Creating HTML Code with Python
- Wiki Thaw
- Utilizing Bootstrap
- FAQ
- Merge Conflicts
- Utilizing ChatGPT
- Where can I get help?
- Definitions of terms such as CSS path, CSS selector

- Errors and Troubleshooting
- html link targets
- Further Collaborations and Considerations with other subteams (e.g. Sponsoring and logos)
- Scrolling animations

As well as additional images outlining the instructions and examples given.

Chapter 1

Getting started

1.1 Reading iGEMs resources

To successfully build your iGEM team Wiki, it is essential to thoroughly review iGEM's official Wiki Rules and Resources. Pay close attention to size limitations, time restrictions, and functionality constraints to ensure compliance with the competition requirements. Familiarize yourself with best practices and common pitfalls by examining previous Wikis, particularly those from past winning teams, as they can provide valuable insights into effective strategies and potential challenges.
Before you dive into coding, make sure to read iGEM's official information on the team Wikis and the GitLab Guide. These documents will help you understand the basic requirements, technical constraints, and available tools necessary for your Wiki's development. Key resources to consult include the iGEM GitLab Guide and the Team Wiki Deliverable page, which offer an overview of important documents that will guide you throughout the process.
By following these steps, you will be better prepared to create a well-structured and compliant Wiki that effectively showcases your team's project.

1.2 Deciding on a template

When selecting a template for your iGEM team Wiki, it's important to consider your team's skill level to ensure a smooth development process:

- **Markdown & Frozen Flask (Beginner)**: This simple template utilizes Markdown files to create a static website. It's user-friendly, making it an ideal choice for teams just starting out.

- **HTML & Frozen Flask (Intermediate)**: This template employs HTML files to generate a static website. While it is slightly more complex than the Markdown option, it remains relatively straightforward to use, making it suitable for teams with some coding experience.

- **React (Advanced)**: This option is for teams with advanced skills in React, a complex framework that allows for the creation of dynamic and interactive Wikis. Before choosing this template, ensure that your team is proficient in React, as we will not provide detailed guidance on its usage. It's crucial to review the requirements and thoroughly test your Wiki before the Wiki Freeze to ensure everything functions as intended.

1.3 Let everyone know the essentials

Everyone should be aware of the requirements and mistakes that could get you disqualified to avoid the responsibility being placed on one person. Important aspects are:

- GitLab Repository Link
- Licensing
- Standard URL Pages
- Content Hosting
- iframes Usage
- Source Code Submission

Do not rely on the knowledge of former teams only as the guidelines can change.

1.4 Distributing responsibility

To effectively build your iGEM team Wiki, it's essential to clearly define team roles and responsibilities. Consider assigning specific positions such as content creators, developers, and designers. Utilizing task management tools can help streamline the process and ensure everyone stays organized. Each team member should be aware of their specific tasks related to the Wiki, which may include:

- **Page Layouts and Design:** Creating visually appealing and user-friendly layouts.
- **Coding:** Implementing the necessary code for functionality.
- **Automation:** Streamlining repetitive tasks where possible.
- **Data Curation:** Organizing and managing data sets relevant to your project.
- **Media Management:** Uploading videos, taking and editing photographs (including considerations for lighting, cropping, and naming conventions).
- **Text Creation and Editing:** Writing, editing, and correcting text to ensure clarity and accuracy.
- **Task Management:** Overseeing progress and reminding team members of their responsibilities.
- **Mobile Optimization:** Ensuring the site is accessible on mobile devices.
- **Illustrations and Animations:** Creating visual elements to enhance the content.
- **Accessibility:** Implementing features that make the Wiki usable for all visitors.
- **Documentation:** Maintaining accurate records of processes and changes.

- **Development of Additional Tools:** Creating helpful scripts or tools, such as Python scripts, to automate tasks.

By clearly defining roles and responsibilities and utilizing task management tools, your team can effectively collaborate to create a comprehensive and engaging Wiki for the iGEM competition. It is recommended to distribute these tasks on multiple people.
Most tasks concerning the Wiki overlap with other subteams and should therefore be handled in cooperation with these.

Chapter 2

Design

2.1 Collaboration with the Creativity/Design Team

To create an effective and visually appealing iGEM Wiki, collaboration with the Creativity/Design team is essential. You do not only want to simply collect information on your wiki, but present it in a coherent, readable and convincing way to both fellow iGEMers and judges. Consider the following design aspects:

Choosing Colors: Select a cohesive color palette that reflects your team's branding.
If the team has no prior experience with design, color psychology[**?**] or simply color palette choosing tools can be a helpful starting point, especially in small teams with limited resources.

Initial Design Work: Ideally, start in a design program or layout tool (e.g. Figma) to visualize your ideas before implementing them on the Wiki. Alternatively, vision boards or analogue planning methods such as drawing work as well.

Choosing Illustration Styles: Decide on illustration styles that align with your overall design and branding. Consistency in style helps create a unified look across your Wiki, making it more visually appealing and easier for users to navigate.
Style considerations can be the software used for illustrations and specific details such as the usage of borders and shadows for in-house designs.

Logo usage: There are many possibilities to use your team logo on your wiki. Both for simple things such as buttons as well as more complex things such as animations, progress bars or a guide through your website.

2.2 Design Parameters

- **Typography:** Prioritize typography to enhance readability and aesthetics.
  - Maintain appropriate line length and spacing for readability.

  - Use standardized font sizes for consistency across the Wiki.

- **Simplicity:** Aim to simplify designs for a cleaner look.
  - Limit to 2–3 headings and colors to maintain clarity and focus.
  - Minimize the number of design parameters to streamline the design process.
  - Use colors purposefully; avoid unnecessary embellishments unless justified.
- **Consistency:** Unify illustration styles and design elements for a cohesive appearance.
  - Ensure consistent image formats and alignment (preferably left-aligned, avoiding justified text).
  - Align infographic styles to maintain a cohesive visual narrative.
- **Bootstrap Values:** Consider overriding Bootstrap defaults as needed for your design (See **??**).
- **Call to action and clear navigation:** Include a welcoming call to action on the homepage, using colors meaningfully to guide users.
  - Possibly add further guidance such as highlights, to guide the user through the wiki and help the judges find all necessary information.
  - Use a clear menu structure and possibly breadcrumbs.
  - Avoid deep nesting your pages and aim for a flat, user-friendly structure. You want the judges to easily find all you pages from the standard URLs.
- **Content Organization:** Clear information hierarchy helps users find what they're looking for faster.
  - Utilize cards or expandable sections for content organization.
  - Ensure the basic information is always available and additional information is, while easily locatable, tucked away and not distracting the reader.

- **Responsiveness:** Ensure that all design elements adapt smoothly to different screen sizes (See **??**).
  - Prioritize mobile usability since people may want to look at your wiki on their phones during or after presentations and poster sessions.
  - Verify that navigation, text, and visuals remain accessible and visually consistent across devices.
- **Accessibility:** Design for inclusivity by ensuring content is accessible to all users. Especially if you aim for the inclusivity special prize.
  - Maintain sufficient color contrast for readability.
  - Use semantic HTML and alt text for images.

Chapter 3

Documentation

Creating well-structured documentation is essential for effective communication and information retention. Here are some general considerations for documentation, including various methods to create PDFs and layout decisions for protocols and notes.

3.1 General considerations

Purpose and Audience

Clearly define the purpose of the document and identify your target audience. Understanding the audience's knowledge level will guide your writing style and content depth.

Clarity and Consistency

Use clear, concise language to convey information effectively. Maintain consistency in terminology, formatting, and style throughout the document to enhance readability and comprehension.

Sustainability

Decide on styles and approaches early on and think about using English from the get-go to avoid having to translate and rework your notes and protocols later on. Remember that you need to credit translators and potentially translating tools in the attributions.

Structure and Organization

Use a logical structure with a clear hierarchy, even if it seems basic or unnecessary to you.

- **Title Page:** Include the document title, author(s), date, and possibly your logo. Remember, the document is presented on your wiki, but it is possible it will be distributed in a different context, and therefore you should always add all necessary information to each document.

- **Table of Contents:** Do not forget to provide a navigation aid for longer documents. If possible, create a table of content with hyperlinks.
- **Structure** Divide content into clear sections with appropriate headings. Possibly use a glossary for intricate documents.
- **Conclusion:** Summarize key points to ensure the reader understands the main points and offer recommendations if applicable.

Choosing a Format for Documentation

Word Processing Software (e.g., Microsoft Word, Google Docs): These tools allow for straightforward document creation with various formatting options. You can export your documents as PDFs easily, ensuring compatibility across different devices and allowing collaborative writing.

LaTeX: Ideal for more complex documents, LaTeX offers precise control over formatting, making it perfect for scientific papers and technical documentation. It is particularly beneficial for documents with mathematical equations, citations, and references. Services such as Overleaf allow collaborative writing.

It is possible to create PDF-masks with design tools such as Canva, if you want to add further styles or branding to your documents.

3.2 Team Meetings

It is advisable to have meeting protocols from the beginning. Depending on your team structure, experience and regarding time management, you should consider:

- **Preparing agendas**: Starting meetings with a pre-prepared agenda outlining the topics for discussion.
- This helps keep the meeting focused and provides a structure for your notes.
- **Minute taker**: Assign the task of note keeping to a specific person every meeting.
- **Tracking decisions**: Document any decisions or agreements reached during the meeting to provide a clear record of team choices.
- **File Storage and Accessibility:** The meeting notes should be accessible to the whole team afterward and multiple versions should be most urgently avoided.
- **Summaries**: Some teams may find it helpful to create meeting summaries after the fact.
- Though this can also be a time drain.

3.3 Lab

Well-maintained lab books are essential for tracking progress, reproducing experiments, and ensuring accountability. The following aspects seem basic and natural which unfortunately puts them at risk of being forgotten for this exact reason.

- **Date and time**: Always include the date and time of each experiment or observation and do not rely on remembering the dates later on.
- **Replicable Entries**: Write in enough detail that another person could replicate the experiment based on your notes. This is essential for both personal reference and future use.
- **Backup**: Regularly back up entries to prevent data loss.
- **Raw Data**: Always include raw data alongside processed or analyzed data and save the data separately, too.

If you want to use a lab book software, please check beforehand if it allows you to export your (raw) data and notes in a useful way.

3.4 Integrated Human Practices

Documenting Integrated Human Practices involves tracking contacts, conversations, permissions, and the use of any media, ensuring compliance with ethical and legal standards.
Both to avoid unnecessary work and to maintain a professional demeanor towards your stakeholders.

- **Tracking Contacts and Interactions**:
  - Maintain a list of **Contact Information** of the individuals and institutions you both want to contact and already contacted. Include details such as *role, affiliation, date of first contact,* etc.
  - Keep track of **Who Contacted Whom** to avoid contacting the same person multiple times. This helps in maintaining accountability and tracking follow-ups.
- **Consent Management**
  - Be sure to retain **Informed Consent for Media Usage** from the people you interviewed or otherwise created media content with. You should mention how the “freezing” of iGEM Wikis works and that it will not be possible to change or remove information after the project ends.
  - Be mindful to receive **Feedback for Quotes and Transcripts** of interviews. Especially if you need to translate conversations to English, the stakeholders should get the chance to comment and, if necessary, correct your translations.

  - Remember to ensure a tidy **Storage of Consent Information** that is accessible to the whole team.

- **Recording Conversations and Outcomes**
  - If possible, clear the **Type of Documentation** with the interviewee beforehand.
  - Try to organize **High Quality Tools** to record and test them beforehand.
  - Be aware of background noises and keep in mind that the videos could be useful for your project presentation video.
  - Create **Meeting Summaries** including *main topics*, *key takeaways*, *quotes* and *to-dos*.
- **Categorizing Stakeholders and Their Input**
  - The **Categorization of Contacts** into categories such as *Academia, Industry* or *Community* should be started as soon as possible to streamline documentation and to facilitate references back to relevant discussions.
  - Keep track of the **Implementation of Advice and Input** you received to be able to cross-reference from you Integrated Human Practice to other aspects of your project.
- **Ethical Considerations**
  - Ensure that no **Sensitive Information** is included in your published material. This can include *confidential project data* or *compromising information*. If necessary, censor details to ensure the **Privacy** of individuals such as patients, children or other vulnerable stakeholders.
  - Maintain proper **Attribution** for both intellectual input and media usage.
- **Maintaining Transparency**
  - Maintain **Transparency in Reporting** by including clear and concise references to your interactions with stakeholders when writing Wiki texts.
  - Be upfront about **Changes and Censorship** in your documentation.

3.5 MeetUps

When documenting an iGEM meetup, it's important to capture not only the logistics but also the valuable exchanges, collaborations, and outcomes from the event.

- **Photos and Videos**: Be sure to organize media documentation beforehand and take pictures of key moments. Not only for your team but to support the attending teams and allow them to concentrate on the event.
- **Expert Feedback**: If experts or judges were present, document the feedback they provided to your team or others. Highlight how this feedback can influence your project moving forward.

- **Material Exchange**: If any teams shared protocols, tools, or resources during the meetup, keep track of what was exchanged and which team shared it.
- **Lessons Learned**: Capture insights or takeaways from the event that could influence your project, approach, or team dynamics moving forward.
- **Online Resources**: If presentations, slides, or meeting recordings were shared, document how these materials can be accessed later (e.g., through a shared drive or link).
- **Meetup Agenda**: Include the event's agenda or a summary of the planned sessions, presentations, or workshops. Be sure to note changes.
- **Feedback**: If possible, gather feedback on-site at the end of the event to ensure high involvement and profit from fresh impressions.

Chapter 4

Best Wiki

Chapter 5

File structure

To facilitate collaborative work on the wiki and minimize merge conflicts in GitLab, it's essential to establish a well-organized file structure. This will help multiple team members work simultaneously without issues, especially for lengthy sites.

Organized Components: For pages with multiple tabs or sections, create individual files for each tab and treat them as components. This modular approach enhances clarity and maintainability.

Suggested Folder Structure

- `project-folder/`
  - `code/`: Additional tools, e.g. Python scripts
  - `public/`: Files you need to be able to access with via url, e.g. java scripts
  - `src/`
    - `app/`: Store the App and other main components.
    - `components/`: Reusable components like buttons, cards, and sections.
    - `data/`: Data sets used for automated components or other elements.
    - `ic/`: ?? and ?? files. Alternatively, you can use a global definition file.
    - `pages/`: The files used as page components.
    - `styles/`: CSS or SCSS files to manage styling consistently.
    - `utils/`: Type Script and JavaScript functions for global use such as ?? or ??.
    - `main.tsx`
    - `navigation.ts`
    - `pages.ts`
    - `index files`
  - `README`
  - `config files`
  - `LICENSE`
  - `index.html`
  - `gitignore`
  - `pipeline file`

This structure can be extended to, for example, include files for headers, sidebars and references per page.

5.1 Naming Conventions

Implement clear and consistent naming conventions for files and folders to enhance navigation and understanding within the project.

- **PascalCase** for props, states and components: *UserProfile, Navbar, ItemList.*
- **camelCase** for variables: *wordCount, primaryColor*
- **Verb-Noun with context** for functions: *UseNavbar, CreateSidebar*
- **Lowercase with Hyphens** for classes and ids: *experiment-header, first-button*
- **Context** for all naming: *Timeline, InfoBoxes, createSidebar*

Chapter 6

Website and page structures

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Attributions

LaTeXcode

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