OpenCensus migration:
HUGO platform theme (w/Markdown),
and Z-Pages UI design

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ABSTRACT

Think back to the first website you built. Most developers start by creating a series of pages contained within individual HTML files. Each will call in assets such as images, CSS and perhaps a sprinkling of JavaScript. You possibly launched these files directly from the file system without a web server. Life was simple.

Difficulties arise as your site becomes larger and more complex. Consider navigation: it may be similar in every file, but adding a new page requires updates to every other. Even references to CSS and images can become awkward as folder structures evolve. Consider collaborations: coordinating continuous integration from multiple sources or departments, needing the liberty to independently modify their portion of a site.

I propose migrating OpenCensus into a HUGO platform theme – a Static Site Generator. [4] An SSG is a compromise between using a hand-coded static site and a full CMS, while retaining the benefits of both. In essence, you generate a static HTML-only website using CMS-like concepts such as templates. The content can them be extracted from Markdown files.

In addition to the site migration, I would also like to work on improving the UI of the Z-Pages and other interfaces within OpenCensus, in an effort to produce a effective experience for the user.

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1 INTRODUCTION

The object of this proposal is the migration of the existing OpenCensus website into a (SSG) HUGO platform theme using Markdown format (plain text formatting syntax).

The HUGO themed site generation can occur on a local development machine or staging server. Once you are satisfied with the modifications and/or additions made to the site, the resulting plain text files are then deployed to a live web server. In the case of Open Census, GitHub is used as the master repository (repo) for the site, where independent collaborators can fork, edit, and create a pull request for review.

The current pipeline may need modification upon completion of the migration. The pipeline is used as an automated continuous integration method. Meaning the flow of the pipeline will flow in this manner; Local HUGO (SSG) repo → GitHub repo → Travis CI → Live web server.

Secondly, I would like to focus on the development and improvement of Z-Pages UI and UIs across OpenCensus. Good UI equals effective output. The best mapped UIs are functional, visual structures that help the user effortlessly and effectively gain insight.

2 TECHNICAL BACKGROUND

2.1 Terminology

Static Site – [6] A website that contains Web pages with fixed content. Each page is coded in HTML and displays the same information to every visitor. Static sites are the most basic type of website and are the easiest to create.

Static Site Generator (SSG) - A static site generator (SSG) is a compromise between using a hand-coded static site and a full CMS. You generate an HTML-only website using raw data (such as Markdown files) and templates. The resulting build is transferred to your live server.

Markdown – [5] A text-to-HTML conversion tool for web writers. Markdown allows you to write using an easy-to-read, easy-to-write plain text format, then convert it to structurally valid XHTML (or HTML).

Repository (Repo) – [7] In software development, a repository is a central file storage location. It is used by version control systems to store multiple versions of files. While a repository can be configured on a local machine for a single user, it is often stored on a server, which can be accessed by multiple users.

2.2 Identification of the Problem

OpenCensus is a collaborative effort by multiple groups focusing on supporting multiple language integrations. Individual groups require the ability to modify and update the corresponding language portions on OpenCensus website they are developing, without funneling their updates through a web developer upon any change.

Migrating the site into a HUGO theme using Markdown is essentially used to convert plain text into HTML. It is a great tool for the non-programming types and technical writers to write text without having to rely on HTML editors.

2.3 Justification for Proposed Work

Since Markdown is just plain text, it can be exported to a variety of applications and can be converted into a various formats such as .pdf, .docx, .HTML, .txt, etc. You don't need to worry about formatting, just start writing and export your document once completed.

Text written in Markdown is the easiest way to write rich format documents without ever touching code or toolbars. The syntax is simple that it can be understood and learned by anyone.

3 TECHNICAL APPROACH

3.1 Objectives

Migrating the OpenCensus website into a HUGO platform theme developing in Markdown, we will accomplish the following;

(1) Streamline input. With the use of Markdown on the HUGO platform, we streamline the input of collaborative works from multiple groups developing for OpenCensus onto the website.

(2) Achieve platform independency. Markdown on HUGO can be written in any text software environment or device. It is also a simple writing system which will make web based documents both easier to write, and easier to read in their raw state.

(3) Ease-of-use. Markdown is plain text formatting syntax for writers. It allows you to quickly write structured content for the web, and have it seamlessly converted to clean, structured HTML. Since markdown is platform independent, non-technical persons can contribute with ease, without a need for HTML knowledge.

(4) As an addition to migrating the OpenCensus website, I also propose my efforts to improve the visual and effective output of the Z-Pages and other interfaces across OpenCensus. There is arguably nothing more important than insuring effective user experience.

3.2 Statement of Work

3.2.1 Project Tasks

The tasks for the Open Census project proposed, as well as, the Z-Pages user interface improvements will be mapped out in combination by the Google Summer of Code mentor assigned to me.

Tasks to be considered include;

Task 1 – Establish the scope and timeline for the migration of OpenCensus website into a HUGO platform theme and Z-Pages UI improvements.

Task 2 – Prioritize the steps to the process (dependent on Open Census mentor).

    Task 2.1 – Prior to coding date, research migration of existing site into HUGO theme. Familiarize myself with the existing Z-Pages UI.

    Task 2.2 – Create a template that can generate a basic HUGO theme page.

    Task 2.3 – Selectively convert pages into Markdown.

Task 3 – Document technical details involved in the migration process.

Task 4 – Map a functional UI for Z-Pages and other interfaces across OpenCensus, with direction from Google Summer of Code mentor.

3.2.2 Project Schedule

Project schedule for completion of each task and overall project completion will remain semi-fluid, until the project mentor and I chart out a schedule of tasks before final proposal submission. A draft of the schedule may follow this timeline;

April 23 – May 14

    (1) Community bonding, spend some time learning about the OpenCensus community.

    (2) Establish the scope and timeline of the project with the assigned mentor.

    (3) Research the conversion of existing site into a HUGO platform theme.

    (4) Research and plan a vision for the Z-Pages UI and UIs across OpenCensus.

May 14 – June 3

    (1) Convert the OpenCesnsu website into a stable HUGO platform theme.

    (2) Convert existing HTML into Markdown formatting.

June 3 – July 2

    (1) Make the Z-PAges UI as intuitive as possible. Use clear and unambiguous wording for all labels. Group appropriately, and maintain consistency throughout the pages.

July 2 – Aug 6

    (1) Make late additions/modifications to site before turning it over to OpenCensus administrators.

    (2) Create technical documentation of the project for OpenCensus administrators.

    (3) Clean-up any code, documentation, or processes before turning the project over to OpenCensus.

4 CAPABILITIES

4.1 Project and Key Personnel

For the completion of the proposed project, I will work with a Google Summer of Code project mentor in order to identify the scope and timeline for the conversion of OpenCensus website a HUGO platform theme, for use with Markdown.

4.2 Equipment and Facilities

No equipment need be purchased for the proposed project. I will work within the boundaries of the Google Summer of Code guidelines and regulations, during the life of the project.

5 ANTICIPATED BENEFITS OF PROPOSED WORK

[3] The benefits of using a HUGO theme, using Markdown is that it is platform-independent, intuitive, easy to learn, human-readable, and uses plain text while providing basic formatting and easy conversion to HTML, the language of the Web.

Improved Performance

Static sites are pre-cached pages which never expire. Files can also be minified prior to deployment to guarantee the smallest load. A static site will always perform better than a CMS-powered version using a similar template.

Fewer Server-Side Dependencies

A static site is lightweight, and can be hosted by any web server able to return HTML files. There is nothing else to install, manage or update.

Improved Reliability

Serving a static site is less intensive — the server just has to return flat files. It's still possible to crash a web server, but it'll take considerably more concurrent requests.

Platform Independent

You can write in Markdown in *anything* that handles plain text - any device, software, or web application supporting plain text can be used to compose or read Markdown. There are apps of all sorts for every platform I can think of that compile the Markdown for you, and export to other .HTML, .text, .pdf, rich text, etc.

Human readable and intuitive

The markup is unobtrusive and intuitive enough that someone who hasn't learned Markdown can read and understand the markup without it getting in the way of the content. Where HTML markup is confusing and obstructs or makes content more difficult to read, even for those who know HTML, Markdown adds to the meaning of the content even when the reader doesn't know Markdown.

Easy to learn

Because Markdown is so intuitive, it is also easy to learn. The syntax is simple and straightforward. I expect most people can get started writing in Markdown in one sitting.

Plain text is durable

Markdown uses plain text, which isn't likely to go away any time soon. So, it is safe to write in Markdown.

6 REFERENCES

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