Icons Picker and Custom Font Generator for
EOS Design System

(Sub org under Python Software Foundation)

Personal Details:

Name: Kartikay Bhutani

Email Address: Kbhutani0001@gmail.com

Time zone: Indian Standard Time (UTC +5:30)

(GitHub, GitLab): /kbhutani0001

LinkedIn: https://www.linkedin.com/in/kartikaybhutani/

Abstract:

- Implementing Icons picker and Custom font generator to let users generate fonts (SVG, TTF, EOT, WOFF and WOFF2) from selected icons through website.
- Moving the current project from Grunt to Backend of https://suse-uiux.gitlab.io/eos-icons/
- Making a User Friendly UI taking Non-Developers in Consideration too.
- Allowing recurrent users to continue building fonts from their previous icons selection

Current Project status:

Although the EOS-icons project lets you generate fonts. The problems with current version are:

- There isn't a separate online platform to select and generate fonts. Cloning and running project locally every time is the only option right now.
- Almost 80% of icons in a font are not used anywhere. This reduces performance of a webpage unnecessarily.
- Hard and lengthy process as you have to Clone the project and look and delete each svg file separately in Directory.
- Requires the user to have knowledge of Grunt and it's CLI installed, which makes it hard for Non-techie people.
- The solution isn't scalable as Grunt is used to automate things locally.

Project Goals:

1. The main goal of this project is to implement Custom font generator in backend of the EOS-icons website and providing user the ability to generate fonts online without any hassle of cloning and running project.
2. Removing any kind of Dependencies so that Non-Techie people (Just Designers) can also benefit from this project.
3. Providing a clean UI/UX so that users can select their icons easily.
4. Allowing users to continue building their previous fonts as per their future needs by providing an **_icons-config.json_** file having data of icons in the built font.
5. Improving the generated web files (Demo page, currently generated in **dist/index.html**) along with a good documentation page to provide users better examples of Font usage.

Implementation Idea and Research:

For the last month I've been researching over this topic and came across the following ideas of implementing this project.

- So to generate a font, user have to select icons on the webpage and the name of selected icons will be passed as parameter to the font generator file, let's say `font-generator.js`
- To generate SVG font file from multiple SVG files, we can use a npm package svgicons2svgfont.

```javascript
const SVGIcons2SVGFontStream = require('svgicons2svgfont');
const fs = require('fs');
const fontStream = new SVGIcons2SVGFontStream({
  fontName: 'eos-icons'
});

// Setting the font destination
fontStream.pipe(fs.createWriteStream('temp/eos-icons.svg'))
  .on('finish',function() {
    console.log('SVG file created!')
  })
  .on('error',function(err) {
    console.log(err);
  });
```

- Once the svg font is created, we can write all the svg files one by one through a loop iterating through icon names which we got through front end.

```
//Defining beginning of unicode value in private range
//F001 in dec = 61441
initial_unicode=61441

var i;
for (i = 0; i < icons.length; i++) {
//generating hex value of unique point
temp=(initial_unicode+i).toString(16)

//passing hex value for unicode generation
unicode=String.fromCharCode("0x"+temp)

//creating readable stream of svg file one by one
const glyph = fs.createReadStream('svg/'+ icons[i] + '.svg' );

glyph.metadata = {
  unicode: [unicode],
  name: icons[i]
};

//writing svg content to open svg font file
fontStream.write(glyph);
}

fontStream.end();
```

- Once the SVG font is created, it can be converted into TTF, EOT, WOFF and WOFF2.

- Since the selected icons is nothing but an array of icon names, this data will be provided to user in a file **_icons-config.json_** so that users can import this file again to continue building their previous fonts.

- Similarly, the HTML and CSS file can also be created while iterating through the same loop.

- A documentation page would be created as well to describe the use of fonts more specifically.

Ps: If there is a way to continue having grunt-webfont in the backend of the website, I am going to prefer it and it'd also make the whole project easier and cleaner. The above approach is just a working backup if Grunt-webfont doesn't work out.
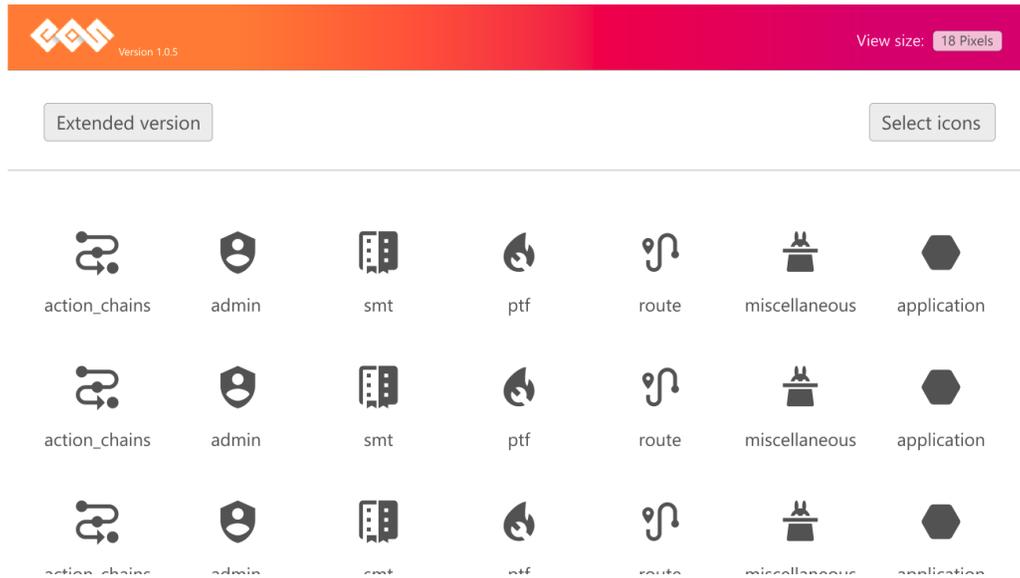
My research and some sample code: https://gitlab.com/kbhutani0001/custom-font-test

Timeline and Deliverables:

Time frame	Start Date	End Date	Tasks
Community Bonding	May 6th	May 27th	
	May 6th	May 12th	Discuss and prepare UI UX
	May 13th	May 21st	Break for End Sem exams
	May 23rd	May 28th	Prepare and test raw code locally for SVG font preparation
First Evaluation	May 28th	June 28th	
	May 28th	June 5th	Finalize SVG font code
	June 6th	June 16th	Prepare code to convert SVG into other font files
	June 17th	June 22th	Prepare front end and merge with backend font generating code

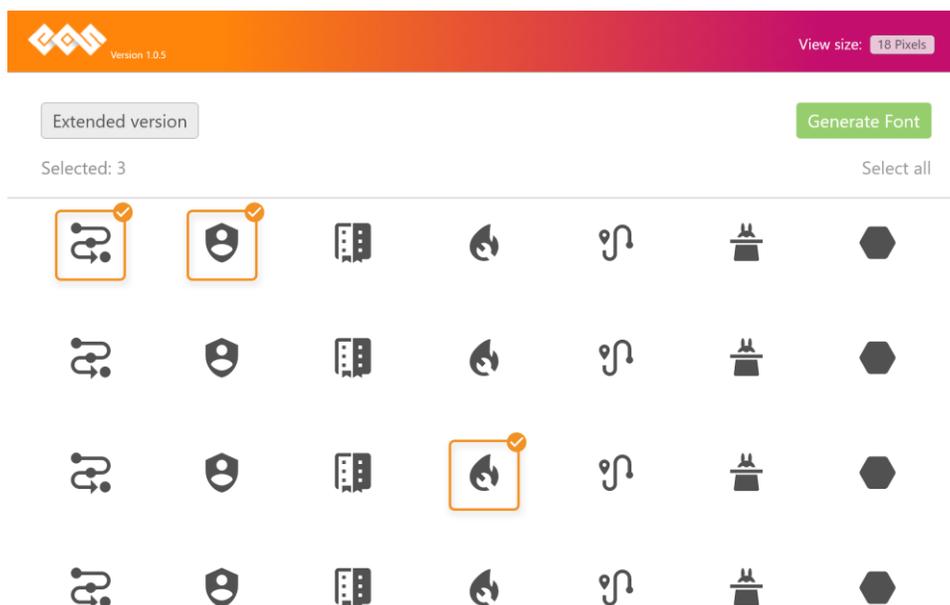|	June 23rd	June 27th	Improve front end UI
Second Evaluation	June 28th	July 26th	
	June 28th	July 8th	Make HTML and CSS templates
	July 9th	July 16th	Make downloadable zip file and download page
	July 17th	July 28th	Prepare backend for Cookie storage
Final Evaluation	July 29th	August 26th	
	July 28th	August 5th	Provide Documentation page, Look for possible bugs, Improve code readability
	August 6th	August 19th	Finalize code and look for any improvements
	August 19th	August 26th	Code review and improvement suggestion by mentors.

UI UX Mockups:

All though the EOS-icons page is to be recreated (As mentioned in GSoC projects list). Here are some screenshots to summarize the working of Custom Font generator.

1. Main Screen will now have option to Select icons

2. Selection of icons can be done in this way and can be switched between EOS icon set and the Extended version.

3. After Generating the font, the user should be able to download the zip file containing all the Files (SVG, TTF, EOT, WOFF, WOFF2, HTML, CSS). The docs link should take the user to the docs section describing how to use those fonts.

Link to prototype: https://xd.adobe.com/view/cd274e8a-d71b-4c39-58a3-e71a1f48c4b8-bb16/

About me:

I am a second year undergraduate student pursuing B.tech. in Electronics and Communication Engineering from Jaypee Institute of Information Technology, Noida.

I have been leading the Designing hub of my college, Prismatic and been a part of OSDC (Open Source Developers Club) for more than two years.

I have always loved hacking problems through code. In my GitHub repo you shall find many open source project hacking real world problems, like the recent one I made to simplify college time table for students through data analysis.

What I liked the most about EOS is the appropriate balance between Designing and Development. Following are the Contributions I made in EOS and some other related work.

My Contributions:

Pull requests (EOS, both merged and open): https://goo.gl/A9NpS2

EOS slack bot: https://gitlab.com/kbhutani0001/eos-bot

Issues: https://goo.gl/di2acF

My other open source projects(Github): https://github.com/kbhutani0001

I have also gone through the whole source code and I believe that I will be able to work comfortably with this project without much difficulties.

FAQ:

Q: Am I applying to GSoC for the first time?

A: Yes

Q: Am I applying to any other Organization too?

A: No

Q: How much time would I be able to devote?

A: I will be able to devote around 30-35 hours per week to this project. I won't be having any other summer internship/training/exams. In case of some family occasion or a few days vacations, I will tell my mentors beforehand and try my best to deliver that part of project on time.

I can assure you that if I get selected to work on this project, I will definitely try my best to make this project a success and not only provide with the deliverables I promised, but even better and improvised version of that.

I would also love to keep contributing to this project even after the summer and even if I may get a chance to mentor in any Educational programs that EOS might have.

Also, for some reason, if I am not selected this year even then I will keep contributing to this and other project and retry next year.

Looking forward to working with you,

Kartikay Bhutani