

Literature Review

Introduction

This literature review is to search and collect existing GitHub code and source tools to change website design file to website code. Including some GitHub projects and exist products to automatically change website design files to HTML, CSS code or code tokens.

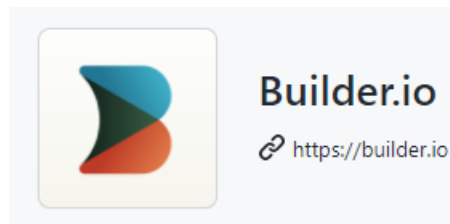
There are three parts in this literature review:

- GitHub Projects for Making Design to Code;
- Some exist paid or free products;
- Other existed resources.

Key Words: website design, code generator, auto tools, deep learning, neural network, Figma, Sketch, HTML, CSS

GitHub Projects for Making Design to Code

1. Builder.io product:



(1) Builder.io/mitosis GitHub Project:



- a) Description: Mitosis combines many functions, including component libraries, modern workflows for all platforms, easy to move JS framework from one absolute to another, and make design to code.

For design to code: With Mitosis, you can convert designs from **Figma** or **Sketch** and convert them to **clean code** for the framework of your choice. You can even use **Builder.io** to visually drag/drop to build UIs and edit the code *side by side*.

- b) GitHub URL: <https://github.com/BuilderIO/mitosis.git>

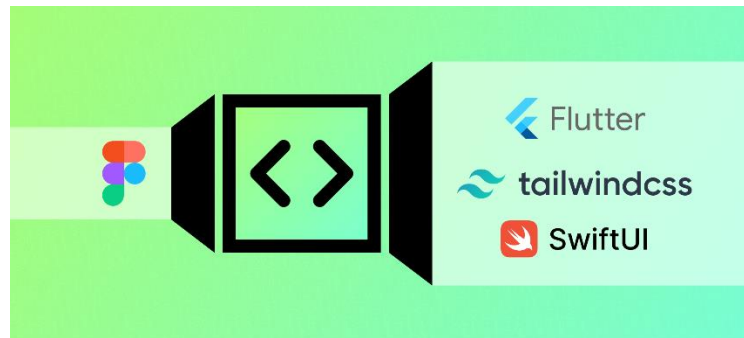
(2) Builder.io/figma-html GitHub Project:



- a) Description: Figma <-> HTML: Instantly convert designs into live webpages and code; Easily import real live site styles for a starting point for designs and prototypes; Quickly turn real site components into design component; Easy import from storybook.

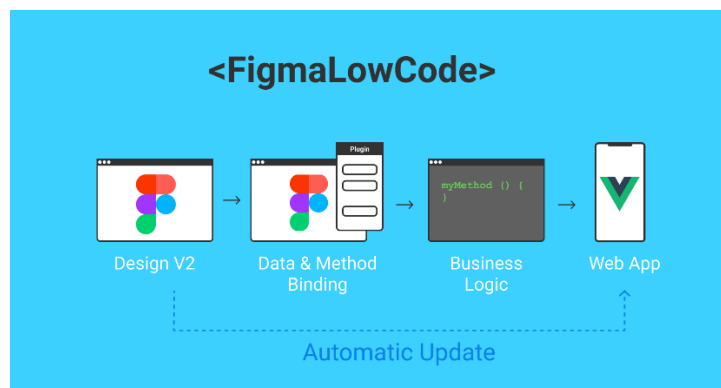
- b) GitHub URL: <https://github.com/BuilderIO/figma-html.git>

2. FigmaToCode:



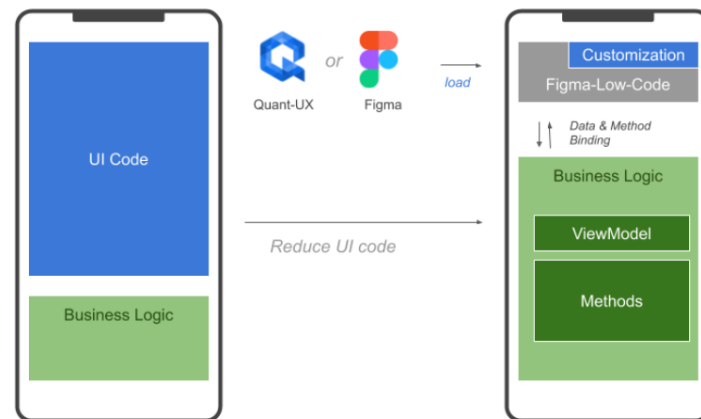
- a) Description: Most *design to code* plugins are bad, some are even paid. This project aims to raise the bar by generating **responsive** layouts in Tailwind, Flutter and SwiftUI. The plan is to eventually add support for Jetpack Compose and possibly standard HTML or other frameworks like React Native, Bootstrap or Fluent. Feedback, ideas and partnerships are appreciated!
- b) Coding language: Typescript, Svelte, JavaScript
- c) GitHub URL: <https://github.com/bernaFerrari/FigmaToCode.git>

3. Figma-Low-Code:



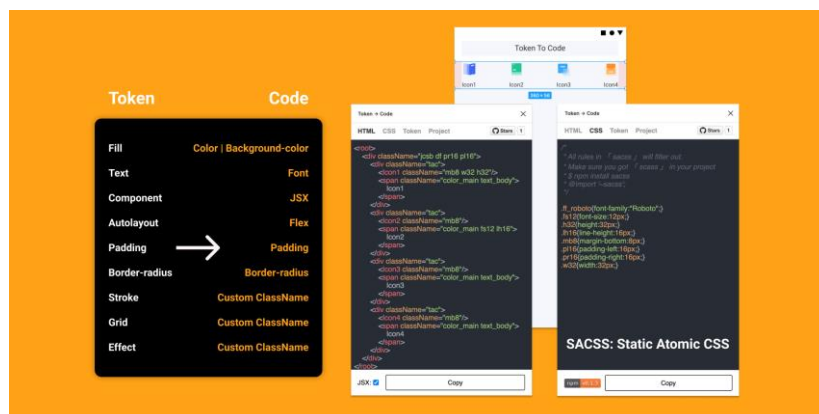
- a) Description: Figma-Low-Code is an OpenSource project, that allows to use **Figma** designs directly in **VUE.js** applications. The low code approach reduces drastically the hand-off time between designers and developers, reduces front-end code and ensures that the Figma design stays the **single source of truth**. Figma-Low-Code uses the Luisa framework.
- b) Coding language: JavaScript, VUE, HTML
- c) GitHub URL: <https://github.com/KlausSchaefer/figma-low-code.git>

4. Vue-Low-Code:



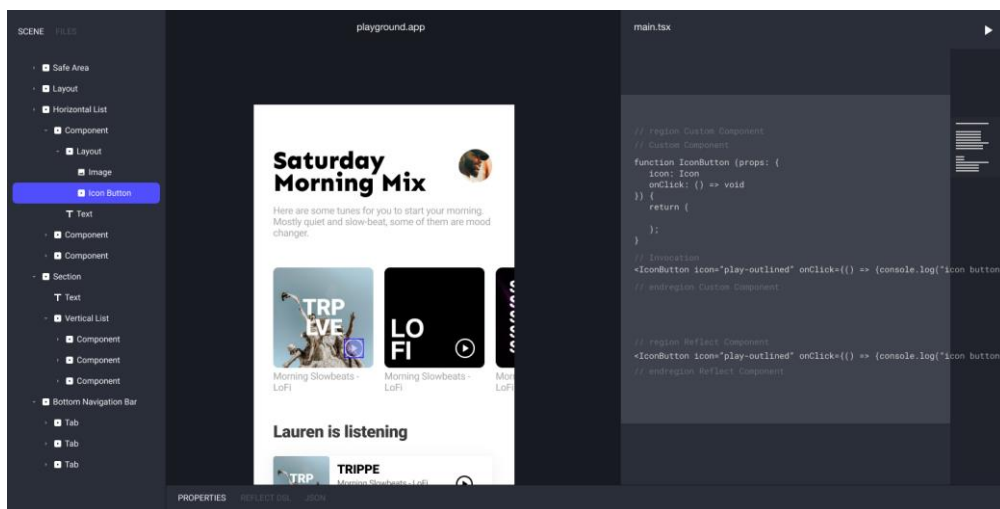
- Description: Vue-Low-Code is an open-source project that turns **Figma** and **Quant-UX** designs into fully functional VUE applications. By ensuring that the design stays the single source of truth, Vue-Low-Code reduces the need for design hand-offs and front-end code significantly.
- Coding language: JavaScript, VUE, SCSS
- GitHub URL: <https://github.com/KlausSchaefer/vue-low-code.git>

5. Figma-token-to-code:



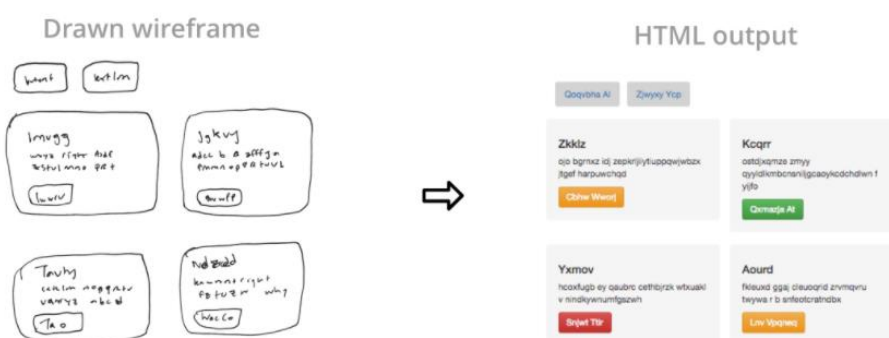
- Description: Figma Token to Code. Generate the node to Html with CSS. The plugin read element you select and let you export them into Html with CSS. If the element with Auto layout it will go to flex.
- Coding language: TypeScript, JS, Less, HTML
- GitHub URL: <https://github.com/s-acss/figma-token-to-code.git>

6. designto-code:



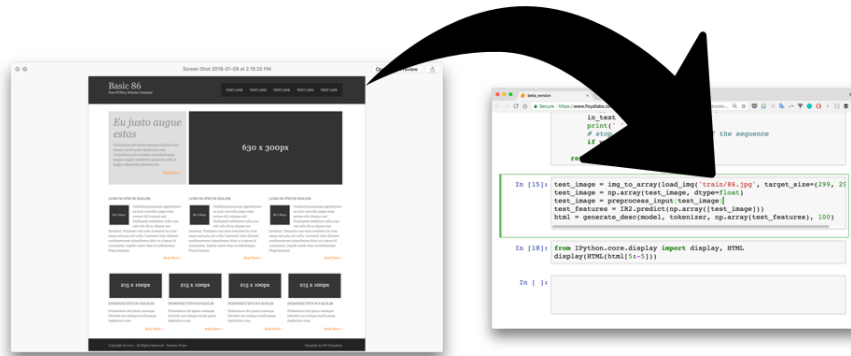
- Description: Change design ([Figma, Sketch, Bridged, XD]) to code([Flutter, React, Svelte, Android, iOS, ReactNative, Vue])
- GitHub URL: <https://github.com/gridaco/designto-code.git>

7. SketchCode:



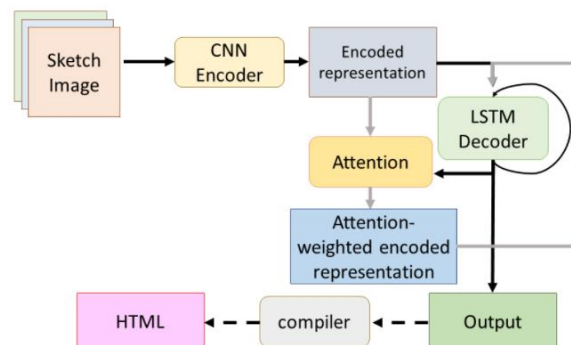
- Description: SketchCode is a deep learning model that takes hand-drawn web mockups and converts them into working HTML code. It uses an image captioning architecture to generate its HTML markup from hand-drawn website wireframes. For more information, check out this post: Automating front-end development with deep learning. This project builds on the synthetically generated dataset and model architecture from pix2code by Tony Beltramelli and the Design Mockups project from Emil Wallner.
- GitHub URL: <https://github.com/ashnkumar/sketch-code.git>

8. Screenshot-to-code:



- a) Description: It builds a neural network that will generate HTML/CSS markup that corresponds to a screenshot. Also when train the neural network, you give it several screenshots with matching HTML. This is an implementation to a tutorial ([How you can train an AI to convert your design mockups into HTML and CSS | by Emil Wallner | Medium](https://medium.com/@emilwallner/how-you-can-train-an-ai-to-convert-your-design-mockups-into-html-and-css-1234567890))
- b) Coding language: Python, HTML, CSS, Jupyter Notebook
- c) GitHub URL: <https://github.com/emilwallner/Screenshot-to-code.git>

9. Sketch2code_with_attention:



- a) Description: This project uses machine learning to generate HTML codes from layout images. Specifically, it is to create a neural network model that interpret a hand sketch of a simple web page design and generate a corresponding HTML code. The model framework will use is **attention-based image captioning**. This is an implementation to a tutorial ([Sketch2code using Visual Attention & LSTM Decoder – Vincent Kieuvongngam – PhD student \(vincentk1991.github.io\)](https://vincentk1991.github.io/Sketch2code-using-Visual-Attention-LSTM-Decoder/))
- b) Coding language: Python, (implemented in Pytorch)
- c) GitHub URL: https://github.com/VincentK1991/Sketch2code_with_attention.git

Some exist paid or free products:

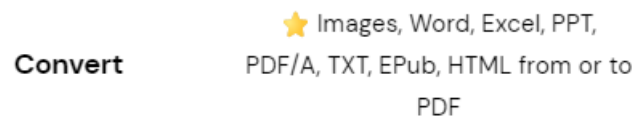
10. CSSChopper Product / Sketch To HTML Conversion:

- a) Service: A paid service for converting sketch file to html and css code.
- b) Product Link: [Sketch to HTML Conversion | Sketch to HTML Services \(csschopper.com\)](https://csschopper.com)

11. Sketch2Code Product:

- a) Service: Transform any hand-drawn design into a HTML code with AI.
- b) Coding language: Python
- c) Product Link (Microsoft AI): [Sketch2Code - Transform sketches into HTML using AI](https://www.microsoft.com/en-us/ai/sketch2code)

12. PDFelement Product:



- a) Service: Transform PDF file to html code, has both desktop and mobile version.
- b) Product Link: [Easy PDF Editor to Create, Convert, Edit PDF - Wondershare PDFelement](https://wondershare.com/pdf-element)

13. RELIABLE Product:

- a) Service: A paid front-end development, convert the design to responsive HTML/CSS for all devices.
- b) Product Link: [Front-End Web Development: The #1 Coding Company In The World \(heyreliable.com\)](https://heyreliable.com)

Other existed resources:

1. Awesome-Design-Tools / Design to Code Tools:

- a) Description: List a lot of useful website builders
 - b) GitHub URL: [goabstract/Awesome-Design-Tools: The best design tools and plugins for everything](https://github.com/goabstract/Awesome-Design-Tools)  (github.com)
- [Anima](#) — a web app with a Sketch plugin that converts Sketch to HTML.
 - [Blocs](#) — a fast, easy to use and powerful visual web design tool, that lets you create responsive websites without writing code.
 - [Bootstrap Studio](#) — a powerful web design tool for creating responsive websites using the Bootstrap framework.
 - [Draftbit](#) — visually design and build mobile apps directly from your browser.
 - [EasyLogic Studio](#) — fantastic css+svg design tool, also it is converted into code as shown.
 - [Grapedrop](#) — design your components, web projects and publish them instantly online, with an easy to use editor.
 - [Mobirise](#) — an offline drag and drop website builder software that is based on Bootstrap 3/4 and \ AMP.
 - [PageCloud](#) — the fastest and most customizable website builder that allows anyone to create their ideal website.
 - [PaintCode](#) — vector drawing app that instantly converts drawings into Swift, Objective-C, JavaScript or Java code.
 - [Pinegrow](#) — a professional visual editor for CSS Grid, Bootstrap 4 and 3, Foundation, responsive design, HTML, and CSS.
 - [px.div](#) — a proper site build tool for developers and designers.
 - [Readymag](#) — a visually-pleasing tool for designing on the web from landing pages to multimedia long-reads, presentations and portfolios.
 - [Sparkle](#) — the easiest way to make a real website, no code, no jargon.
 - [STUDIO](#) — design from scratch, collaborate in real-time and publish websites.
 - [Supernova Studio](#) — import designs from Sketch and convert them into Android, iOS or React Native code.
 - [Tilda](#) — create a website, landing page or online store for free with the help of Tilda modules and publish it on the same day.

- [Wix](#) — the easiest and fullest-featured website builder, that allows you to create your own highly customized site.
- [Webflow](#) — build responsive websites in your browser, then host with us or export your code to host wherever.

2. Awesome-design-to-component-code:

- a) Description: List of GUI design software tools that export to React/Vue components
- b) Link: [skunkwerk/awesome-design-to-component-code: List of GUI design software tools that export to React/Vue components \(github.com\)](#)

3. 40 Best Professional Web Design Software Tools for 2022:

- a) Description: List 40 essential paid and free web design tools available in the market today.
- b) Link: [40 Best Professional Web Design Software Tools for 2022 \(appsumo.com\)](#)