

AI-based Front-End Generation

AI Prompting.

Internship at
iO Digital

Internship Assignment Document

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Context.

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1.1 Introduction

This project will depend mostly on artificial intelligence to create, edit, and integrate temporary theme pages. This means that AI will be responsible for designing the pages, making changes to them, and putting them together in a way that works well. Because the project is relying so much on AI it is very important to find out what it can do and how it can be used in this project.

1.2 Purpose of Research

The purpose of this research is to look at and understand the capabilities of artificial intelligence in creating, editing, and integrating temporary theme pages. Because the project relies a lot on AI it is important to gather information about what AI can do and how it can be effectively used for the specific needs of the project.

Through a few different experiments, the goal is to see what AI is capable of doing and how the AI can be properly prompted to generate the best outcome. These experiments range from creating an HTML page to integrating custom content into it.

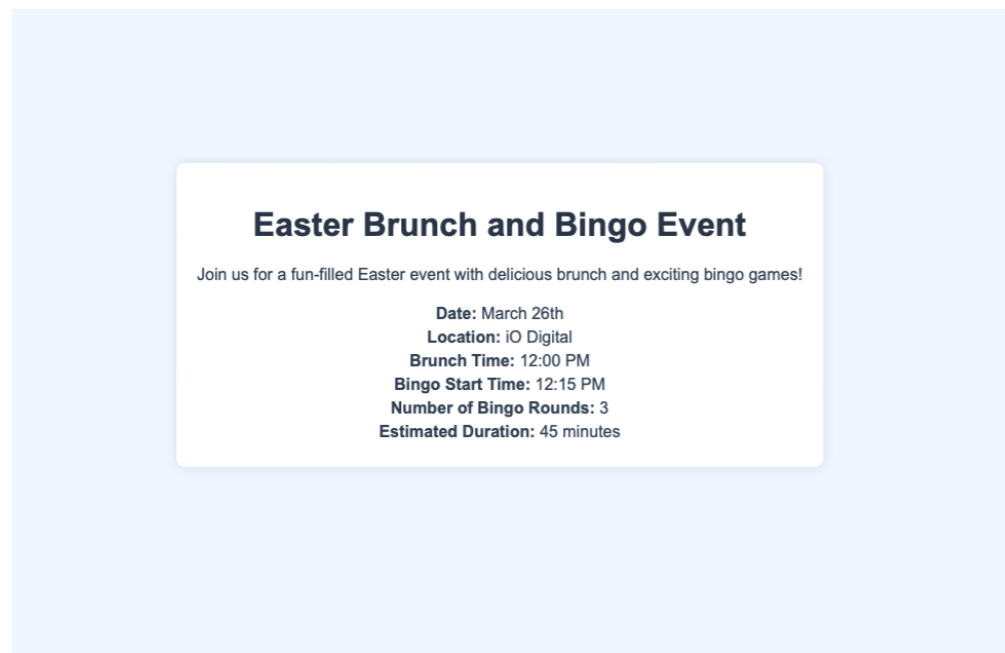
2.1 Creating an HTML page

The first experiment was to try and create an HTML page using only prompting. I used a variety of different prompts in order to only get the HTML without any explanation/comments from the AI. To try and cancel out other factors, the user prompt stayed the same throughout testing and only the system prompts were changed.

Attempt #1

System Prompts:

1. You are a coding expert, you create HTML pages.
2. You always make the pages you make fully responsive.
3. You never make a navbar or menu.

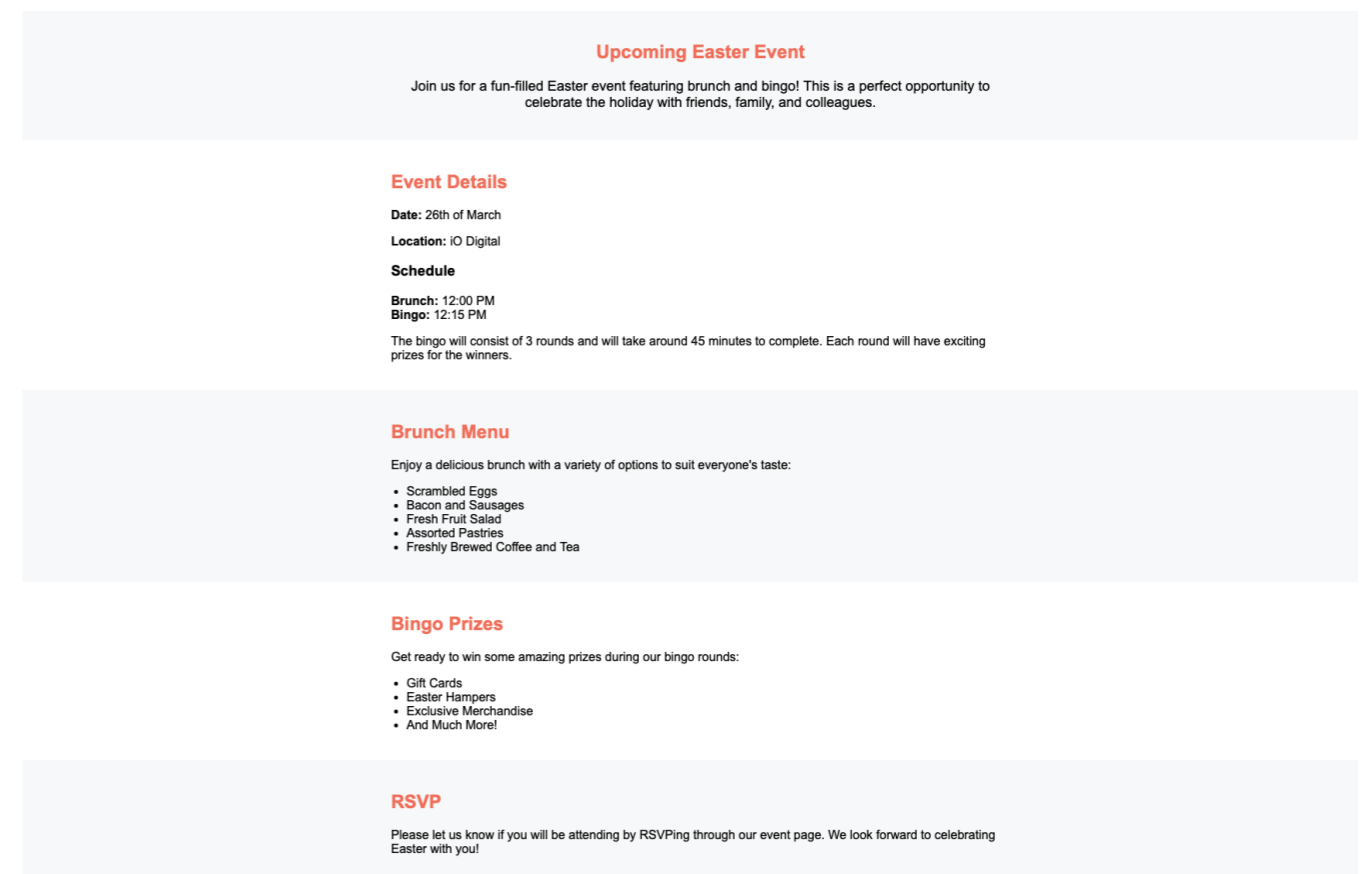


This was already quite decent for just 3 prompts. However there were some issues. For one, the AI gave an explanation of what it had done, which I certainly don't want in the returns. Secondtly, it also returns the head of the HTML which I also don't want. That way I can add and alter the head myself in order to include libraries or change the title. Lastly, I wanted it to produce more in-depth content instead of only a few highlights.

Attempt #2

System Prompts:

1. You are a coding expert, you create HTML pages.
2. You always make the pages you make fully responsive.
3. You never make a navbar or menu.
4. You create several content sections filled with content.
5. You return only the code, nothing else, just the code.
6. You do not add `` ` ` ` ` html around the code.
7. You only return the <body>.



This time, it only returned the body of the page and created a lot more content. This was exactly the base I needed to further iterate and develop on.

2.2 Integrating Tailwind for Styling

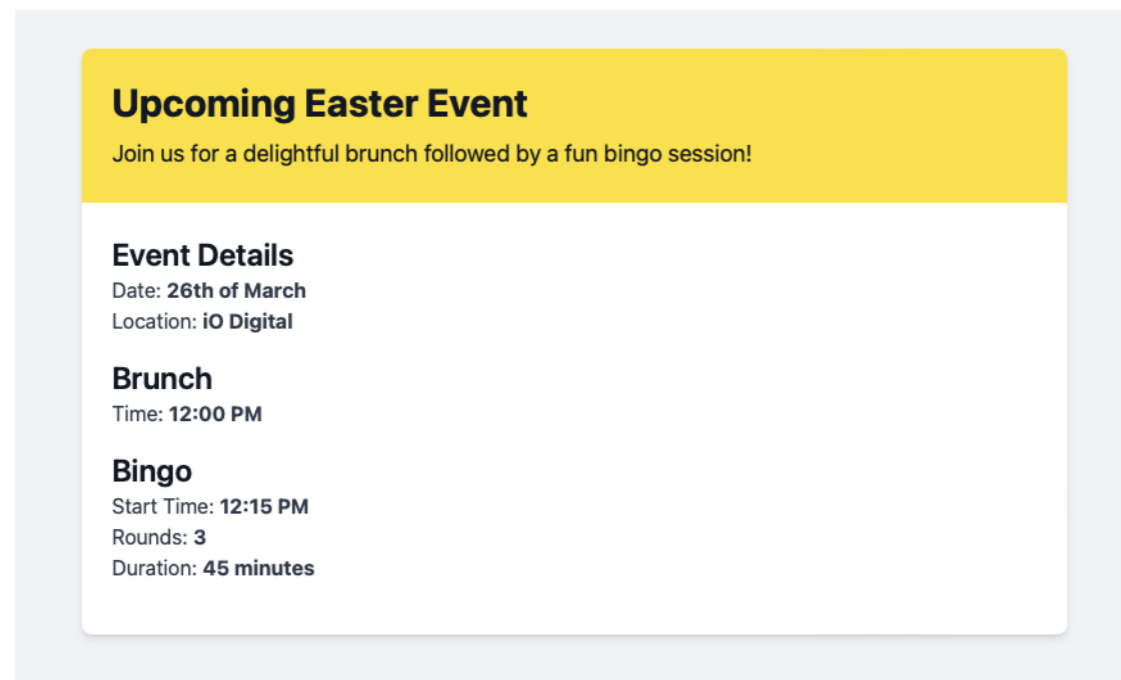
The second experiment was to try and make the styling of the page be done in Tailwind. This is because different companies make use of different styling frameworks. If AI is able to integrate different frameworks, the tool will be alot more implementable.

Attempt #1

Base System Prompts with:

1. You make the styling using Tailwind.

```
<body class="bg-gray-100 text-gray-900 font-sans leading-normal tracking-normal">
  <div class="container mx-auto py-8">
    <div class="bg-white shadow-md rounded-lg overflow-hidden">
      <div class="bg-yellow-300 p-6">
        <h2 class="text-3xl font-bold mb-2">Upcoming Easter Event</h2>
        <p class="text-lg">Join us for a delightful brunch followed by a fun bingo session!</p>
      </div>
      <div class="p-6">
        <div class="mb-4">
          <h3 class="text-2xl font-semibold">Event Details</h3>
          <p class="text-gray-700">Date: <span class="font-bold">26th of March</span></p>
          <p class="text-gray-700">Location: <span class="font-bold">iO Digital</span></p>
        </div>
        <div class="mb-4">
          <h3 class="text-2xl font-semibold">Brunch</h3>
          <p class="text-gray-700">Time: <span class="font-bold">12:00 PM</span></p>
        </div>
        <div class="mb-4">
          <h3 class="text-2xl font-semibold">Bingo</h3>
          <p class="text-gray-700">Start Time: <span class="font-bold">12:15 PM</span></p>
          <p class="text-gray-700">Rounds: <span class="font-bold">3</span></p>
          <p class="text-gray-700">Duration: <span class="font-bold">45 minutes</span></p>
        </div>
      </div>
    </div>
  </div>
</body>
```



The result was great, AI fully used Tailwind instead of plain CSS. A notable thing is that the styling also looks quite a lot better when it uses Tailwind instead of normal CSS.

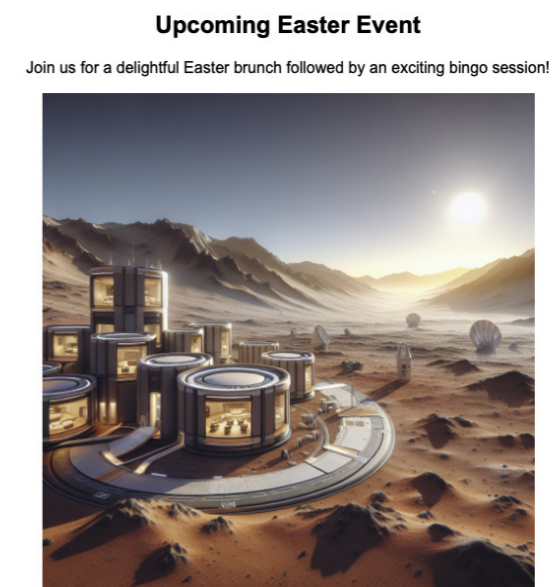
2.3 Integrating Custom Content

The third experiment was to integrate custom content into the HTML pages. This way, custom images for example could be added into the final page.

Attempt #1

Base System Prompts with:

1. Include the following image into the content: <image_url>



That one prompt was all that was needed in order to include an image. This is great because then GPT can take care of placing the images into the page.

2.4 Section Determination

The fourth experiment was to try and let AI split its content up into sections. This way, it will be easier to implement an edit function into the application of this project. By using sections, users can focus on only a part of the page and edit them as they please.

Attempt #1

Base System Prompts with:

1. Make use of `<section>` for each section of the page, always give sections an ID that describes the section.

```
<body>
  <header>
    <h1>Easter Brunch & Bingo Event</h1>
  </header>

  <section id="event-details">
    <h2>Event Details</h2>
    <p>Join us for an exciting Easter event featuring a delightful brunch and an entertaining bingo session!</p>
    <ul>
      <li><strong>Date:</strong> 26th March</li>
      <li><strong>Location:</strong> iO Digital</li>
    </ul>
  </section>

  <section id="brunch-info">
    <h2>Brunch Information</h2>
    <p>The brunch will start at 12:00 PM. Come and enjoy a variety of delicious dishes prepared specially for the occasion.</p>
  </section>

  <section id="bingo-info">
    <h2>Bingo Information</h2>
    <p>The bingo session will start at 12:15 PM. We will play 3 rounds of bingo, which will take approximately 45 minutes in total.</p>
  </section>
</body>
```

With this, AI was able to split up the page into multiple sections. Each of the sections have automatically been given an ID that describes the section. This will be super useful for interpreting the generated HTML inside the application for this project.

2.5 Editing an HTML page

The last experiment was to try and edit certain parts of the generated page based on a section ID. I did this by providing the AI with the generated page and then asking it to rewrite the content of a section ID.

Attempt #1

Base System Prompts with:

1. Use the users' prompt as context to change the HTML.
2. Keep the image URLs the same if present.

User Prompt:

Rewrite the content of section `brunch-info` so that it's more creative.

Before

The screenshot shows a web page layout with three stacked cards. The top card is titled "Event Details" and contains the text: "Join us for a delightful Easter event featuring a brunch and bingo session!", "Date: March 26th, 2024", "Location: iO Digital", and "Time: Brunch at 12:00 PM, Bingo starts at 12:15 PM". The middle card is titled "Brunch Details" and contains the text: "Enjoy a delicious brunch with a variety of foods and beverages. The brunch will commence at 12:00 PM sharp." The bottom card is titled "Bingo Details" and contains the text: "Get ready for an exciting bingo session starting at 12:15 PM. There will be 3 rounds of bingo, which will take approximately 45 minutes in total."

Experimentation.

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After

Event Details

Join us for a delightful Easter event featuring a brunch and bingo session!

Date: March 26th, 2024

Location: iO Digital

Time: Brunch at 12:00 PM, Bingo starts at 12:15 PM

Brunch Details

Indulge in a culinary feast fit for royalty at our Easter brunch! From fluffy pancakes dripping with maple syrup to savory quiches and fresh fruit platters, there's something to tantalize every palate. Pair your meal with freshly squeezed juices or a steaming cup of gourmet coffee. Join us at 12:00 PM sharp to embark on this gastronomic journey and savor the flavors of spring.

Bingo Details

Get ready for an exciting bingo session starting at 12:15 PM. There will be 3 rounds of bingo, which will take approximately 45 minutes in total.

This worked nicely, only the text had been changed and the rest stayed in tact. This will allow the application to make specific changes to the generated HTML.

Conclusion.

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3 Conclusion

Through a series of experiments I was able to see how AI can handle different tasks like generating HTML pages, using Tailwind for styling, adding custom content, splitting content into sections, and editing specific parts of the page.

The first experiment showed that with the right prompts AI can create a fully functional HTML page. By improving the prompts I was able to get the AI to produce a more detailed and usable HTML body. This makes for a good starting point for further development.

The second experiment showed that AI could successfully use Tailwind for styling and even made the pages look better and more professional. This is important because different companies might use different styling frameworks. Having AI that can use these frameworks makes it more usable.

In the third experiment I found that AI could easily integrate custom content like images into the HTML pages. This means that AI can handle not just the structure and style of a page, but also the specific content that needs to be included.

The fourth experiment showed that AI can organize content into sections with each its own unique ID. This is useful for later editing and makes it easier for users to focus on specific parts of the page.

Finally the last experiment showed that AI can edit specific sections of a page based on the section ID. This means users can make specific changes without effecting the rest of the page which can be very handy for making quick edits.