

Project: Prompt to Recipe Generator

Objective

To design a clear, effective prompt that generates creative and usable recipes based on different ingredient sets. This project explores prompt engineering and how small changes in language affect AI outputs.

In this project, we aim to explore the power of prompt engineering by using a single and well-structured prompt to generate recipes. We will apply this prompt across 15 distinct sets of ingredients to assess its consistency in guiding an AI to produce useful outputs. After generating the recipes, we will conduct a brief analysis of the results to evaluate how effectively the prompt directs the AI and where improvements could be made.

Prompt Used :

Write a basic, easy-to-follow recipe using the following ingredients : {insert ingredients} along with common everyday items. The recipe should include a title, a full ingredients list, and simple step-by-step cooking instructions (around 4–5 steps). Keep it beginner-friendly and innovative.

15 Ingredient Sets & Generated Recipes :

1. Ingredients: eggs, cheese, bread

AI's response:

Cheesy Egg Bread Pockets

A warm, gooey, toasty breakfast/snack recipe made with simple ingredients but a twist of fun!

Ingredients:

- 2 slices of bread (white or whole wheat)
- 1 egg
- 2 tablespoons grated cheese (cheddar or mozzarella)
- 1 tablespoon milk
- Salt, to taste

- Black pepper, to taste
 - Butter or oil, for toasting
 - Optional: chili flakes, herbs (oregano/mixed herbs), or finely chopped onions
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Instructions:

1. **Prep the Egg Mixture:**

In a small bowl, crack the egg. Add milk, a pinch of salt and pepper, and beat well. You can mix in herbs or chopped onions for extra flavor.

2. **Stuff the Bread:**

Flatten the bread slices slightly with a rolling pin. Place grated cheese in the center of one slice. Place the second slice on top, and press down the edges with a fork to seal and form a pocket. (Optional: Lightly moisten the edges with water to help them stick.)

3. **Dip and Soak:**


Dip the entire stuffed bread pocket into the egg mixture, making sure both sides are well-coated.

4. **Toast to Golden Goodness:**

Heat a pan with a little butter or oil. Place the egg-coated pocket on the pan and cook for 2–3 minutes on each side, or until golden brown and crispy.

5. **Serve Hot:**

Slice diagonally and enjoy your melty, cheesy egg bread pocket with ketchup or a dipping sauce of your choice!

 **Tip:** Try this with different cheese blends or even leftover veggies for variation!

2. Ingredients: potatoes, onions, garlic

AI's response:

Crispy Garlic Potato-Onion Skillet

A comforting, flavorful dish made with pantry staples—perfect as a snack, side, or quick meal!

Ingredients:

- 2 medium potatoes, peeled and diced
 - 1 medium onion, thinly sliced
 - 3 cloves garlic, finely chopped or minced
 - 2 tablespoons oil or butter
 - Salt, to taste
 - Black pepper, to taste
 - Optional: red chili flakes, herbs (like oregano or thyme), a squeeze of lemon
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Instructions:

1. Prep the Potatoes:

Boil the diced potatoes in salted water for about 5–7 minutes until just tender but not mushy. Drain and set aside.

2. Sauté the Aromatics:

In a non-stick pan, heat oil or butter on medium heat. Add chopped garlic and sauté until golden and fragrant, about 30 seconds. Add sliced onions and cook until soft and slightly caramelized.

3. Crisp the Potatoes:

Add the boiled potatoes to the pan. Spread them out and let them sit for 2–3 minutes without stirring to get a crispy edge. Then flip and repeat.

4. Season It Up:

Sprinkle salt, pepper, and any optional chili flakes or herbs. Mix gently and cook for another 2–3 minutes until everything is golden and flavorful.

5. Serve & Enjoy:

Finish with a squeeze of lemon (optional) and serve hot as a snack, wrap filling, or side dish with toast or rice.

🌟 **Bonus Twist:** Add grated cheese on top in the last minute and cover the pan for a melty upgrade!

3. Ingredients: tomatoes, pasta, basil

AI's response:

Fresh Tomato & Basil One-Pot Pasta


A light, flavorful, and super easy dish that brings out the best of simple ingredients—perfect for a quick lunch or dinner!

Ingredients:

- 1 cup dried pasta (any kind: penne, spaghetti, fusilli)
 - 2 medium tomatoes, chopped
 - A handful of fresh basil leaves (or 1 tsp dried basil)
 - 2–3 garlic cloves, minced
 - 1 tablespoon olive oil or regular cooking oil
 - Salt, to taste
 - Black pepper, to taste
 - Optional: chili flakes, grated cheese
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Instructions:

- Sauté the Base:**
In a large pan or pot, heat oil on medium. Add garlic and sauté for 30 seconds until fragrant. Add chopped tomatoes and cook until soft and saucy (about 5–6 minutes). Mash them slightly with a spoon.
 - Add Pasta & Water:**
Add your pasta directly to the pan. Pour in enough water to just cover the pasta (about 2–2.5 cups). Add salt and stir. Let it boil uncovered, stirring occasionally.
 - Simmer & Soak In Flavor:**
Cook until the pasta is tender and the water is mostly absorbed (10–12 minutes). Stir occasionally to prevent sticking. If it dries out too fast, add a little more water.
 - Add Basil & Finish:**
Once the pasta is cooked and saucy, stir in fresh basil leaves. Add pepper, optional chili flakes, or cheese if desired.
 - Serve Warm:**
Plate it up and enjoy your fresh, no-fuss tomato basil pasta straight from one pot!
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 **Quick Tip:** Want it creamier? Stir in a spoonful of cream or butter at the end for a luscious finish.

4. Ingredients: chickpeas and parsley



Chickpea Lemon Salad

A refreshing, protein-packed dish that's quick, healthy, and bursting with flavor—perfect as a light meal or snack!

Ingredients:

- 1 cup cooked chickpeas (or 1 can, drained and rinsed)
 - 2 tablespoons fresh lemon juice
 - 2 tablespoons chopped fresh parsley (or 1 tsp dried)
 - 1 tablespoon olive oil (or any cooking oil)
 - 1 garlic clove, minced (optional)
 - Salt, to taste
 - Black pepper, to taste
 - Optional: chopped cucumber or tomato for crunch, chili flakes for heat
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Instructions:

1. **Mix the Base:**

In a bowl, combine chickpeas, chopped parsley, and minced garlic (if using). Toss gently.

2. **Make the Dressing:**

In a small cup or bowl, mix lemon juice, olive oil, salt, and pepper. Stir well to combine.

3. **Toss It All Together:**

Pour the dressing over the chickpeas and mix everything until well coated. Let it sit for 5–10 minutes to soak in flavor.


4. **Add Extras (Optional):**

For more texture, toss in chopped cucumber or tomato. For a spicy kick,

sprinkle some chili flakes.

5. Serve & Enjoy:

Serve chilled or at room temperature. Great as a snack, wrap filling, or side dish!

 **Quick Tip:** Mash a few chickpeas while mixing for a creamier texture without adding anything extra!

5. Ingredients: rice, peas, carrots

AI's response:

Garden Veggie Fried Rice

A colorful, quick, and satisfying dish using everyday staples—perfect for lunch, dinner, or even a hearty snack!

Ingredients:

- 1 cup cooked rice (preferably leftover or cooled)
 - ½ cup green peas (fresh or frozen)
 - ½ cup chopped carrots
 - 1 tablespoon oil or butter
 - 1 garlic clove, minced (optional)
 - Salt, to taste
 - Black pepper, to taste
 - Optional: soy sauce, chili flakes, or a pinch of sugar
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Instructions:

1. Cook the Veggies:

Heat oil or butter in a pan over medium heat. Add garlic (if using) and sauté for a few seconds. Add chopped carrots and peas, and cook for 3–4 minutes until tender.

2. **Add the Rice:**

Add the cooked rice to the pan. Break up any clumps and mix well with the veggies.

3. **Season It Up:**

Sprinkle in salt and pepper. You can also add 1–2 teaspoons of soy sauce and a pinch of sugar for an extra flavor boost.

4. **Stir-Fry to Perfection:**

Stir-fry everything together for 3–5 minutes until the rice is hot and slightly crisp at the edges.

5. **Serve & Enjoy:**

Serve warm, garnished with a sprinkle of chili flakes or a squeeze of lemon if desired!

 **Tip:** Add an egg or paneer cubes for protein, or customize with your favorite veggies!

6. Ingredients: spinach, cheese, tortilla

AI's response:

Spinach & Cheese Wrap

A quick, crispy, and gooey wrap loaded with cheesy spinach goodness—perfect for breakfast, snack, or a light meal!


Ingredients:

- 1 large tortilla (or 2 small ones)
 - 1 cup fresh spinach leaves (or ½ cup cooked)
 - ½ cup grated cheese (cheddar, mozzarella, or a mix)

 - 1 teaspoon oil or butter
 - Salt, to taste
 - Black pepper, to taste
 - Optional: chopped garlic, chili flakes, or herbs
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Instructions:

- Sauté the Spinach:**
Heat oil or butter in a pan. Add spinach and cook for 1–2 minutes until wilted. Season with a pinch of salt and pepper. Add chopped garlic or chili flakes if you like extra flavor.
- Assemble the Quesadilla:**
Place the tortilla on a plate. Sprinkle cheese on one half, then add the sautéed spinach on top. Fold the tortilla over to make a half-moon shape.
- Toast the Wrap:**
Place the folded tortilla on a hot pan. Cook on medium heat for 2–3 minutes per side until golden brown and crispy, and the cheese is melted.
- Cool & Cut:**
Remove from the pan and let it cool slightly. Cut into wedges or halves.
- Serve & Enjoy:**
Serve hot with ketchup, yogurt dip, or any sauce you love!

 **Bonus Twist:** Add corn, mushrooms, or leftover veggies for extra texture and taste!

7. Ingredients: milk, oats, banana

AI's response:

Creamy Banana Oatmeal Bowl

A warm, naturally sweet, and nourishing breakfast made with just a few ingredients—perfect for busy mornings!

Ingredients:

- ½ cup rolled oats
- 1 cup milk (any kind—dairy or plant-based)
- 1 ripe banana
- A pinch of salt

- Optional: cinnamon, honey/maple syrup, nuts, or seeds for topping
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Instructions:

1. **Mash the Banana:**

In a bowl, mash the ripe banana until mostly smooth. This will naturally sweeten your oats.

2. **Cook the Oats:**

In a small saucepan, combine oats, milk, mashed banana, and a pinch of salt. Cook over medium heat, stirring occasionally.

3. **Simmer to Creaminess:**

Let the mixture simmer for 5–7 minutes until the oats are soft and the texture is creamy. Stir often to prevent sticking.

4. **Add Flavor (Optional):**

Stir in a pinch of cinnamon or a drizzle of honey/maple syrup if desired.

5. **Serve & Top:**

Pour into a bowl and top with banana slices, nuts, or seeds. Serve warm and enjoy your cozy bowl!

☀️ **Quick Twist:** For a chilled version, prep the same ingredients the night before and refrigerate—enjoy as overnight oats the next morning!

8. Ingredients: chicken and yogurt

AI's response:

Creamy Yogurt Chicken Skillet

A simple, tender, and flavorful chicken dish marinated in yogurt—perfect for beginners and ready in under 30 minutes!

Ingredients:

- 250g boneless chicken (cut into small pieces)
 - ½ cup plain yogurt
 - 1 teaspoon garlic paste or minced garlic
 - 1 teaspoon oil or butter
 - Salt, to taste
 - Black pepper, to taste
 - Optional: turmeric, chili powder, cumin, or herbs for extra flavor
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Instructions:

1. Marinate the Chicken:

In a bowl, mix yogurt, garlic, salt, pepper, and any optional spices you like. Add chicken pieces and coat well. Let it marinate for at least 15 minutes (or longer if you have time).

2. Heat the Pan:

In a non-stick skillet or pan, heat oil or butter over medium heat.

3. Cook the Chicken:


Add the marinated chicken (along with the yogurt mixture) to the pan. Cook uncovered for 6–8 minutes, stirring occasionally, until the chicken is fully cooked and the yogurt reduces into a thick, creamy coating.

4. Simmer & Finish:

Let it simmer for another 2–3 minutes on low heat to allow the flavors to blend. Adjust salt or spice if needed.

5. Serve Hot:

Serve with rice, flatbread, or even inside wraps or sandwiches!

 **Bonus Idea:** Add chopped onions or bell peppers to the pan for extra crunch and flavor!

9. Ingredients: apples and cinnamon

AI's response:

Warm Cinnamon Apple Bites

A quick, cozy treat made with just apples, cinnamon, and pantry staples—perfect for snacking or dessert!

Ingredients:

- 2 apples (any kind), peeled and chopped
 - 1 tablespoon sugar (or honey)
 - ½ teaspoon ground cinnamon
 - 1 teaspoon butter or oil
 - Optional: pinch of salt, a splash of lemon juice, or a handful of nuts
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Instructions:

1. **Prep the Apples:**
Peel and chop the apples into bite-sized pieces. (You can keep the skin on for extra fiber if you prefer.)
 2. **Cook in a Pan:**
In a small pan, melt butter over medium heat. Add the apples and sauté for 2–3 minutes.
 3. **Add Flavor:**
Sprinkle sugar and cinnamon over the apples. Stir well to coat. Add a pinch of salt or a splash of lemon juice if desired.
 4. **Simmer Until Soft:**
Cook for another 5–6 minutes, stirring occasionally, until the apples are soft and caramelized.
 5. **Serve Warm:**
Enjoy on their own, over toast, pancakes, oatmeal, or even with ice cream!
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✨ **Bonus Twist:** Add crushed nuts or granola on top for a crunchy finish!

10. Ingredients: lentils, tomato, cumin

AI's response:

Easy Tomato Cumin Lentil Soup

A warm, comforting, and protein-rich dish with a burst of tomato and earthy cumin—perfect for any day!

Ingredients:

- ½ cup lentils (red or yellow work best)
 - 1 medium tomato, chopped
 - ½ teaspoon cumin seeds or ground cumin
 - 1 teaspoon oil or butter
 - 2 cups water
 - Salt, to taste
 - Optional: turmeric, chili powder, garlic, or coriander for extra flavor
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Instructions:

- 1. Rinse & Boil the Lentils:**
Rinse lentils thoroughly. In a pot, add lentils, chopped tomato, and 2 cups of water. Bring to a boil, then reduce to a simmer and cook for 15–20 minutes until soft. Add salt midway through.
 - 2. Mash or Blend (Optional):**
Once cooked, mash slightly with the back of a spoon for a thicker texture, or blend for a smooth soup if you prefer.
 - 3. Prepare the Tadka (Tempering):**
In a small pan, heat oil or butter. Add cumin seeds (or ground cumin) and let them sizzle for a few seconds. Optional: add a pinch of turmeric, garlic, or chili powder here.
 - 4. Mix & Simmer:**
Pour the tempering into the lentils. Stir well and let everything simmer together for another 2–3 minutes.
 - 5. Serve Warm:**
Enjoy your lentil soup with rice, flatbread, or just a spoon!
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🌟 **Bonus Idea:** Add a squeeze of lemon and chopped coriander on top for a fresh finish!

11. Ingredients: cream and mushrooms

AI's response:

🍄 Creamy Garlic Mushrooms

A rich, velvety dish that's super simple to make—great as a topping, side dish, or even a quick snack!

Ingredients:

- 1 cup mushrooms, sliced
 - ¼ cup fresh cream
 - 1 teaspoon oil or butter
 - 1 garlic clove, minced (optional but tasty)
 - Salt, to taste
 - Black pepper, to taste
 - Optional: herbs like thyme or oregano, chili flakes for heat
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Instructions:

- 1. Sauté the Mushrooms:**
Heat oil or butter in a pan over medium heat. Add garlic (if using) and sauté for 30 seconds. Add sliced mushrooms and cook for 4–5 minutes until they release moisture and start to brown.
- 2. Season It:**
Sprinkle salt and pepper to taste. Add optional herbs or chili flakes if desired.
- 3. Add the Cream:**
Lower the heat and pour in the cream. Stir well to coat the mushrooms. Let it simmer for 2–3 minutes until the sauce thickens slightly.
- 4. Taste & Adjust:**
Taste and adjust salt or seasoning as needed. Don't overcook or the cream may

curdle—just a gentle simmer is enough.

5. **Serve Hot:**

Serve warm over toast, pasta, rice, or as a creamy side dish!

 **Bonus Idea:** Spread on garlic bread or use as a filling in wraps or sandwiches!

12. Ingredients: corn, butter, pepper

AI's response:

Buttery Pepper Corn Cups

A quick, flavorful snack made with just a few ingredients—perfectly buttery with a peppery kick!

Ingredients:

- 1 cup sweet corn kernels (boiled or frozen)
 - 1 tablespoon butter
 - ½ teaspoon black pepper (adjust to taste)
 - Salt, to taste
 - Optional: lemon juice, chili flakes, cheese, or herbs
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Instructions:

1. **Cook the Corn:**

If using raw or frozen corn, boil or steam until tender (about 5–7 minutes). Drain and set aside.

2. **Melt the Butter:**

In a pan, melt butter over medium heat. Once melted, add the corn and stir to coat well.

3. **Add Seasoning:**

Sprinkle black pepper and salt over the corn. Stir for 1–2 minutes to mix and


heat evenly.

4. **Optional Boost:**

Add a squeeze of lemon juice, a pinch of chili flakes, or grated cheese for extra flavor if desired.

5. **Serve Warm:**

Spoon into small bowls or cups and enjoy hot as a snack, side dish, or party bite!

 **Tip:** For a creamier version, add a splash of milk or cream while cooking and simmer for a minute!

13. Ingredients: bell peppers, onion, tofu

AI's response:

Sautéed Tofu with Bell Pepper & Onion

A quick, colorful, and protein-rich stir-fry that's simple yet packed with flavor—perfect as a light meal or wrap filling!

Ingredients:

- 1 cup tofu, cubed
 - 1 bell pepper, sliced (any color)
 - 1 medium onion, sliced
 - 1 tablespoon oil
 - Salt, to taste
 - Black pepper, to taste
 - Optional: soy sauce, garlic, chili flakes, or lemon juice
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Instructions:

1. **Prep the Tofu:**

Pat tofu dry with a paper towel to remove excess moisture. (Optional: Lightly pan-fry tofu cubes in a bit of oil until golden for a firmer texture.)

2. **Sauté the Veggies:**

In a pan, heat oil over medium heat. Add sliced onions and bell peppers. Sauté for 3–4 minutes until slightly soft but still crisp.

3. **Add Tofu & Flavor:**

Add tofu cubes to the pan. Season with salt, pepper, and any optional additions like a splash of soy sauce, garlic, or chili flakes.

4. **Cook Together:**

Stir everything gently and cook for another 3–4 minutes, allowing the tofu to soak in the flavors.

5. **Serve & Enjoy:**

Serve hot as a side dish, wrap filling, or over rice or noodles!

✨ **Quick Tip:** Squeeze a little lemon juice before serving for a fresh, zesty twist!

14. Ingredients: eggs, flour, milk

AI's response:

Fluffy 3-Ingredient Pancakes

A simple and fun recipe using just eggs, flour, and milk—perfect for a quick breakfast or snack!

Ingredients:

- 1 cup all-purpose flour
 - 1 cup milk (any kind)
 - 1 egg
 - Pinch of salt
 - Optional: 1 tbsp sugar, vanilla essence, or a sprinkle of cinnamon
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Instructions:

1. **Make the Batter:**

In a bowl, whisk the egg and milk together until well combined. Gradually add the flour (and optional sugar or cinnamon), whisking to form a smooth batter with no lumps.

2. **Preheat the Pan:**

Heat a non-stick pan over medium heat. Lightly grease with a few drops of oil or a bit of butter.

3. **Cook the Pancakes:**


Pour a ladleful of batter onto the pan. Let it cook for 1–2 minutes until bubbles appear on the surface. Flip and cook the other side for another minute until golden.

4. **Repeat:**

Continue with the remaining batter, greasing the pan lightly as needed.

5. **Serve & Enjoy:**

Stack up the pancakes and serve warm with honey, jam, butter, or fresh fruit!

 **Tip:** Add mashed banana or chopped chocolate for fun, easy twists!

15. Ingredients: yogurt, cucumber, mint

AI's response:

Cool Mint Cucumber Yogurt Dip (Raita Style)

A refreshing, creamy dish that pairs perfectly with spicy food—or can be enjoyed solo as a healthy dip or snack!

Ingredients:

- 1 cup plain yogurt
- ½ cucumber, grated or finely chopped
- 1 tablespoon fresh mint leaves, finely chopped (or ½ tsp dried mint)
- Salt, to taste
- Black pepper, to taste

- Optional: a pinch of roasted cumin powder or chili flakes
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Instructions:

1. **Prep the Cucumber:**

Grate or finely chop the cucumber. If it's watery, gently squeeze out excess water to avoid thinning the yogurt.

2. **Mix the Base:**

In a bowl, whisk the yogurt until smooth and creamy.

3. **Add the Good Stuff:**


Stir in the cucumber and chopped mint. Add salt and pepper to taste. You can also add cumin powder or chili flakes for extra flavor.

4. **Chill (Optional):**

Let it rest in the fridge for 10–15 minutes to let the flavors blend.

5. **Serve Cool:**

Enjoy it as a dip, side dish with rice or flatbread, or even as a cooling sauce in wraps!

 **Bonus Twist:** Add chopped onions or a squeeze of lemon for extra zing!

Overall Prompt Effectiveness

This was a test project on how a single good prompt can assist AI in generating many various recipes. The idea was straightforward, provide a list of ingredients and instruct the AI to author a simple and straightforward recipe with these ingredients, using ordinary kitchen stuff. The prompt called for a title, complete list of ingredients, and 4-5 steps to prepare. We employed this same question to 15 other groups of ingredients and the answers turned out quite nicely and helpful.

The majority of the recipes adhered to the format quite well. They were nicely worded with catchy titles, and instructions were clearly understandable, even for someone who doesn't cook often. It even offered additional advice without prompting like adding lemon or cheese in case you wish to experiment. The highlight was that the AI did not simply replicate the same concept repeatedly. It even created different types of dishes, some to be used as snacks, others for lunch, some being sweet and some spicy.

Also, the tone in which the recipes had been written seemed conversational. It did not seem like a machine, it actually seemed like someone was speaking to you and guiding you step by step. That is a big deal because when people read recipes, they do not want to be scared, they want to feel confident. This kind of tone created this feeling of everything being possible.

Another thing that was pleasant to observe is the way the AI utilized the ingredients smartly. For instance, if we provided it with rice, peas, and carrots, it prepared fried rice. If we provided it with yogurt and chicken, it prepared a creamy dish which sounded delicious and easy to prepare. Even with apples and cinnamon alone, it provided a comforting snack idea. This indicates that the AI knows what type of dish can be prepared using short lists of ingredients, and how it can be made tasty without being difficult.

There were minor issues as well. Sometimes the recipes had more than 5 steps, or they instructed us to use devices like blender or special pans without specifying it clearly. And sometimes a couple of recipes included too many optional things which could confuse a beginner. But nevertheless, the prompt worked quite well most of the time and produced results that felt natural and fun.

In the end, this was a really cool experiment. It demonstrated that with a single sentence written well, we get loads of creative suggestions from AI. It's not only about food, it's about how shifting words in a prompt can shift what the AI produces. Perhaps next time we can experiment with shorter recipes or children's recipes with the same technique. But even now, this project shows how powerful a small prompt can be when used in a smart way.

