

### **Motivations and Intentions:**

For this assignment, we wanted to explore a type of “networked space” that actively involves multiple users in a shared decision-making environment. Our project, *The Collective Wheel*, is derived from a larger application that we have been developing for our other class called *Split Decision*, which focuses on simplifying and gamifying group decision-making. In social situations, whether among friends, classmates, or communities, decision paralysis is very common. Even simple questions like “What should we eat?” or “Which movie should we watch?” can lead to long debates, indecision, or frustration. Our intention with this project was to provide a playful yet functional tool that helps a group reach a final choice fairly, democratically, and transparently.

*The Collective Wheel* specifically reflects our interest in designing a space where multiple users contribute equally, and where every person’s input matters. Instead of one user dominating the choice, the collective input of participants forms the options on the wheel. When the wheel is spun, the outcome represents a moment of shared chance, almost like fate having the final say. This introduces both tension and excitement into the experience, turning something as ordinary as making a decision into a meaningful social interaction.

This also aligns with real-world digital systems where user-generated data continuously shapes the environment (for example: Twitch polls, Discord bots, or collaborative tools like Miro). In many digital experiences, users participate indirectly, here, we explore a model where every action directly impacts the database and the future of the shared environment. This idea of a digital space that changes based on collective behavior served as our conceptual backbone.

In terms of emotional motivation, we were inspired by the way decision-making affects group dynamics, sometimes bringing people together, sometimes causing tension or anxiety. Our intention was to create something that removes stress and replaces it with amusement and curiosity, while technically demonstrating our ability to maintain persistent state across different users and moments in real time.

### **Implementation and Technical Foundations**

This project is implemented using HTML, CSS, JavaScript, Python, Flask and MongoDB Atlas. Each wheel is stored in a MongoDB document that contains its title, the list of options added by users, and a spin history that is automatically updated every time the wheel is spun. When a user performs an action (such as adding or removing an option, or spinning the wheel), an asynchronous fetch request is made to the Flask backend, updating the database and sending a response back to the client without refreshing the page. The wheel is dynamically drawn using the HTML Canvas API, which allowed us to calculate the geometry of slices based on the number of options and animate the spinning motion with smooth easing curves. A winning segment triggers a celebration effect (confetti and visual glow), making the result more exciting and attention-grabbing. The

interface updates instantly, showing both a leaderboard (which option has won the most historically) and spin history (which tracks past outcomes).

### **Expected Outcomes & What Users Experience:**

The expected outcome of this project is to design a website to encourage participation and trust in fair decision-making. When users interact with *The Collective Wheel*:

1. They contribute options → their input matters
2. They witness the results visually → the system responds clearly
3. They see record growth → their actions shape shared history
4. They all share the same results → no one owns the outcome

This tool would be especially useful in situations where people do not want to argue over small decisions or cannot agree. The wheel becomes a neutral, entertaining, democratic decider. The theoretical impact is that users feel relieved from responsibility and instead enjoy a playful moment by relying on fate instead.

### **References and Resources:**

To complete this project, we relied on a combination of class material, online programming documentation, and a few targeted tutorials that helped us understand specific techniques we needed for animation, drawing on canvas, and handling real-time data updates.

For drawing and animating the wheel using the HTML Canvas API, we used the official MDN documentation as a reference to understand principles such as drawing shapes, rotating canvas elements, and rendering text inside rotated slices:

- MDN Web Docs, Canvas API Tutorial (Drawing Shapes)  
[https://developer.mozilla.org/en-US/docs/Web/API/Canvas\\_API/Tutorial/Drawing\\_shapes](https://developer.mozilla.org/en-US/docs/Web/API/Canvas_API/Tutorial/Drawing_shapes)

We also watched video tutorials that helped guide our logic for spinning animations and wheel geometry:

- Spin the Wheel Tutorial, YouTube  
<https://www.youtube.com/watch?v=CkSOKSR4UD4>
- Wheel of Fortune Spin Animation, YouTube  
[https://www.youtube.com/watch?time\\_continue=1193&v=ETFdNsBP04c&embeds\\_refering\\_euri=https%3A%2F%2Fcodingartistweb.com%2F&source\\_ve\\_path=MjM4NTE](https://www.youtube.com/watch?time_continue=1193&v=ETFdNsBP04c&embeds_refering_euri=https%3A%2F%2Fcodingartistweb.com%2F&source_ve_path=MjM4NTE)

As for the website design, we got our color palette and background color from gradienty.codes:

- <https://gradienty.codes/>

In addition to our own development work, we also used ChatGPT mainly for debugging issues that were difficult to solve alone. For example, fixes were needed for handling timestamps correctly, resolving event-driven updates not displaying in real time, and identifying JavaScript elements

that were preventing leaderboard and history data from loading properly. We used AI only for troubleshooting and code correctness, while the conceptual design, user-interface layout, canvas drawing logic, feature requirements, and final functionality were fully built and understood by us.

### **Conclusion**

Through this project, we successfully created a networked environment that allows multiple users to collectively shape and alter a shared decision-making tool. Our motivations were centered around solving a common social challenge in a creative and fun way. We believe that the playful mechanics increase user engagement, while the persistent database features support the conceptual intention of collective participation and stored memory. Technically, this work reflects our progress throughout the course, integrating design considerations with real-time programming and database management.

## Screen Grabs:


The Collective Wheel

Home Spin the Global Wheel

### Spin The Global Wheel

Spin the wheel! Let chance pick the winning option to help your group make a quick and fair decision.

#### Where to Eat



SPIN

#### Options

- Ramen ✕
- Takoyaki ✕
- Apple ✕
- Sushi ✕
- tacos ✕

Hide History

Takoyaki — 2025-11-30

tacos — 2025-11-30

Sushi — 2025-11-30

Takoyaki — 2025-11-30

Sushi — 2025-11-30

Ramen — 2025-11-30

Apple — 2025-11-30

Sushi — 2025-11-29

Takoyaki — 2025-11-29

Apple — 2025-11-29

Ramen — 2025-11-29

Apple — 2025-11-29

Ramen — 2025-11-29

Takoyaki — 2025-11-29

Apple — 2025-11-28

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tacos ✕

Add new option

Add

#### Leaderboard

Takoyaki — 4 wins

Apple — 4 wins

Ramen — 3 wins

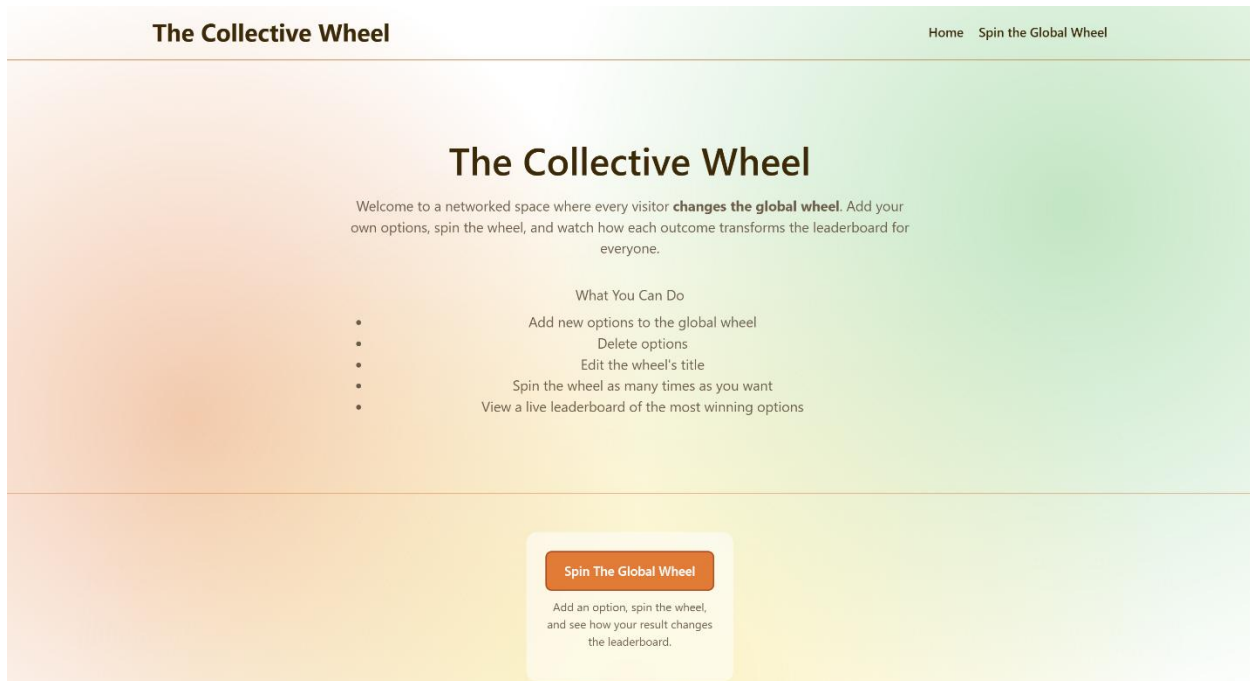
Sushi — 3 wins

tacos — 1 win

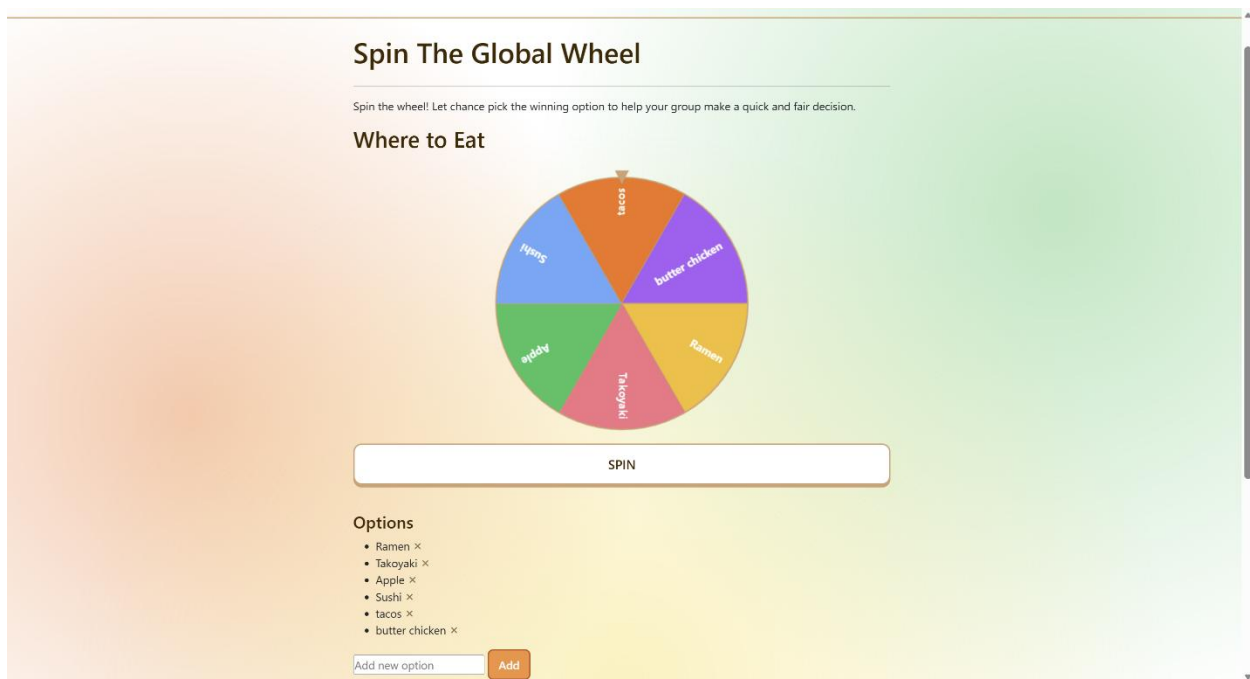
Show History

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Initial state of The Global Wheel with all previous data from database.



Home Page




State of *The Global Wheel* user input “butter chicken” to the options list and click add button. The option gets added to the options list, the wheel, and the leaderboard.

## Spin The Global Wheel

Spin the wheel! Let chance pick the winning option to help your group make a quick and fair decision.

### Where to Eat



SPIN

#### Options

- Ramen ✕
- Takoyaki ✕
- Apple ✕
- Sushi ✕
- butter chicken ✕

Add new option  Add

#### Leaderboard

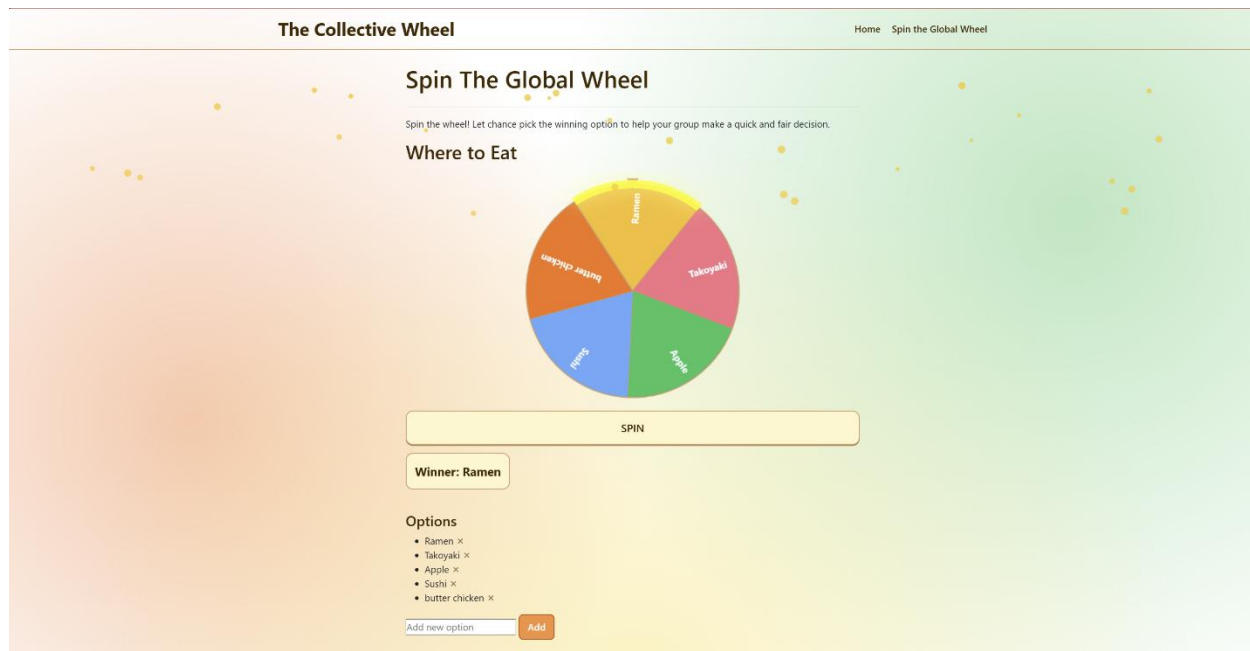
Takoyaki — 4 wins
Apple — 4 wins
Ramen — 3 wins
Sushi — 3 wins
butter chicken — 0 win

Hide History

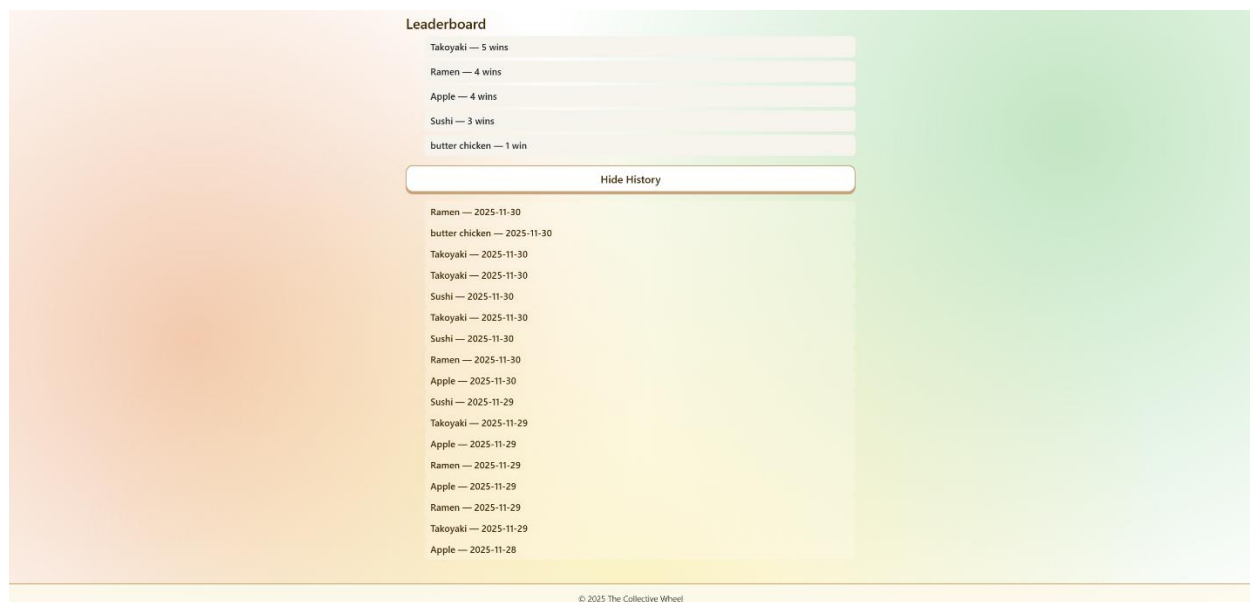
Takoyaki — 2025-11-30
Sushi — 2025-11-30
Takoyaki — 2025-11-30
Sushi — 2025-11-30
Ramen — 2025-11-30
Apple — 2025-11-30
Sushi — 2025-11-29
Takoyaki — 2025-11-29
Apple — 2025-11-29
Ramen — 2025-11-29
Apple — 2025-11-29
Ramen — 2025-11-29
Takoyaki — 2025-11-29
Apple — 2025-11-28

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State of *The Global Wheel* after clicking on x for “tacos” in the options list. The option gets removed from the options list, the wheel, the leaderboard and the history.



State of *The Global Wheel* after the spin button has been pressed. The wheel spins and uncovers the winning option (in this case, it is Ramen). That option gets highlighted by a yellow streak on the wheel, a fun winning animation is displayed, and the winning option is shown under the spin button.



The leaderboard gets updates, the option (Ramen), that previously had 3 wins, now has 4 wins. The history also updates with the latest spin winner along with its date.