

Green Stay

"Green Your Stay, Earn Your Way"

Course Title: Design Thinking

Instructor: Kristine Mudd

Due Date: 12/12/2023

Team 4: Wanyi Zhang, Ruoning Yao, Anubhav Mishra, Pengfei Li, Siyi Shen



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01

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Examining Today's Urgent Challenges

Our Findings, Observations,
Insights, and Challenges



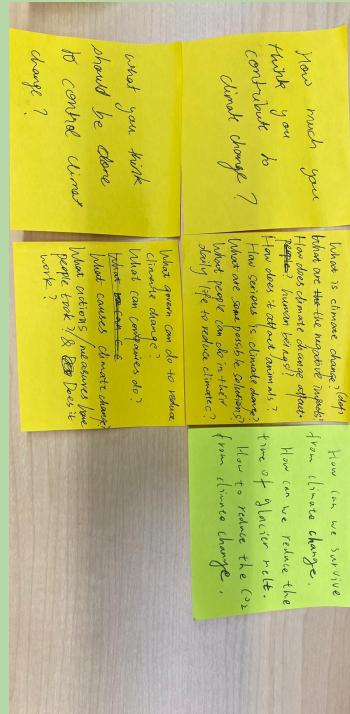
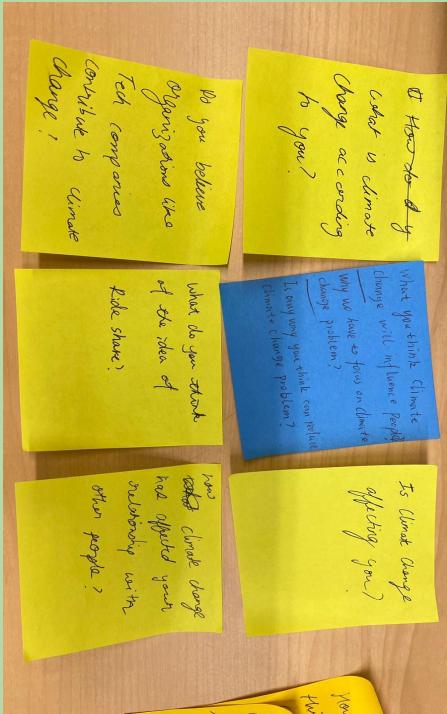
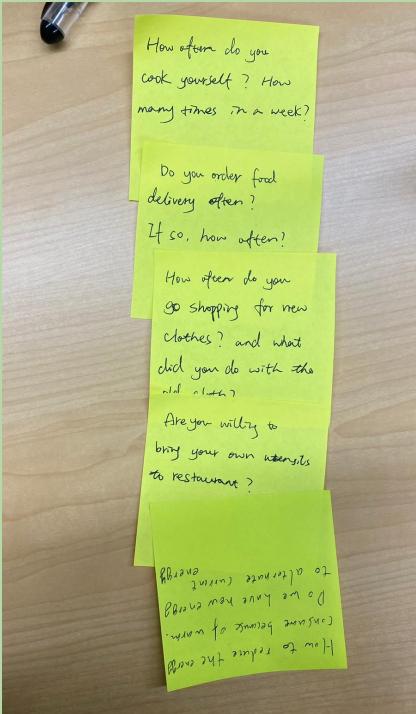
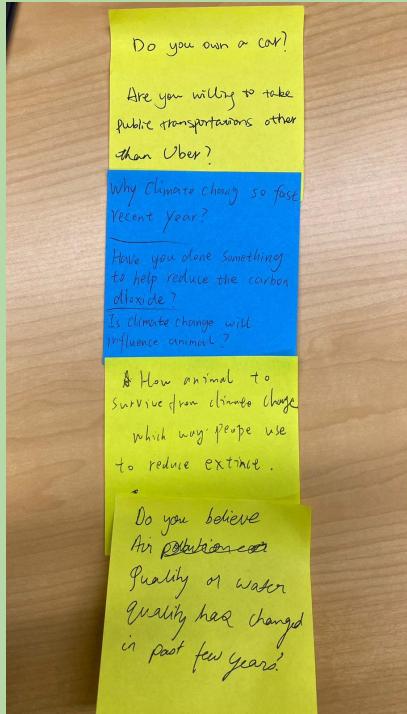
We did following desk activities to understand the problem of energy wastage in the hotel industry

-  Brainstorming ideas
-  Watched expert environmentalist videos
-  Research planning
-  Research on internet
-  Affinity mapping
-  Created interview guide
-  And lot more brainstorming





Brainstorming Ideas





Research - Interview Guide

Background Questions (8m)

These questions are a warm up. They are just about getting to know the person.

1. Tell me about yourself, how old you are, where do you live?
2. What do you do for a living?
3. Tell me about how much you visit hotels.
4. How long is your stay mostly?
5. How do you feel about the environment change these days like the massive raining, increasing heat and long winters?

Research Questions/ Visioning and Exploration (8-10m)

This is where you will focus specifically on questions for your learning goals. What behaviors do you need to understand? What are you trying to influence? What can you learn about solutions they are using today?

1. Did you notice any specific efforts by the hotel to reduce energy consumption or promote energy efficiency, such as energy-efficient lighting or appliances?
2. What was your experience with water usage at the hotel? Did you observe any water-saving initiatives or practices in place, like low-flow fixtures or water recycling?
3. Were there any visible efforts to manage waste and reduce single-use plastics during your stay?
4. Can you describe any recycling or waste reduction programs you noticed? Did the hotel offer any eco-friendly transportation options, such as electric shuttles or incentives for using public transportation?

After conducting desk research, we moved to the next step, which involved:

- Conducting of interviews
- Extracting insights from them



What did the interviewee say?

• • •

Anuroop

“Achieving a balance where hotels can thrive while reducing their carbon footprint and pollution is essential.”



• • •

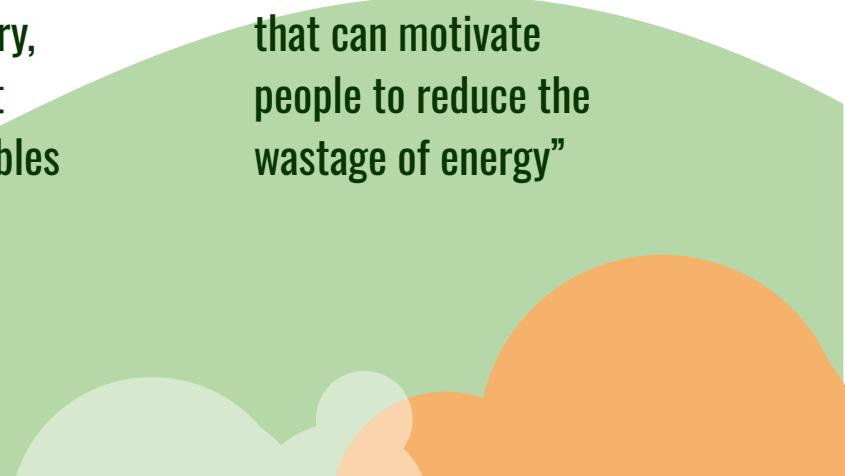
Kitty

“I understand carbon footprint of the hospitality industry, especially when it comes to disposables and wasted food”

• • •

Haifeng Xu

“Definitely. There should be policies that can motivate people to reduce the wastage of energy”





INSIGHTS EXTRACTION

Team 4

Insights Extraction

Raw information: Ideas from the long interview with the customer about their stay at the hotel.

Information clustering:

- Using the website
- A smart car year
- Noticeable changes before and after the implementation of some reduce carbon programs?
- Website to know carbon emissions
- Ways to help reduce climate change
- Hotel experiences:
- Staff training and appropriate marketing are important
- noticeable changes before and after the implementation of some reduce carbon programs?
- website to know carbon emissions
- Ways to help reduce climate change
- Hotel experiences:
- Staff training and appropriate marketing are important

suggestion to hotel

How often do they stay in a hotel?

Opinions on Climate change

Do you think the hotel industry needs to take some steps to promote the importance of protecting the environment? Why?

Insights



Insight 1

People think hotels do have large carbon footprints. Most of the carbon emissions are coming from food waste, use of electricity, and plastic.



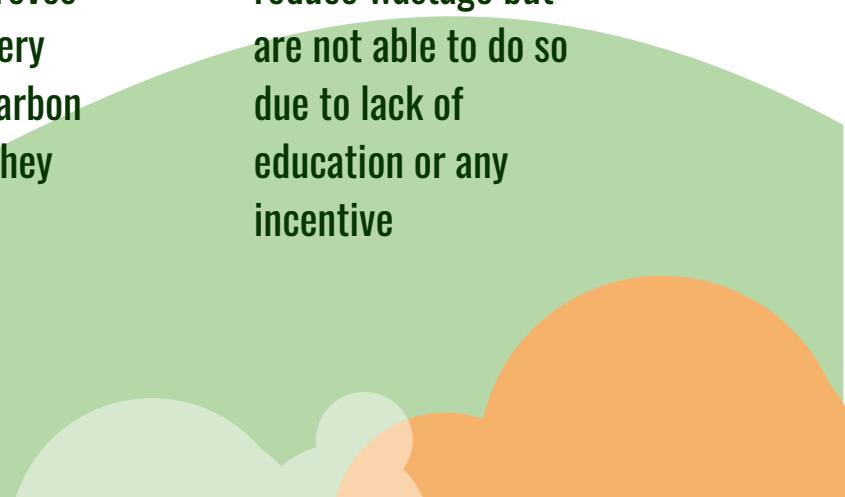
Insight 2

People's experience of staying in hotels proves that they are not very concerned about carbon emissions even if they are aware of it

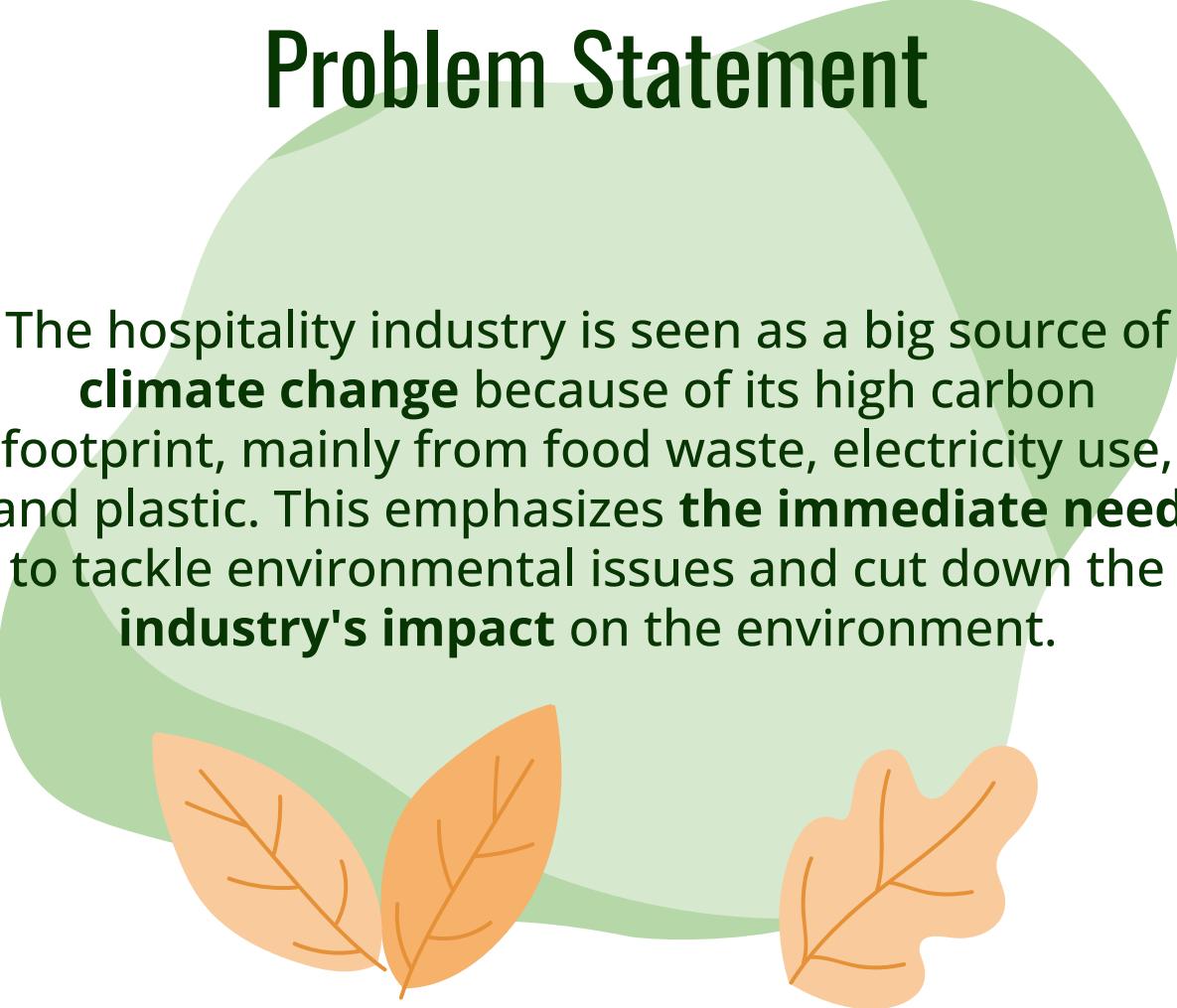


Insight 3

People want to help, reduce wastage but are not able to do so due to lack of education or any incentive



Problem Statement



The hospitality industry is seen as a big source of **climate change** because of its high carbon footprint, mainly from food waste, electricity use, and plastic. This emphasizes **the immediate need** to tackle environmental issues and cut down the **industry's impact** on the environment.

02

...

Green Stay

Our idea





Brainstorming Session

Brainstorm

How might we reduce the carbon footprint of hotel operations?

Energy-efficient lighting: Replace traditional incandescent light bulbs and implement smart lighting controls to optimize energy use.

Renewable energy sources: Install solar panels, wind turbines, or utilize other renewable energy sources to power hotel operations.

Efficient Appliances: Replace old inefficient systems with Energy Star-rated models in guest rooms and common areas.

Water Conservation: Use water-saving fixtures and systems to reduce water consumption, such as low-flow toilets, showerheads, and smart irrigation.

Staff Training: Provide sustainability training for staff to increase awareness and encourage energy-saving practices in daily operations.

How might we encourage hotels to adopt more energy-efficient lighting and appliances?

Incentive Programs: Create government or industry-led incentive programs to encourage hotels to invest in energy-efficient lighting and appliances.

Energy Performance Contracts: Encourage hotels to implement energy performance contracts with certified energy auditors to improve energy efficiency.

Public Awareness Campaigns: Create awareness campaigns to promote basic energy-efficient practices and encourage guests to choose friendly accommodations.

Carbon Offsetting: Implement a carbon offset program to neutralize the carbon footprint of hotel operations by supporting reforestation projects and investing in reforestation.

Green Transportation: Offer electric vehicle charging stations and provide incentives for the use of bicycles and public transit.

How might we minimize water usage in the hospitality industry?

Low-flow Fixtures: Install low-flow showerheads, faucets, and toilets in guest bathrooms to reduce water consumption.

Smart Irrigation Systems: Implement smart irrigation systems that are based on weather conditions and moisture levels.

Guest Incentives: Offer incentives or discounts for guests who bring their own reusable water bottle and reuse towels during their stay.

Employee Training: Organize workshops and training sessions for hotel staff and management to learn the benefits of energy-efficient lighting and appliances and how to implement them effectively.

Regulatory Requirements: Strengthen regulations and standards to encourage hotels to mandate the use of energy-efficient lighting and appliances in new hotel construction and renovations.

How might we promote the use of renewable energy sources in hotels?

Solar Panels: Install solar panels on hotel rooftops and in parking lots to generate clean, on-site solar power.

Wind Turbines: Consider wind turbines for hotels located in areas with consistent wind patterns, such as a coastal area with strong wind energy.

Green Generation: Obtain and generate green energy through partnerships with local utility companies to show commitment to renewable energy use.

Energy Storage: Invest in energy storage solutions, like batteries, to store excess renewable energy for use during peak demand periods.

Collaborate with Utilities: Work with local utility companies to explore options for purchasing renewable energy, such as green energy programs.

Eco-friendly Marketing: Promote the hotel's commitment to renewable energy in marketing materials and in the guest sections of environmental sustainability guides.

How might we reduce food waste in the hospitality industry?

Portion Control: Implement portion control measures at all service points to ensure that servings match guest appetites and reduce excess food on plates.

Reduced Buffets: Limit the size and variety of buffets offered to help reduce the quantity of food waste generated during service.

Inventory Management Software: Utilize inventory management software to track and manage food inventory levels, reducing over-purchasing and spoilage.

Guest Awareness: Encourage guests to have food waste reduction options available when they order only what they can consume.

Data Analytics: Regularly monitor and analyze guest feedback to identify trends and areas where further reductions can be made.

Staff Training: Educate kitchen and service staff about the importance of food waste reduction and provide training on efficient food handling and storage.

Food Donation Partnerships: Establish partnerships with organizations that can collect and distribute excess food to those in need.

Why "Green Stay" ?

01

...
Raises users' awareness of environmental protection and reduce carbon footprints.

03

...
Offers unique and easy-to-operate features for users.

02

...
Provides relative personalized sustainability guidance

04

...
Provides users with a sense of engagement, fun, and benefit.



Our Value Statement



It is an **eco-tracking mobile app** designed for hotel guests, especially **young travelers**, to **monitor and reduce their energy use during their stay**. This will be great because it helps guests **raise awareness of reducing the carbon footprint and get rewarded**.



Overview of "Green Stay"

A mobile application specifically tailored for hotel guests, providing insights into their eco-friendly practices during their stay. The app can offer personalized tips, rewards, and challenges to encourage sustainable behaviors.

Upon check-in, guests can download the app and input their room number.

Report sustainable actions e.g.:

- Using refillable water bottles
- Opting out of daily towel and linen changes

Redeem rewards e.g.:

- Complimentary meals
- Exclusive access to hotel amenities



03

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Green Stay

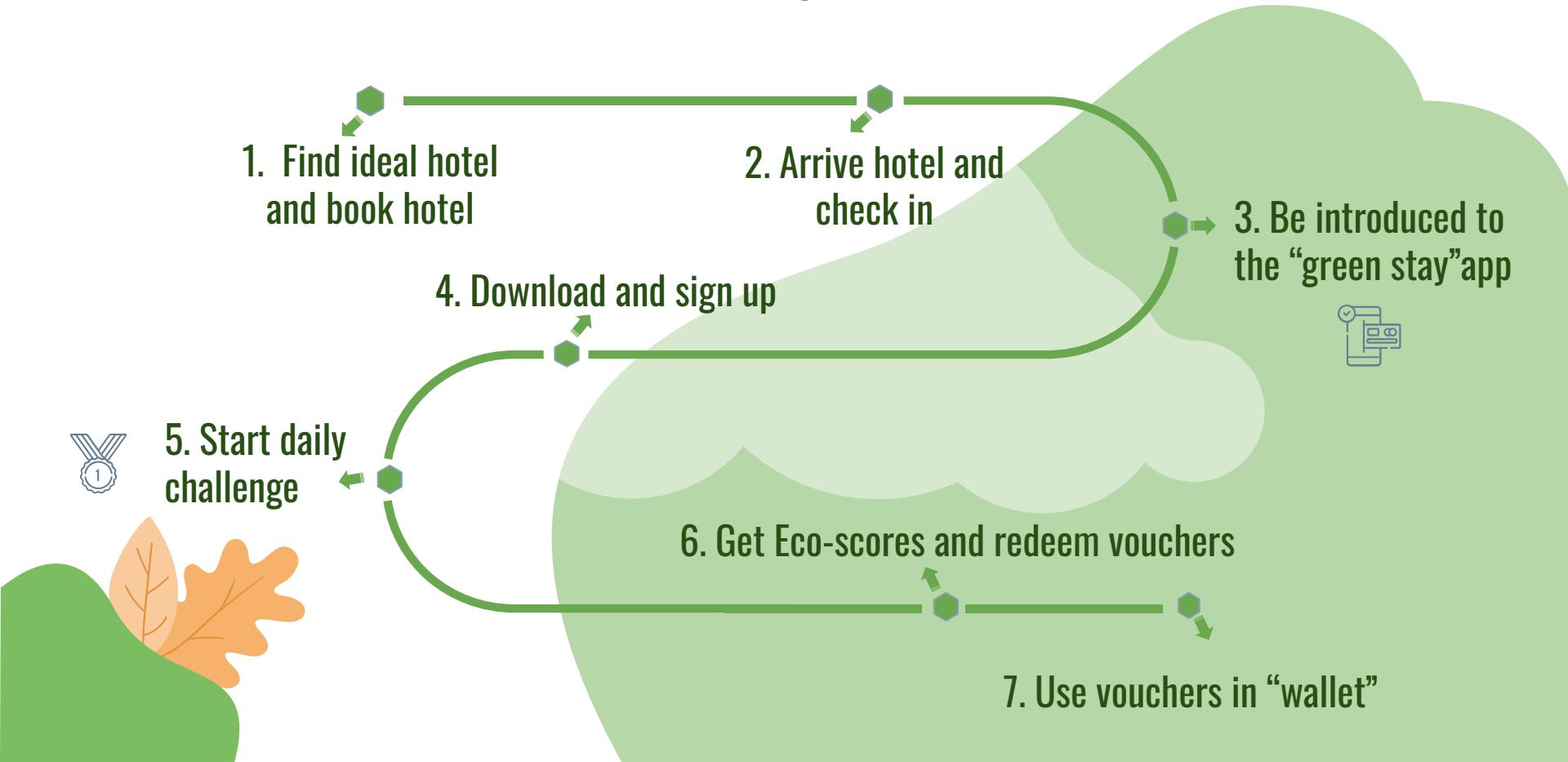
Journey Map



Journey maps

	Discovery/Registration			Interaction with the app			Exit			
Actions (Verb + Noun) What does the customer do?	interact with some ad on social media	Download the app	Signing up using email or phone number	select the hotel	record the activities	got points	received notification to enter the activities	send referral for points	cashout points	Repeat next time when I visit hotel again
Touchpoints What part of the service are they interacting with?	Google, Fb, Instagram	App store/ Play Store	email account, phone number	Browse the list in our App	hotel surrounding and in app activities	Bing browse	notification, text or email	social media, text	hotel's breakfast, lounge	
Customer Thoughts What is the customer thinking?	there is app to get discounts	oh no, one more app	here, we go again	worried, if my hotel is there or not	work, work ugh!	Yay!! got some points	again put my activities, ugh	Yay!! more points	Finally, hard work paid off!!	I want to use it again
Customer Feeling What is the customer feeling?										
Opportunities What is there an opportunity to improve the experience? HMW?	How can we monitor the electricity usage of each room	How can we make sure if the users can consistently using the app	How might we visualize the energy saving in the app	How can we let the users to see the tips						

Journey map for users



03

...

Assumptions & Key Metrics



Key Metrics



During the prototype if there is good user engagement and if people are able to navigate through the call-to-action button application walkthrough easily?

• • •



How often do active customers use Green Stay in a day? Number of tasks user completes in the trip

• • •



How does our prototype works in scenario and UX testing?

• • •

Assumptions we need to test

- *People will download our app to enter their energy-saving activities in return for getting cash or coupon rewards.*
- *Our target audience is young people age from 20 to 40.*
- *People who do not travel frequently will not be willing to download our app, they would prefer a web app instead.*
- *If the reward is not equivalent to the work they are putting in they won't use the app again, that means we have to focus on rewards a lot.*

04

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Prototype Testing



Green Stay

Prototype 1.0

1. Welcome and Onboarding Screens

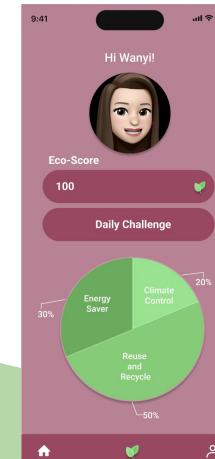
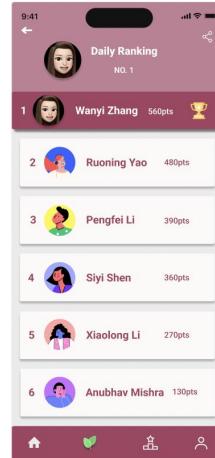
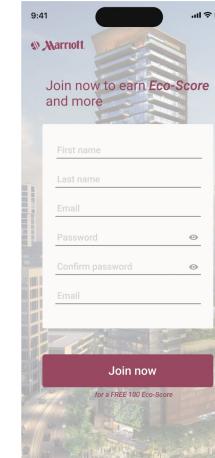
2. User Registration and Login

3. Home Dashboard

4. Challenge Section

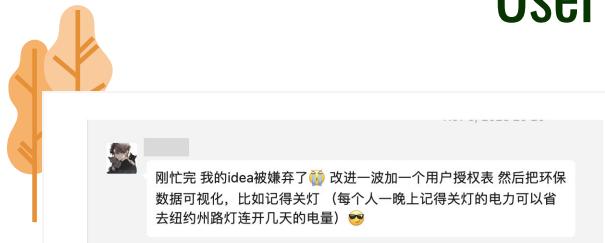
5. Rewards and Redemption

6. Ranking board



User test feedback

User 1



Translation: You can add a user authorization form and visualize environmental data, such as remembering to turn off the lights (the amount of electricity saved by turning off the lights in each room for one night is equal to the amount of electricity used to turn on the streetlights in New York for several days at a time)



Translation : Doing tasks should be more relevant to the flow of the hotel, people don't like to specialize in tasks, let's say, if I go to the hotel to have breakfast, when I approach the restaurant, it will automatically show the task, so that I go to get my phone and swipe the QR code to unlock the task

User 2



Translation : There is a time limit when gaining points, for example, there is a daily deal, and at the same time there should be an incentive to refer, you can set up channels to show off, the rewards are put on the secondary, share the app is the external stimulus!



Learnings & Insights from Prototype testing



User Engagement with Challenges:

Users are more likely to engage with challenges that are easy to understand and integrate into their daily routine. Challenges perceived as too complex or time-consuming may see lower participation rates.



Effectiveness of the Reward System:

The value and appeal of the rewards significantly impact user motivation. Users prefer rewards that are immediately beneficial, such as discounts on hotel services or exclusive experiences.



Educational Content Engagement:

Users show varying levels of engagement with educational content about sustainability. Including interactive elements or gamified learning can increase interest and retention of information.



App Usability and Interface Design:

A user-friendly interface is crucial. Participants may struggle with navigation or functionality if the design is not intuitive. Clear instructions and a simple layout enhance the user experience.



Integration with Hotel Services:

Seamless integration with hotel services (like room control or service requests) boosts the app's utility and user satisfaction. Users appreciate being able to manage their stay and eco-challenges within a single platform.



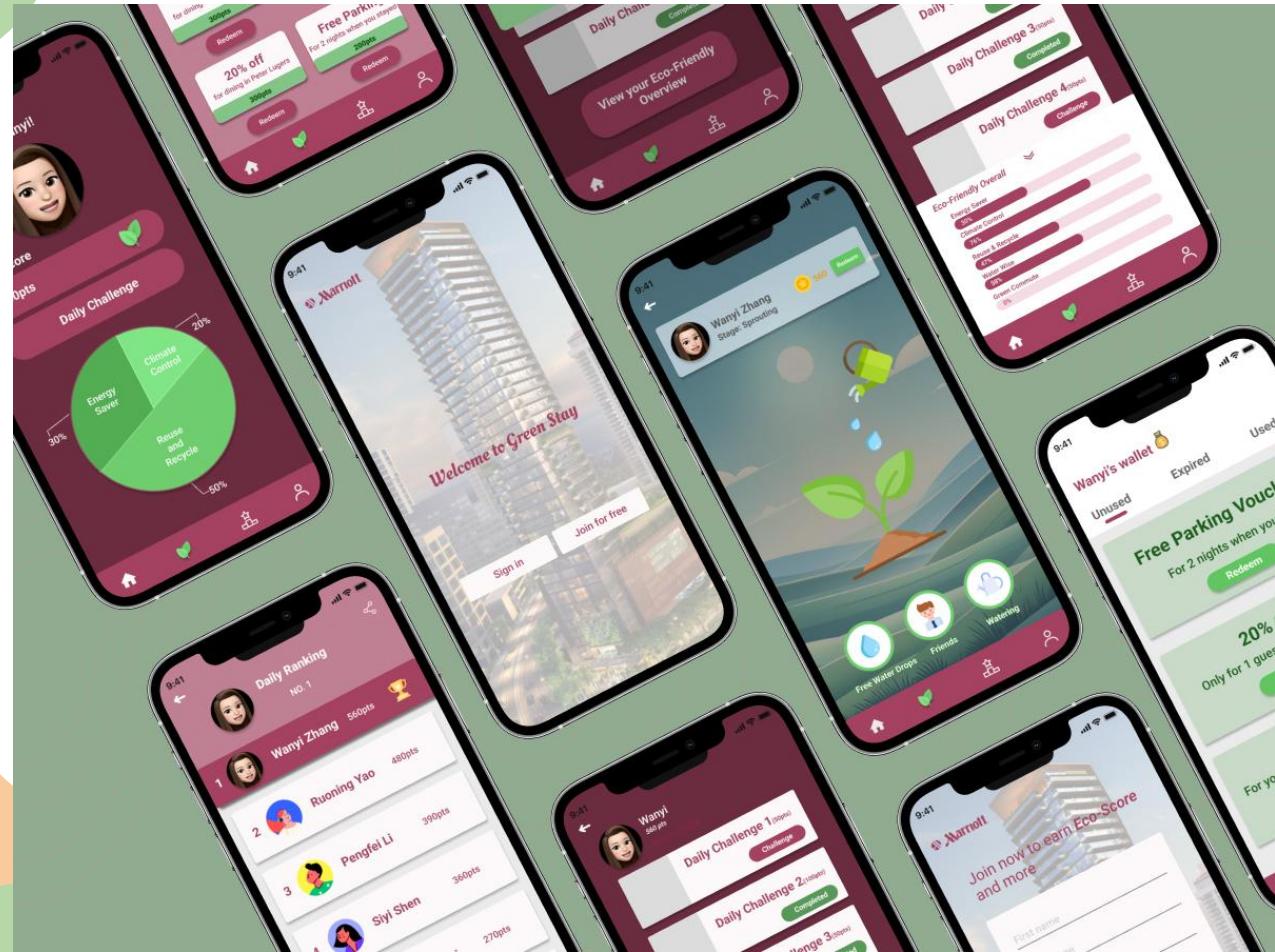
Feedback and Community Features:

Features that allow users to give feedback and share their achievements with a community can enhance engagement. Users enjoy being part of a community and seeing the collective impact of their eco-friendly actions.



Green Stay

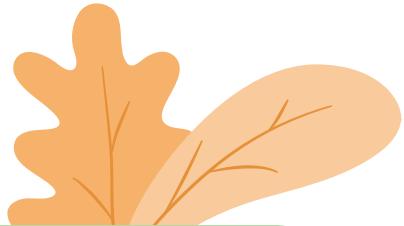
Prototype 2.0



Prototype

Scan and try it out!

...



Scan the QR code



<https://www.figma.com/proto/KIMOAIlc0gRJIDa13oVg0/Untitled?page-id=0%3A1&type=design&node-id=119-885&viewport=293%2C1030%2C0.47&t=Y3uXJGZeSYgfg88l-1&scaling=scale-down&starting-point-node-id=1%3A2&mode=design>

Check out Our new features!

...



The image displays three mobile phone screens showcasing new features of a mobile application:

- Left Phone Screen (Wallet):** Shows a wallet interface for "Wanyi's wallet". It lists three unused vouchers:
 - Free Parking Voucher:** For 2 nights when you stay. Includes a "Redeem" button.
 - 20% Off:** Only for 1 guest at the hotel spa. Includes a "Redeem" button.
 - 10% Off:** For your next stay with "Green Stay". Includes a "Redeem" button.
- Middle Phone Screen (Profile):** Shows a profile for "Wanyi" (Room #1208). It includes a "Daily Challenge 1 (50pts)" section (Challenge button), a "Tips" section with a "Waste Reduction and Recycling" article (Swipe up to open), and a "Daily Challenge 5 (50pts)" section (Completed button). A "View your Eco-Friendly Overview" button is also present.
- Right Phone Screen (Home Feed):** Shows a notification from "Green Stay" (5 mins ago) stating "You have a new challenge!". It features a photo of a woman and a "Swipe up to open" call-to-action.

THIS IS WHAT WE CHANGE

E PLANTING

Users can earn points by completing challenges, and use these points to plant trees in real life to reflect the significance of energy conservation and environmental protection.

TIPS

The APP will push some energy-saving and environmentally friendly knowledge to help users better complete challenges, and can remind users at any time what to do to reduce environmental pollution.

USER WALLET

Users can check their wallets to see which coupons they have obtained and their availability. This also directly see the rewards they receive after completing tasks.

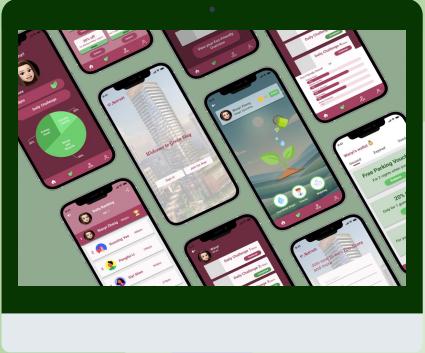


05

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Future Vision





01

More Than
1M+ Users

03

More than one million
poverty areas families
benefit from it

02

Reduce 10% of Carbon
Emissions in
Hospitality Industry

04

More than 10 million
trees planted
worldwide





Thanks!

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Future



MARS • • •

Despite being red, Mars is a cold place. It's full of iron oxide dust

JUPITER • • •

It's a gas giant and also the biggest planet in our Solar System.

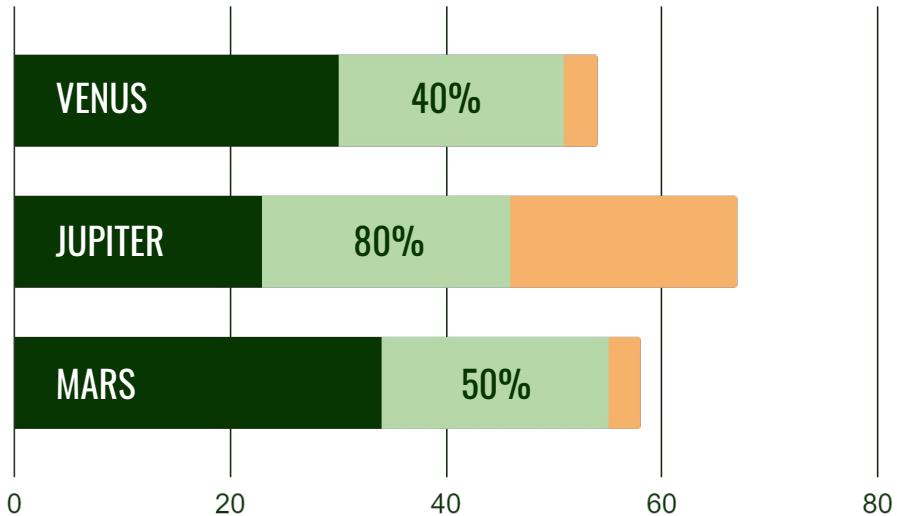
NEPTUNE • • •

It's the farthest planet from the Sun in our Solar System

A landscape photograph showing several white wind turbines with three blades each, standing on a grassy hill. The sky is a vibrant blue with scattered white, fluffy clouds. In the foreground, there's a small, simple building with a corrugated metal roof.

A PICTURE IS WORTH A
THOUSAND WORDS

MAIN COMPETITORS



CUSTOMIZE IT!

If you want to modify this graph, click on it, follow the link, change the data and replace it



OUR PROCESS



MERCURY

...
Mercury is the closest planet to the Sun.



MARS

...
Mars is actually a cold place full of iron oxide



NEPTUNE

...
Neptune is the fourth-largest planet



SATURN

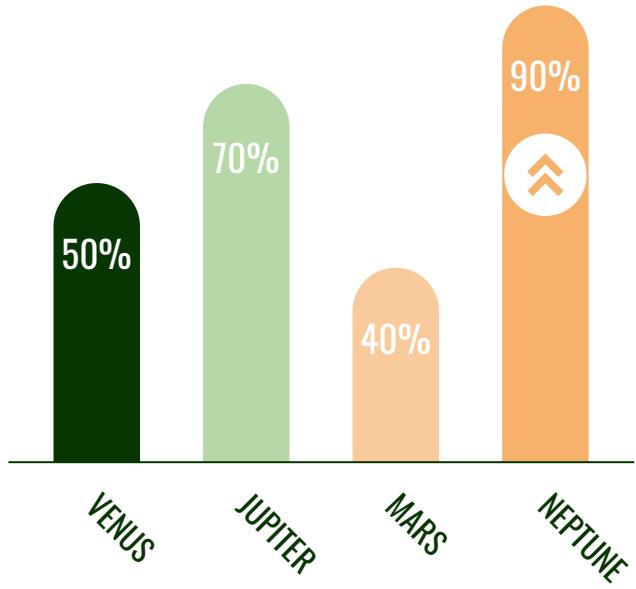
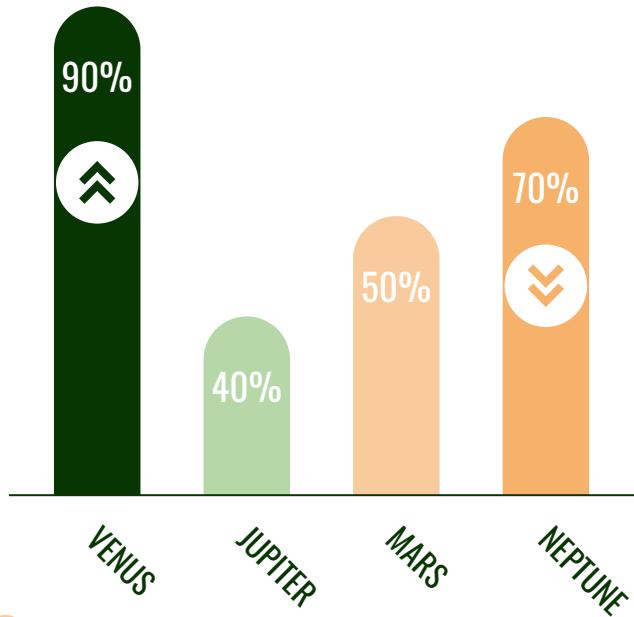
...
Saturn is the ringed planet in Solar System

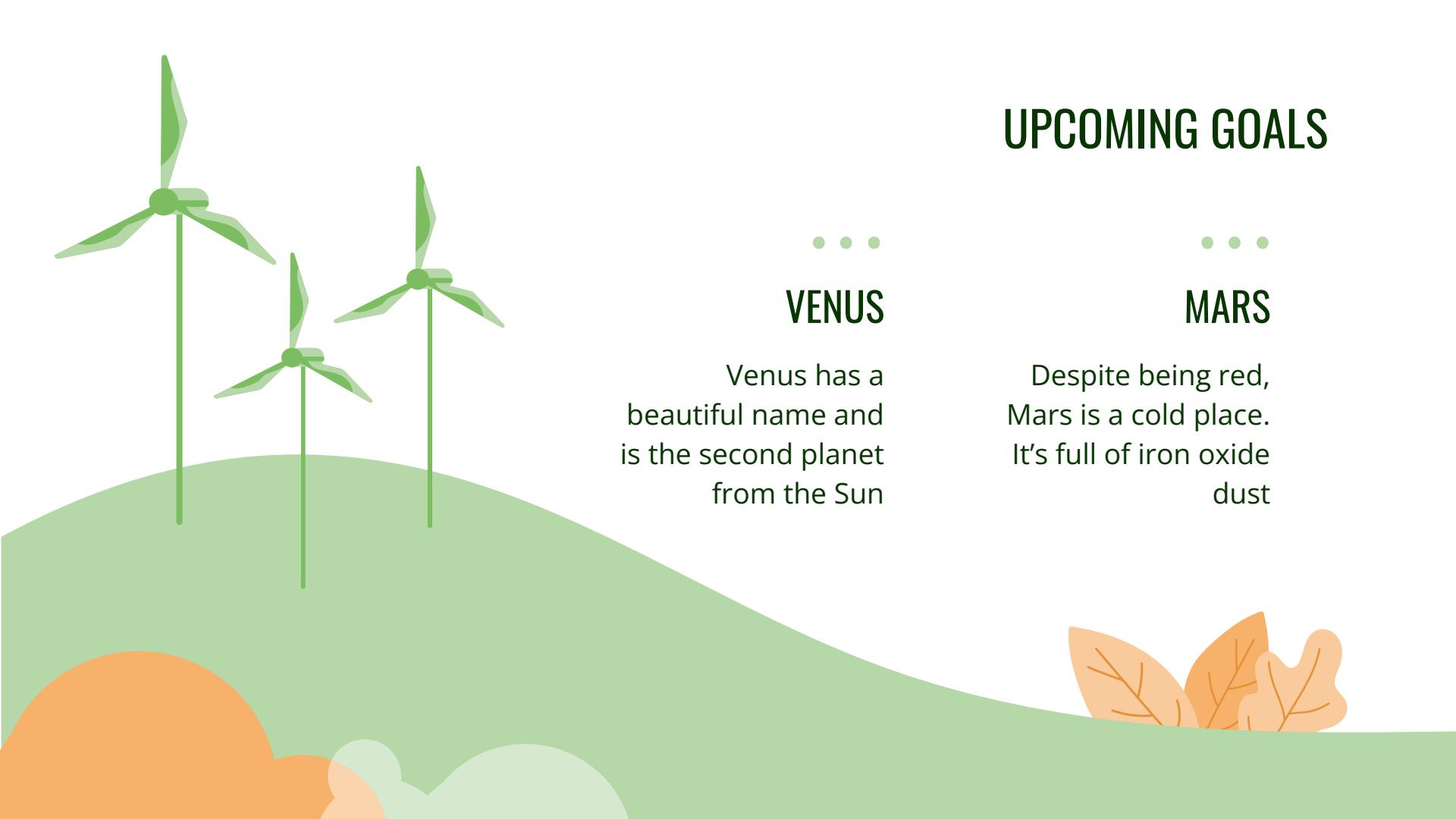


VENUS

...
Venus is the second planet from the Sun

MARKET RESEARCH



The background features a stylized green landscape with a hill on the left. Three green wind turbines are positioned on the hill. In the bottom right corner, there are orange autumn leaves.

UPCOMING GOALS

• • •

VENUS

Venus has a
beautiful name and
is the second planet
from the Sun

• • •

MARS

Despite being red,
Mars is a cold place.
It's full of iron oxide
dust

UPCOMING GOALS



MERCURY

Mercury is the closest planet to the Sun and the smallest one in the Solar System



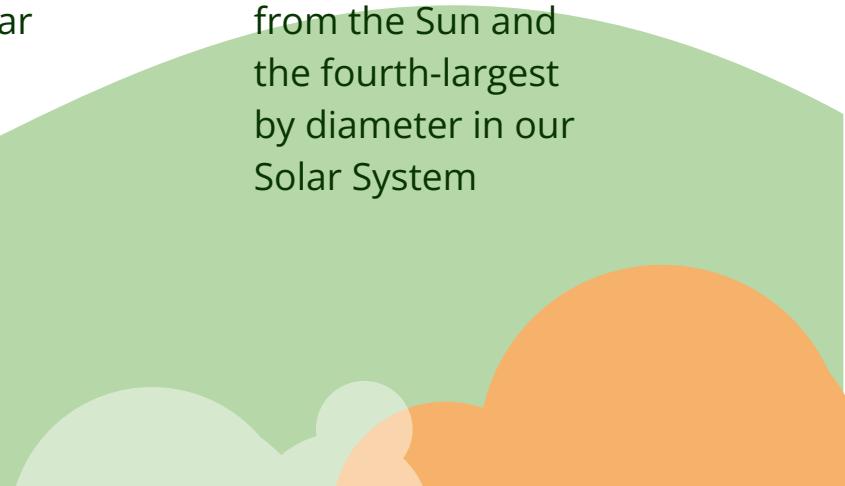
JUPITER

Jupiter is a gas giant, the biggest planet in our Solar System and the fourth-brightest object in the sky



NEPTUNE

Neptune is the farthest planet from the Sun and the fourth-largest by diameter in our Solar System



...

A PICTURE
ALWAYS REINFORCES
THE CONCEPT



ANALYSIS



• • •

SATURN

It's a gas giant,
composed mostly of
hydrogen and helium

• • •

VENUS

Venus is the second
planet from the Sun.
It's very hot



• • •

MERCURY

Mercury is the closest
planet to the Sun and
the smallest one

• • •

NEPTUNE

Neptune is the
farthest planet from
the Sun

ANALYSIS



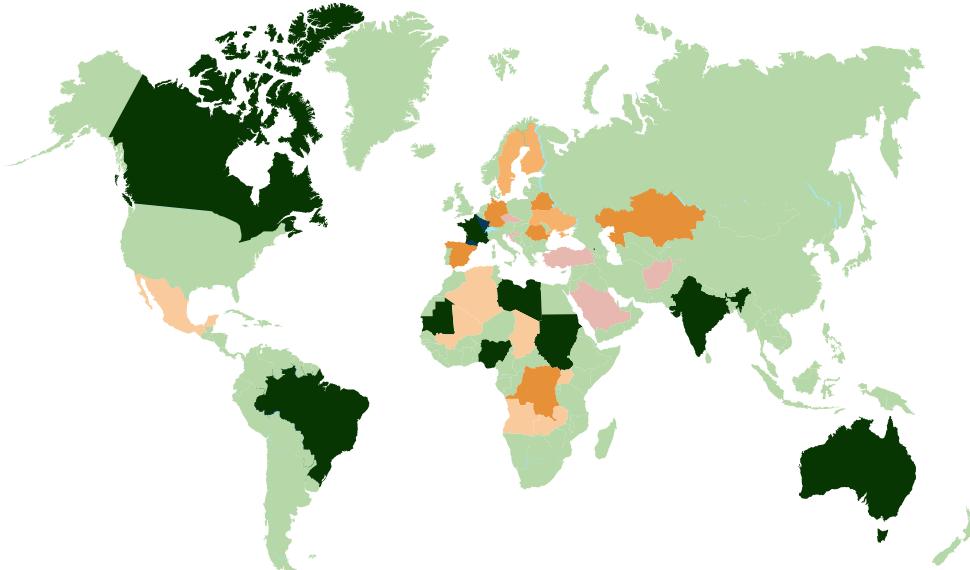
MARS

Despite being red, Mars is a cold place



VENUS

This planet is terribly hot in Solar System



MERCURY

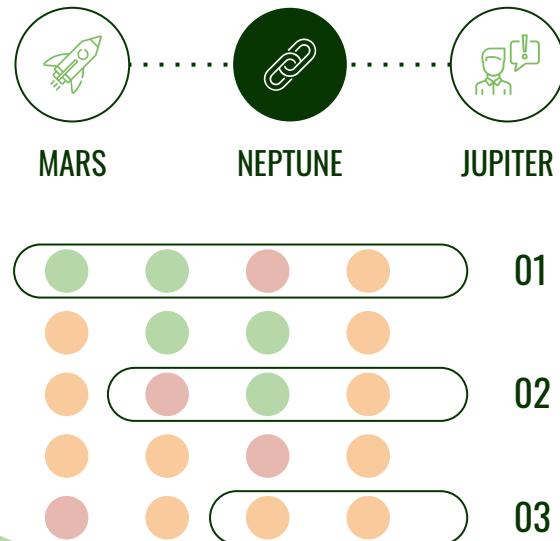
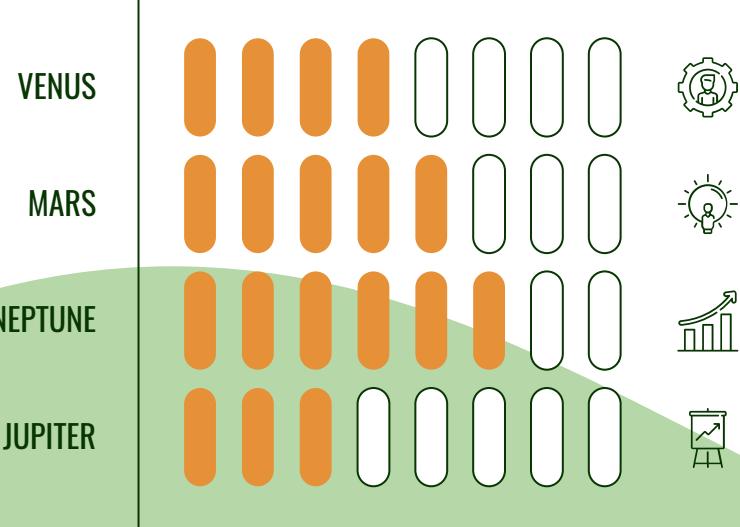
Mercury is the closest planet to the Sun



NEPTUNE

Neptune is the farthest planet from the Sun

TARGET



THIS IS OUR TEAM

JOHN DOE

Talk a bit about
this person

JENNA DOE

Talk a bit about
this person

JACK DOE

Talk a bit about
this person





OUR PARTNERS

VENUS	MARS	JUPITER
Venus has a beautiful name and is the second planet from the Sun	Despite being red, Mars is actually a cold place. It's full of iron oxide dust	Jupiter is a gas giant planet and the biggest planet in our Solar System
PARTNER	PARTNER	PARTNER



TESTIMONIALS



MARS

"Despite being red, Mars is actually a cold place. It's full of iron oxide dust"



JUPITER

"Jupiter is a gas giant and the biggest planet in our Solar System"



VENUS

"Venus has a beautiful name and is the second planet from the Sun"



SATURN

"Saturn is a gas giant, composed mostly of hydrogen and helium"



MERCURY

"This planet is named after the Roman messenger god"



NEPTUNE

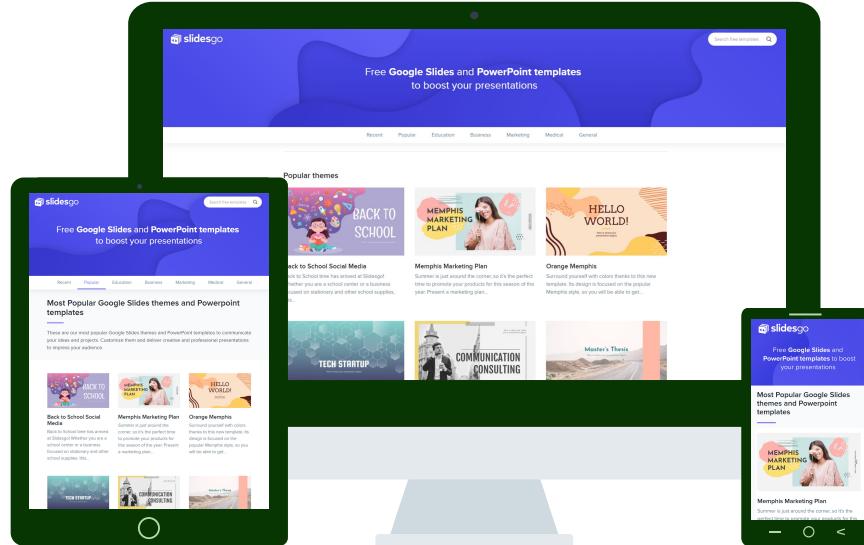
"Neptune is the fourth-largest planet in our Solar System"



MOCKUPS

...

You can replace the image on the screen with your own work. Just delete this one, add yours and send it to the back



AWARDS



Mercury is the closest planet to the Sun and the smallest one

AWARD

...



It has a beautiful name and is the second planet from the Sun

AWARD

...



Jupiter is a gas giant and the biggest planet in our Solar System

AWARD

...

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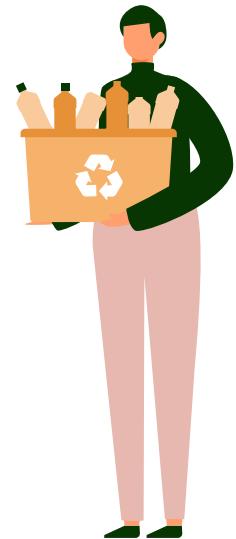
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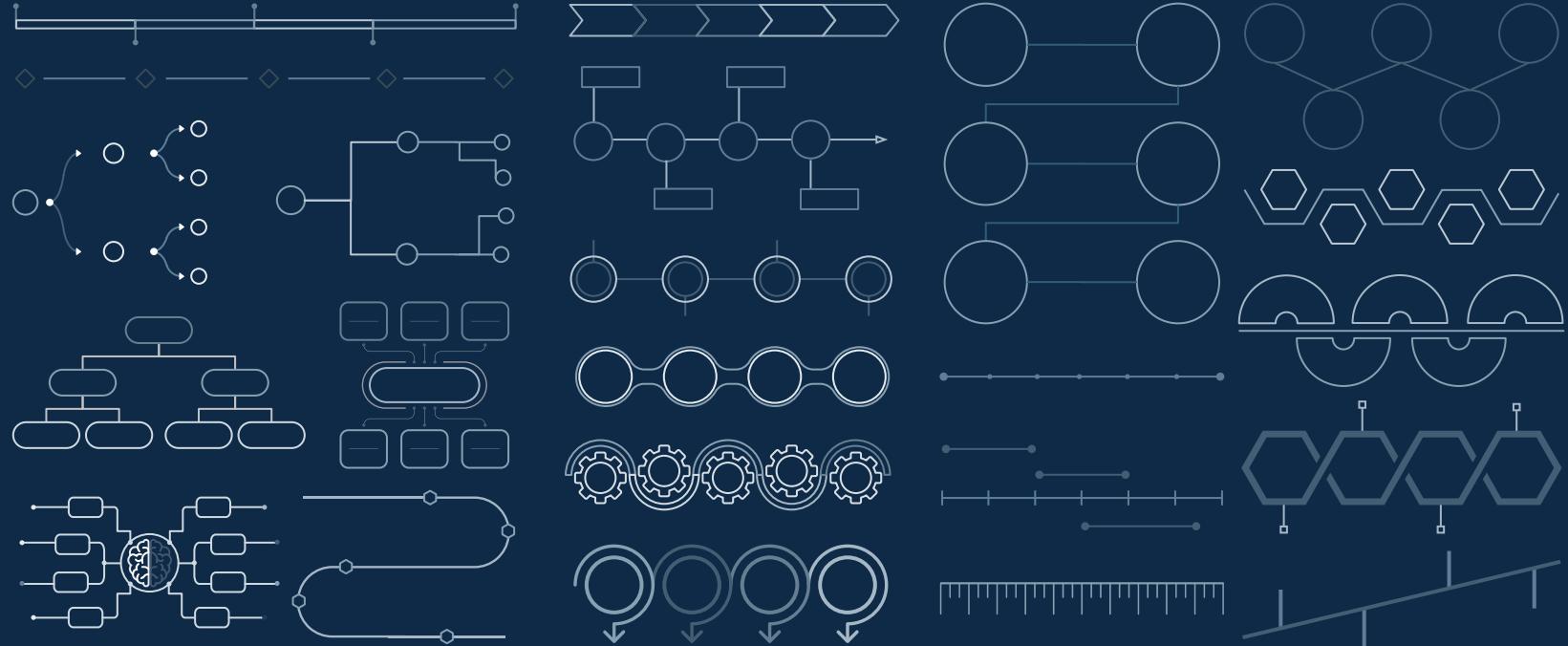
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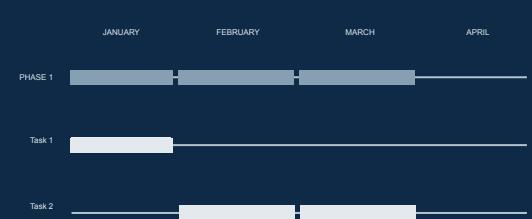
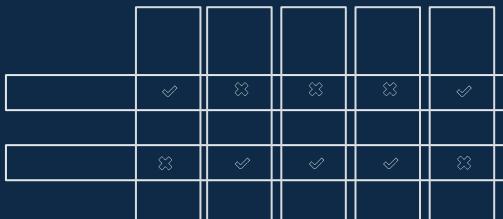
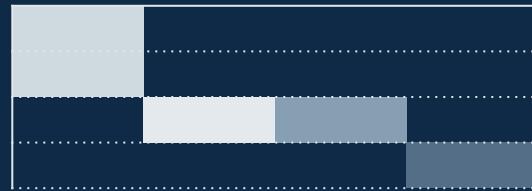
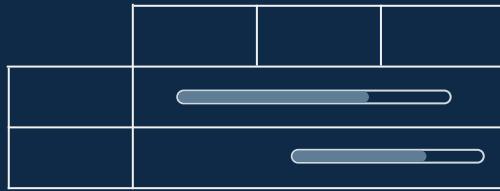
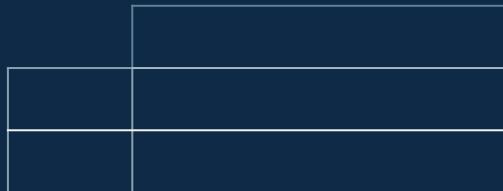
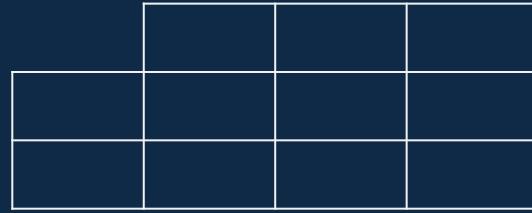
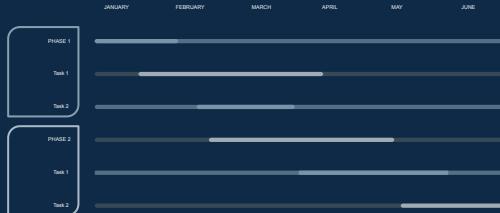
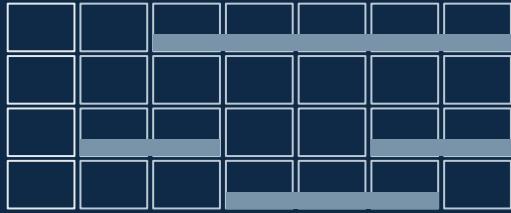
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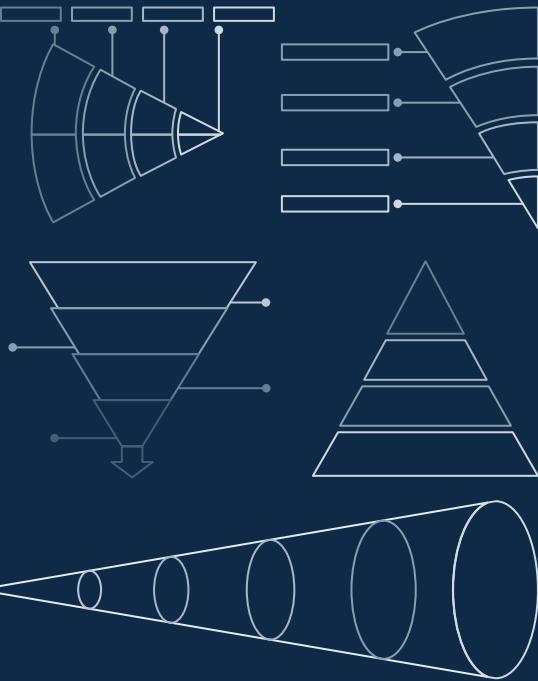
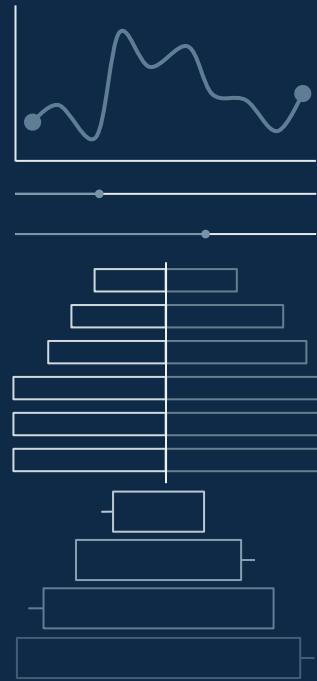
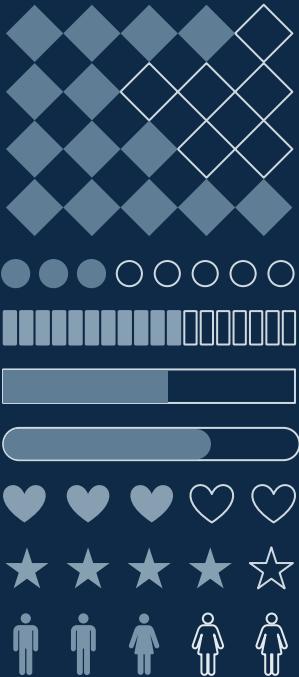
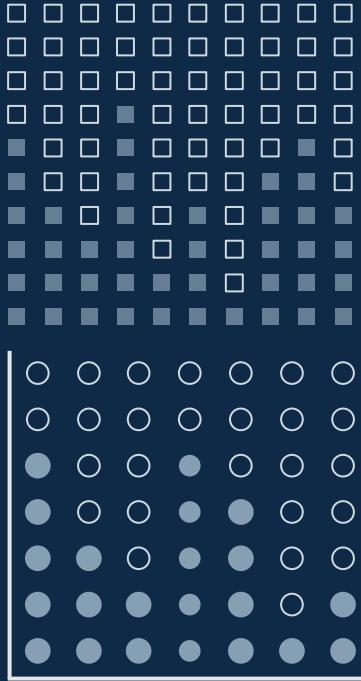
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