TEAM DETAILS

Team Name : Mind Machines

Project Title : User Engagement with Green Delivery

Team Members :

SNO	NAME	DEPARTMENT	ROLES
1.	Jayasoorya J	AI & DS	Team Leader
2.	Jazlynn Monita N	AI & DS	UI / UX Designer
3.	Jeya Shri S	AI & DS	Frontend Developer
4.	Amrize JK	IT	Backend Developer

THEME BENEFITS

User engagement with green delivery options will promote the sustainability mission of EcoShip by providing customers with the choice of eco-friendly delivery methods and rewarding them for their selections. This initiative will help raise environmental awareness and foster loyalty to the brand. Additionally, it will enhance EcoShip's position as a logistics service provider for green businesses, reinforcing Amazon's sustainability goals.

ABSTRACT

EcoShip actively engages its customers in sustainability efforts by offering them choices regarding their delivery options. This approach helps align customers with EcoShip's mission and encourages the adoption of sustainable practices within the industry. It achieves this through providing impact insights, educational messages, and rewards for making environmentally friendly choices.

SOLUTION OVERVIEW

Check out our prototype video :

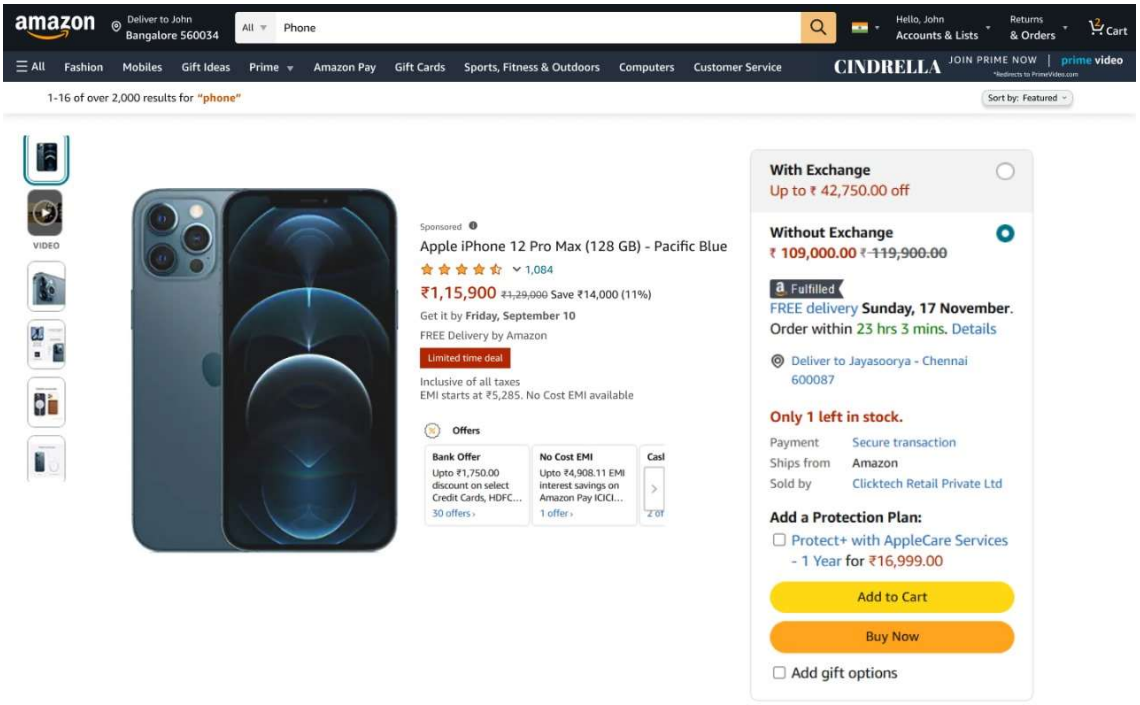
https://drive.google.com/drive/folders/1-ne_liQ3YpHtjbzmu9V3pwwdb8f4IqFv?usp=drive_link

This is a feature of User Engagement with Green Delivery Choices and empowers customers to actively participate in EcoShip's sustainability mission through careful and environmentally responsible delivery choices and consumption habits. The following key elements are involved in this solution:

1. Green Deliveries : When customers place an order, they have the option to choose a "green" delivery. While this option may take a bit longer to arrive, it allows EcoShip to optimize delivery routes, combine packages into fewer boxes, and reduce fuel consumption. With each choice, an "impact statement" displays the amount of CO_2 emissions reduced by selecting one option over another.

2. Environmental Impact Awareness : Each shipping option is accompanied by a brief educational note that informs customers about the impact their selection has on emissions, waste, and fuel consumption. For instance, the green delivery option includes a tag stating: "This option saves 15% in emitted CO_2 compared to express delivery. Thank you for choosing a greener earth!" This helps encourage customers to make more environmentally friendly choices.

3. Customer Incentives for Green Choices : EcoShip offers reward points or discounts to customers who select eco-friendly alternatives. Customers can track their selections through a dashboard, which allows them to monitor their total environmental impact over time. This approach enhances brand loyalty and promotes positive behavioural change.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₹ 109,000.00 ₹ 119,900.00
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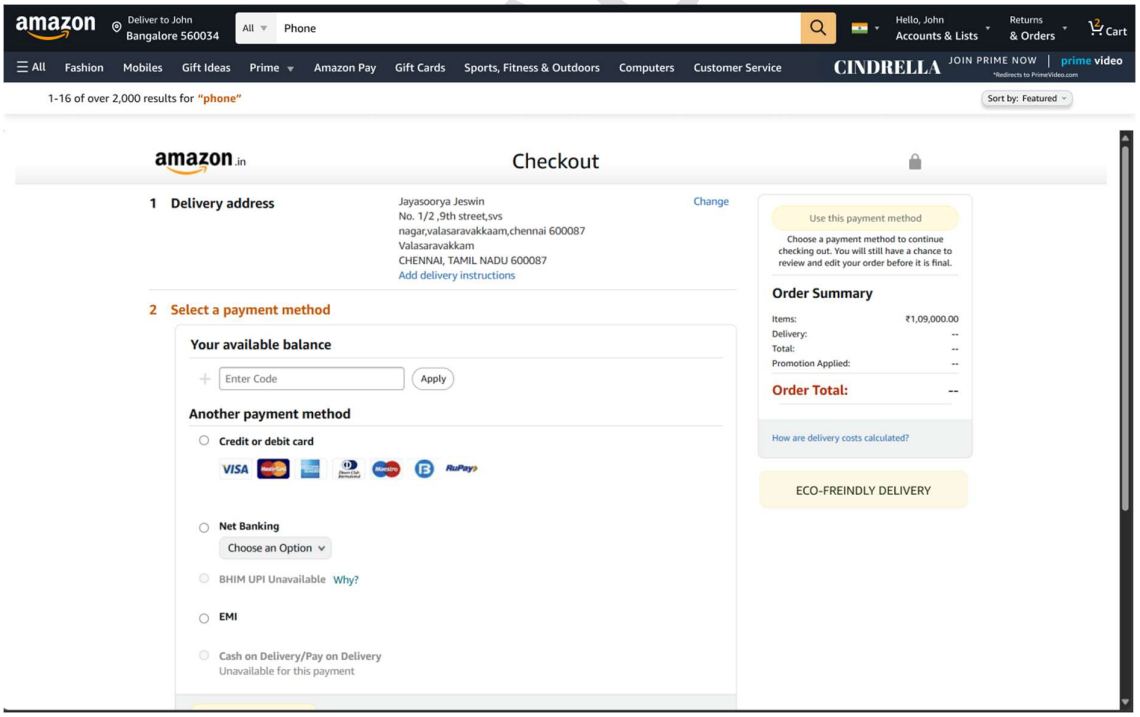
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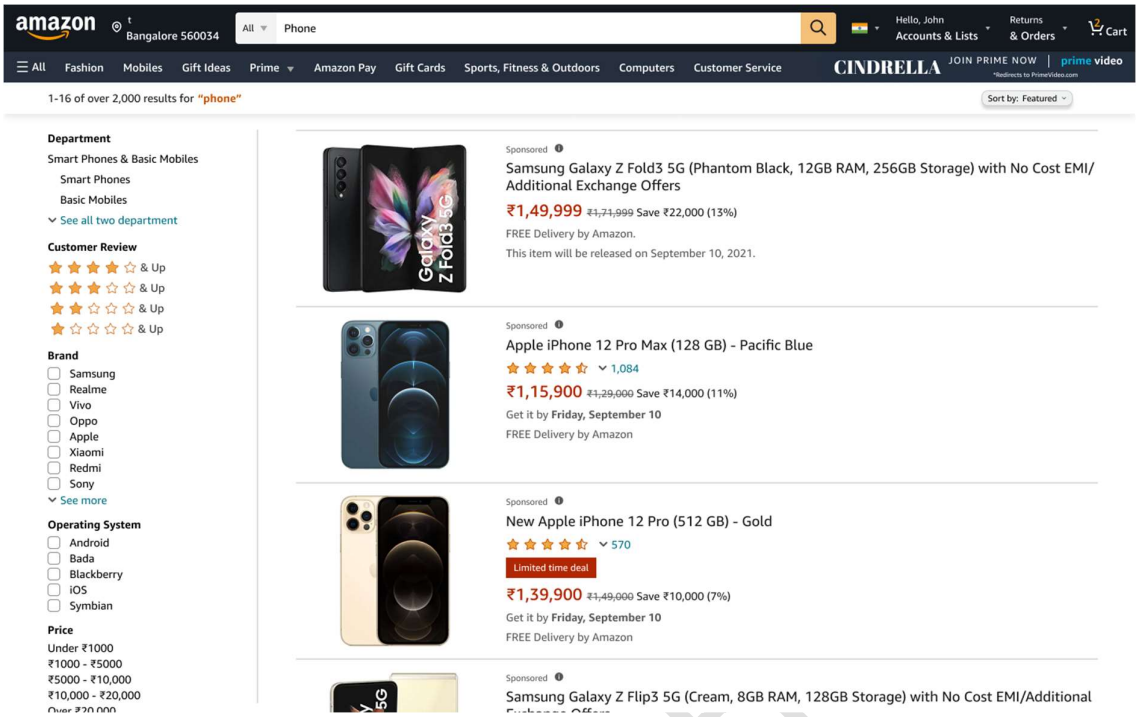
CHENNAI, TAMIL NADU 600087
Add delivery instructions
Change
2 Select a payment method
Your available balance
Enter Code
Apply
Another payment method
Credit or debit card
Net Banking
Choose an Option
BHIM UPI Unavailable Why?
EMI
Cash on Delivery/Pay on Delivery
Unavailable for this payment
Use this payment method
Choose a payment method to continue checking out. You will still have a chance to review and edit your order before it is final.
Order Summary
Items: ₹1,09,000.00
Delivery: --
Total: --
Promotion Applied: --
Order Total: --
How are delivery costs calculated?
ECO-FREINDLY DELIVERY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Sony
See more
Operating System
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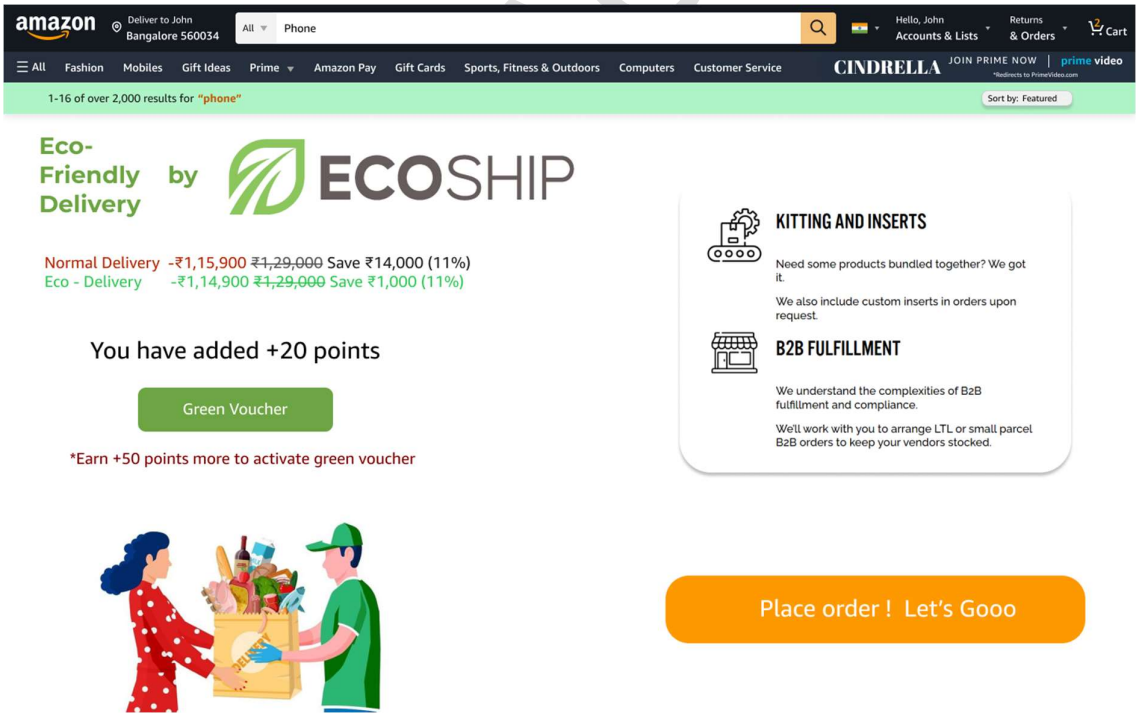
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Eco - Delivery -₹1,14,900 ₹1,29,000 Save ₹1,000 (11%)
You have added +20 points
Green Voucher
*Earn +50 points more to activate green voucher
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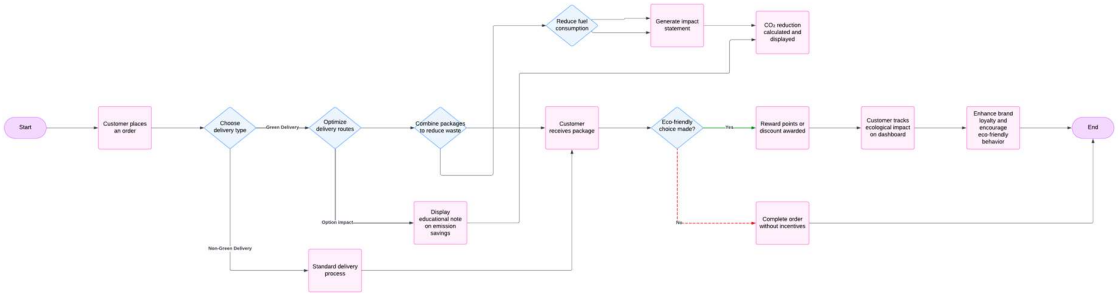
Need some products bundled together? We got it.
We also include custom inserts in orders upon request.
B2B FULFILLMENT
We understand the complexities of B2B fulfillment and compliance.
We'll work with you to arrange LTL or small parcel B2B orders to keep your vendors stocked.
Place order ! Let's Gooo

ARCHITECTURE:



TECHNICAL STACK

Frontend

ReactJS : Used to create an interactive and user-friendly dashboard for customers to view and select eco-friendly delivery options.

HTML/CSS : For designing the layout and style of the website, ensuring it is easy to navigate and visually appealing.

Backend

Node.js : Handles server-side operations, like processing customer orders, calculating environmental impact, and managing delivery options.

Express.js : A web framework for Node.js, used to build the API for retrieving delivery options and calculating CO_2 reductions.

Database

MongoDB : A NoSQL database used to store customer preferences, delivery data, and reward points securely.

Firebase : Used for user authentication and real-time updates on delivery status and impact metrics.

Cloud and Hosting

AWS (Amazon Web Services) : Hosts the application and stores data securely, ensuring scalability and availability.

S3 : For storing images and other static files, such as impact statements or environmental educational messages.

Analytics

Google Analytics : Tracks customer interactions and behaviour on the platform, helping EcoShip measure engagement with the green delivery choices feature.

Power BI or Tableau : Used for visualizing the environmental impact data, helping EcoShip make informed decisions about its sustainability strategies.

Payment Integration

Stripe : Integrated for processing payments if reward points or discounts are used by customers when opting for eco-friendly deliveries.

DECISION RATIONALE:

1. Customer-Centric Approach : This approach involves integrating customers into sustainability efforts, fostering a deeper connection to EcoShip. It encourages customer loyalty and addresses the growing demand for environmental consciousness.

2. Real-Time Data and Transparency : Providing impact information in real time empowers customers to make informed, eco-friendly decisions. This transparency builds trust and encourages more environmentally friendly choices.

3. Cost Reduction Through Optimization : By offering slower, more eco-friendly delivery options, routes can be optimized, leading to fuel conservation and reduced environmental impact, ultimately saving costs.

4. Sustainability Education : Educational messaging alongside delivery options raises awareness and promotes long-term behaviour change towards more sustainable choices.

5. Incentivizing Desirable Change : Rewarding customers with discounts or points for choosing eco-friendly delivery options encourages participation in sustainability efforts and increases adoption.

6. Long-Term Brand Loyalty and Competitive Advantage : EcoShip's commitment to environmental sustainability positions the company as an innovator, attracting environmentally conscious consumers and creating a competitive edge.

7. Scalability and Futureproofing : Utilizing cloud-based technologies allows the solution to scale efficiently, accommodating growth while maintaining ecological initiatives.

INNOVATION HIGHLIGHTS

1. Dynamic Eco-Impact Selection : It shows people the choices they have in terms of green shipping while giving them real-time feedback on the carbon footprint that their purchases are generating, and it makes them act for that sustainable choice.

2. Sustainable Behavioural Influence Nudges : Customised messages that would lead them to green choices, and this will integrate sustainability into the shopping journey

3. Customised Green Incentives : Personalized incentives given to them for choosing sustainability; it creates healthy habits in customers and encourages these habits.

4. Collaborative Green Logistics Network : EcoShip triggers a movement of social change and pushes the companies' activities toward sustainability and further to drive the industry.

FEASIBILITY AND USER-FRIENDLINESS

1. Easy integration : The eco-delivery alternative should be an easy addition to the already-established checkout process, with very little overhead to the platform of EcoShip.

2. Simple Interface to Users : The dashboard is intuitive and clear-cut showing the easy-to-understand facts regarding the impact that the shipment will have on the environment, for all the users regardless of their technical prowess.

3. Scalable Rollout : It spans across multiple e-commerce platforms, such as Amazon, with minimal infrastructure change and is bound to be widely adopted.

SUCCESS METRICS

1. Carbon Emissions :

- **Before Implementation :** EcoShip did not monitor nor measure the environmental efficiency of their logistics. As it selects based on speed the routes had been made for distribution that was leading to fuel inefficient usage and therefore higher emission of CO_2 in the environment. Packaging and transport were standardized without sustainability considerations.

- **After Implementation :** EcoShip will start developing environmentally friendly shipment options with potential emission reductions tracking. Its slower delivery options and optimized routes reduce the consumption of fuel and the emission of CO2. Packaging consolidation saves on emissions. This time, because of its impact tracking in real-time, EcoShip is now able to measure and make reductions on its carbon footprint.

- **Key Change :** From untracked, speed-focused deliveries to routed and packaged using the most eco-optimal routes and choices that support measurable reductions in CO_2 emissions

2. Customer Engagement :

- **Before Implementation :** Customers have no sort of knowledge about the environmental effects associated with their delivery options. What is a default form of delivery that was thought to be speedy and convenient overruled the need for adding in a greener way of delivery? The company's sustainability goals were not interacted with directly.

- **After Implementation :** Today, customers are offered a choice of greener delivery options. The dashboard gives real-time feedback on the CO2 emissions reduced because of their choices. Through the educational messaging, it further educates them on the overall effect of their decision and rewards sustainable choices for future green choices.

- **Key Change :** From passive involvement toward active empowerment: make customers aware of their environmental footprint and challenge them to an enduring shift toward actions that are more environmentally friendly.

3. Operational Efficiency :

- **Before Implementation :** The operations of EcoShip were speed-based which affected the route taken thus making routes rather inefficient and even more wasteful with fuel. Consolidation of packages was not emphasized; consequently, packaging methods were not made to be especially sustainable, thus generating plenty of waste.

- **After Implementation :** In terms of environmental implications, EcoShip ensures that delivery routes are optimized, packages consolidated in the best ways and made from eco-friendly materials. The slower delivery schedules enable better planning of routes, which further cuts down fuel consumption

and operational costs. With reduced waste generation, the packaging itself will become greener and align to the company's green policy.

- **Key Change :** From optimizing speed and convenience toward operational efficiency at every turn-route optimization, package consolidation, sustainable packaging to reduce costs and minimize negative impacts on the environment.