Rewards Maximizer

CS 410
Platinum Team
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Team Bio

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Brendan is a senior at ODU majoring in computer science. He has 10 years of experience working in the shipping industry for Fedex.

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Colin Thoe is a junior at ODU studying computer science and math. He enjoys watching basketball and playing video games.

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Correy is a senior at ODU studying computer science. In his free time he enjoys watching films, working out, and cooking

Daniel Del Río

Daniel is a senior at ODU studying CS with a minor in Applied Mathematics. He is obsessed with the PSP/PS3/PS4/ PS5 hacking scene.

Team Bio Cont'd

Derek Caldwell

Derek Caldwell is a currently a senior at ODU majoring in Computer Science. His hobbies include hiking and tinkering with his Vim configuration.

Josh Annor

Josh Annor is a Senior at ODU majoring in Computer Science. Currently interning for Jacobs as a control systems engineer.Enjoys gaming on his free time

Tori Crouthamel

Tori is a junior at ODU studying computer science. She currently works as a technical consultant. In her free time she enjoys climbing and snowboarding.

Elevator Pitch

Rewards Maximizer is a software in the form of a website or mobile application that will allow you to maximize your credit card rewards in conjunction with vendor specific reward systems by providing you with a comparison from the credit cards that you may add and remove from your wallet. Guiding you to utilize the one that will maximize your rewards such as 3X points at restaurants and many other shopping categories. This along with vendor specific reward systems, will provide a meaningful combination of savings towards many future purchases.

Table of Contents

Problem Statement

Problem Characteristics

Current Process Flow

Solution Statement

Solution Process Flow

What it Will Do

What it Will Not Do

Competition Matrix

Development Tools

Major Functional Components

Major Functional Components Diagram

Risks

References

Appendix

Real World Product vs Prototype Table

Problem Statement

These days consumers can potentially have several credit cards that can originate from many different banks or rewards cards from various businesses. Each card can have different reward programs or discounts based on who it is issued by or who the issuer is affiliated with. Since each credit card rewards program is different, it can be difficult to keep track of which card is best suited to a particular purchase.

Problem Characteristics

Privacy Concerns:

- Consumers often share personal information without sufficient consideration.
- There is a need for decision-making tools that do not require personal information, ensuring user privacy while optimizing rewards.

Credibility Issues:

- Many websites offering credit card comparisons are filled with adware and sponsored content.
- Financial institution affiliations compromise the impartiality of these sites, making it difficult for users to find unbiased and reliable information.

Decision-Making Assistance:

- Consumers need tools to help them determine which credit or rewards card to use for maximizing rewards points, without having to sift through overwhelming amounts of information.

Problem Characteristics Cont'd

User Experience:

- Current solutions are bloated with ads and non-essential content, leading to a poor user experience.
- Consumers are looking for streamlined, user-friendly options that provide clear and concise information.

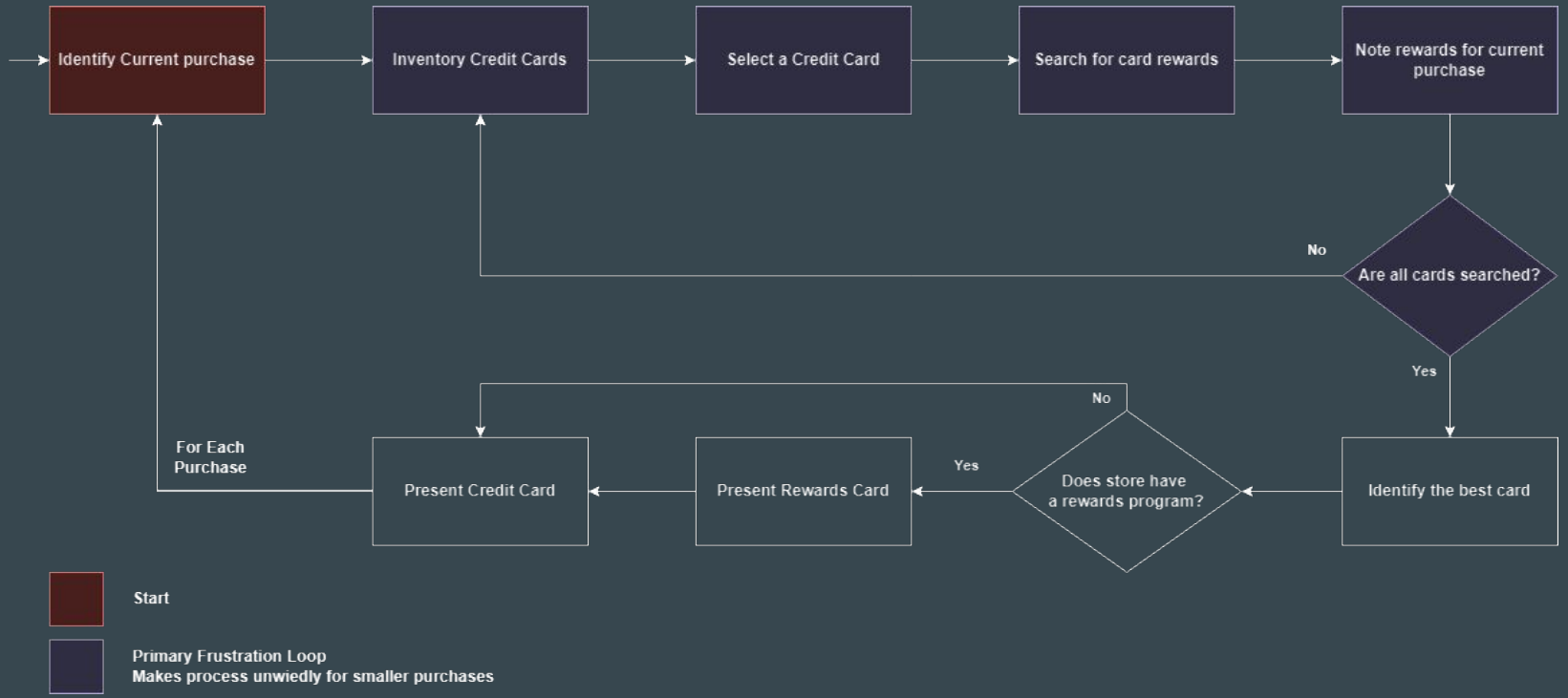
Information Overload:

- Users are overwhelmed by the volume of information and options available from various credit card reward programs.
- Simplified, credible resources are needed to help consumers make informed decisions easily.

Lack of Integration:

- Current solutions often do not integrate with vendor-specific reward systems, limiting the potential for maximizing rewards.
- Users require a tool that seamlessly combines credit card rewards with vendor-specific offers for optimal savings.

Current Process Flow

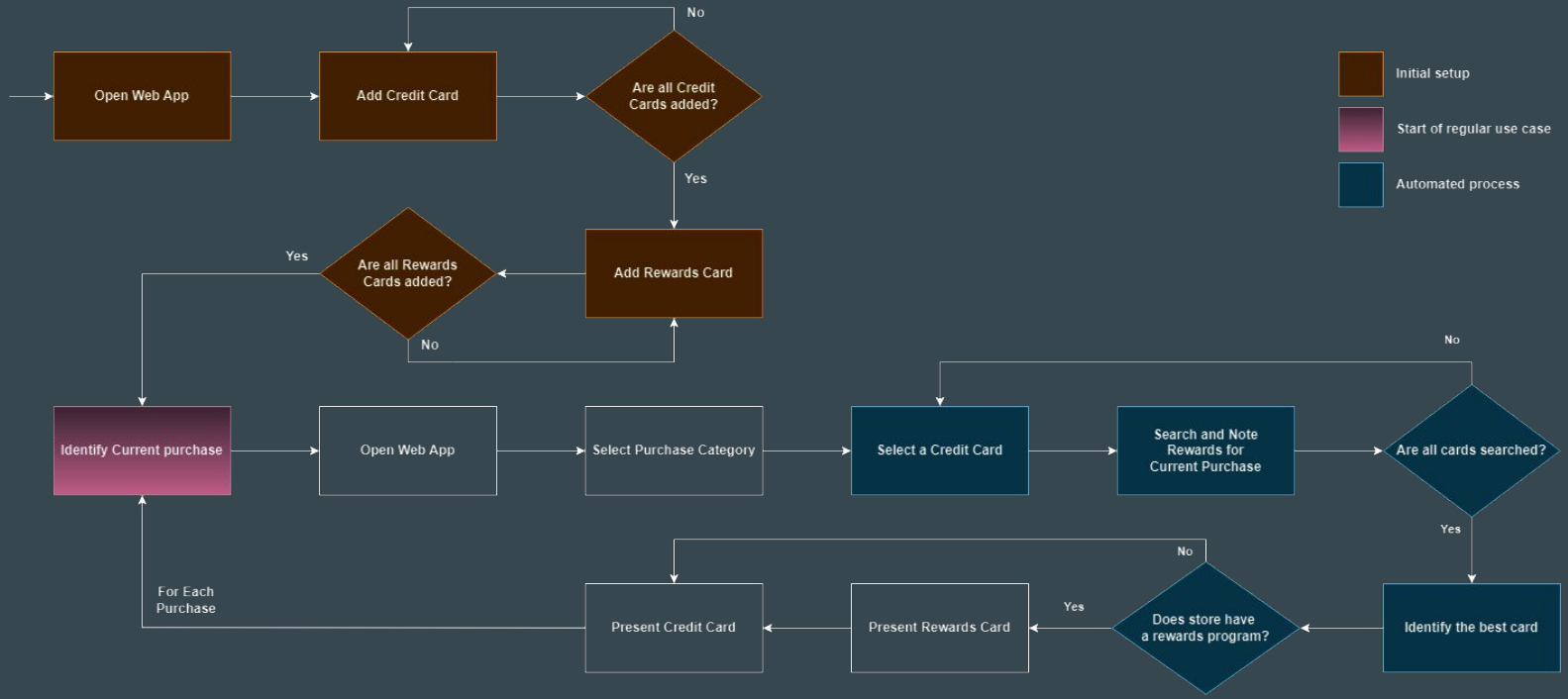


Solution Statement

As an answer to the question of which credit or rewards card to use, we propose the Rewards Maximizer which can be accessed via website application that will help to optimize rewards. This software will allow the user to:

1. Enter all credit and rewards cards in the user's possession into a "wallet" inside the program.
2. Search for potential purchases from different businesses.
3. Return the credit and rewards card(s) that will award the most points or discounts pertaining to the searched item.

Solution Process Flow



What it Will Do for Users

- Provide a simple, clean user interface
- Give the user a digital wallet to store credit cards and rewards
- Allow the user to search for cards not in their wallet
- Optimized card and rewards program recommendations
- Utilize crowdsourcing by allowing users to share information about cards/rewards
- Enable user feedback
- Exclusive use of anonymous data for analysis

What it Will Do for Companies

- Integration of vendor-specific deals and reward systems
- Allow companies to post updated information on their cards and rewards programs
- Personalized Marketing
- Additional anonymous analytics and customer feedback

What it Will Not Do

- It will not give financial advice
- It will not allow the storage of credit card information
- It will not integrate with all global vendors and reward programs
- It will not offer real-time customer support
- It will not handle payment processing or transactions directly
- It will not address all types of loyalty programs (i.e. Hotel, Gas)

Competition Matrix

Features	Rewards Maximizer	PayPal Honey	Rakuten	Nerd Wallet	Rocket Money
Crowdsourcing	✔				
Search and compare credit cards	✔			✔	
Wallet functionality	✔			✔	✔
Gives cash back on purchases		✔	✔		
Searches web and applies coupons		✔			
Exclusive use of anonymous data for analysis	✔				

Competition Matrix Cont'd

Features	Rewards Maximizer	PayPal Honey	Rakuten	Nerd Wallet	Rocket Money
Integration of vendor-specific deals and reward systems	✔	Partial	Partial		
Company Updates	✔	Partial	Partial		
Search company rewards and loyalty programs	✔			Partial	
Notifications and Alerts	✔	✔	✔	✔	✔

Development Tools

- Integrated Development Environment (IDE): VSCode
- Version Control: Github
- Continuous Integration (CI): Github Actions & Workflows
- Continuous Deployment (CD): Github Actions & Workflows
- Project Management and Collaboration: Jira

Major Functional Components

Web Application

- Front end:
  - HTML/CSS/JS
  - Bootstrap
  - Ember.js
- Back end:
  - Rust
  - mySQL

Web Crawler

- AWS Lambda
- AWS S3

Data Collection Risks

- There might be risks of data breaches even if minimal data is collected for functionality. (Impact: ⅘, Probability: ⅘)

  Mitigation: As data is collected and stored, anonymity will be a top priority as well as the security of the infrastructure and software with end-to-end encryption when possible.

- Adhering to various regulations regarding financial advice and data privacy can be complex. (Impact: ⅗, Probability: 5/5)

  Mitigation: Accurate disclaimers and easy to understand verbage to convey that the product will not be providing financial advice.

User Acquisition Risks

- Users may be skeptical of the platform's independence and unbiased nature. (Impact: ⅖, Probability: ⅘)

  Mitigation: Provide transparency to users by clearly stating what data is collected and why. Potentially open source certain sections of system.

- Differentiating the platform in a crowded market can be challenging. (Impact: ⅘, Probability: ⅘)

  Mitigation: Focus on a core message of simple, no-frills credit card recommendations with no corporate data harvesting.

- Convincing users to switch from established, familiar platforms to a new one can be difficult. (Impact: ⅗, Probability: ⅘)

  Mitigation: Focus marketing on the core principles of the product and showcase the ease of user when compared to established platforms.

Financial Risks

- Without revenue from ads or sponsorships, the platform must find a sustainable business model. (Impact: ⅖, Probability: ⅗)

  Mitigation: Offer a paid premium tier to unlock additional features along with the free tier.

- Competing with well-established sites that have financial backing from ads and sponsorships may be difficult. (Impact: ⅖, Probability: ⅗)

  Mitigation: Seek vendors to provide accurate information in regards to their products in exchange for anonymous user data

- The platform might miss out on exclusive deals or offers that are only available through affiliated sites. (Impact: ⅘, Probability: ⅗)

  Mitigation: Maintain low operational costs as it gains popularity in order to maintain afloat.

Conclusion

- Rewards Maximizer will alleviate the problem of not knowing which card to use for a particular purchase.
- Defaulting to one card or not knowing which card to use could leave the consumer missing out on potential rewards points.
- The Rewards Maximizer web application will allow the user to search for an item and provide them with the best card in their wallet for the purchase.
- Our goal is to help consumers optimize their rewards points for small daily purchases or infrequent large purchases.

References

Deloitte. (n.d.). *Taking a customer-centric approach to a data breach Insights from crisis response*. Deloitte https://www2.deloitte.com/content/dam/Deloitte/ca/Documents/risk/ca-Data-Breach-Customer-Centric-POV-EN-AODA.pdf

Hsu, J., & Moss, E. (2022, August 10). *How to Migrate Your Community to a Different Platform Successfully*. Commsor. https://www.commsor.com/post/how-to-migrate-your-community-to-a-different-platform#:~:text=Switching%20community%20platforms%20is%20a,your%20team%20and%20key%20stakeholders

Kumar, B. (2024, May 3). *How To Make Money on YouTube in 2024: 7 Simple Strategies*. Shopify. https://www.shopify.com/blog/198134793-how-to-make-money-on-youtube

References Cont'd

PayPal Honey. (n.d.). *PayPal Honey | Coupons and Cash Back*. PayPal US. https://www.paypal.com/us/digital-wallet/ways-to-pay/paypal-honey

Rakuten. (n.d.). *Online Coupons & Cash Back: Shop 3,500+ Stores!*. Rakuten. https://www.rakuten.com/

Rocket Money. (n.d.). *Learning Center*. Rocket Money. https://www.rocketmoney.com/learn

Soucy, P. (2024, July 3). *Best Credit Cards - June 2024*. NerdWallet. https://www.nerdwallet.com/the-best-credit-cards

Appendix

Major Functional Components Diagram