Lab 1 - BetterSwipe Product Description

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1. Introduction

Rewards credit cards have the potential to save consumers a substantial amount of money. For every purchase that gets made, a certain portion of that cost can be earned back and reapplied toward other purchases that the consumer would otherwise have to pay for with their income directly. Unfortunately, the process of finding the best credit card is frustrating and time consuming due to several complicating factors. A nationwide survey conducted by Experian (2017) revealed that 61% of people in the United States are overwhelmed by the number of options available to them. 85 rewards credit cards were tracked by Credit Karma (2023) as of November 2023, and that number changes as new cards are made and older cards become obsolete.

Beyond the sheer quantity of cards, comparing these cards against each other becomes a challenge when 3 reward systems are at play that aren't interchangeable. Cash back rewards provide the consumer with cash directly, but other rewards such as miles and points which don't have a direct cash value. Different spending categories can reward a different number of miles or points per dollar spent, and the cash value of those rewards depends on where they are spent. In Experian's survey (2017), 57% of the participants expressed difficulty in figuring out which cards would fit them the best. If a consumer's card provides rewards for categories that they rarely make purchases for, those rewards can become underutilized. It has been found that 69% of credit card holders have rewards that they are not utilizing (Black, 2022).

There is a clear need to filter credit card options that don't fit the consumer's lifestyle. Significant time and effort could be saved in their search and their choices would be better informed if they were shown which cards benefit their own expenditures. BetterSwipe is an

application that aims to do just that. It utilizes expenditure profiles unique to each person to search for credit cards that would specifically benefit them.

2.BetterSwipe Product Description

BetterSwipe utilizes the user's bank and credit card statements to create a personal expenditure profile. This profile is analyzed to see how much money is spent across several spending categories by the consumer. BetterSwipe calculates the equivalent dollar value of the rewards that each card would grant if it had been used to pay for those same costs. The credit cards that would provide the greatest returns are provided to them. Continuous updates to their profile will provide updated card recommendations to accommodate lifestyle changes, as well as rewards tracking and recommendations on where rewards can be spent to ensure the consumer is provided with the maximum benefit their cards can offer.

2.1. Key Product Features and Capabilities

Several websites exist for recommending credit cards to consumers. 55% of credit card users use matching tools like these to combat the challenges of finding an appropriate card (Experian, 2017). These sites provide questionnaires with vague questions for the user to fill in which narrow the cards into categories. What sets BetterSwipe apart is its use of the consumer's spending profile, providing them with the actual tangible savings they could earn. With just a few clicks the user will be as close as they can to seeing what it would be like to have those cards in their wallet.

Spending habits change over time based on life's necessities. Where other services would stop once the user has applied for their credit card, BetterSwipe continuously monitors the spending profile to see if that card continues to be an appropriate fit, or if other cards would be better. Rewards on cards that the consumer currently owns are tracked to check how often they are being used, which provides more insight on how appropriate that card is for them. This tailors their recommendations to always match their needs.

2.2. Major Components (Hardware/Software)

BetterSwipe is a mobile and web application which can be run on computers and mobile devices as long as there is an internet connection. From the device the user will be able to scan their own bank and credit card statements, or automatically connect to their bank or credit card provider to automatically receive their statements. This data would be transferred securely to the BetterSwipe website hosted on Amazon Web Services (AWS).

On the back-end, the purchase data would be sorted into spending categories, which would then be used to calculate how much the consumer is spending in each category. An algorithm would then interface with the Rewards Credit Card (RewardsCC) API to search for credit cards and calculate their estimated reward value based on those spending categories. The user's expenditure profile and cards are saved using an SQL database where they can be accessed later for further recommendations.

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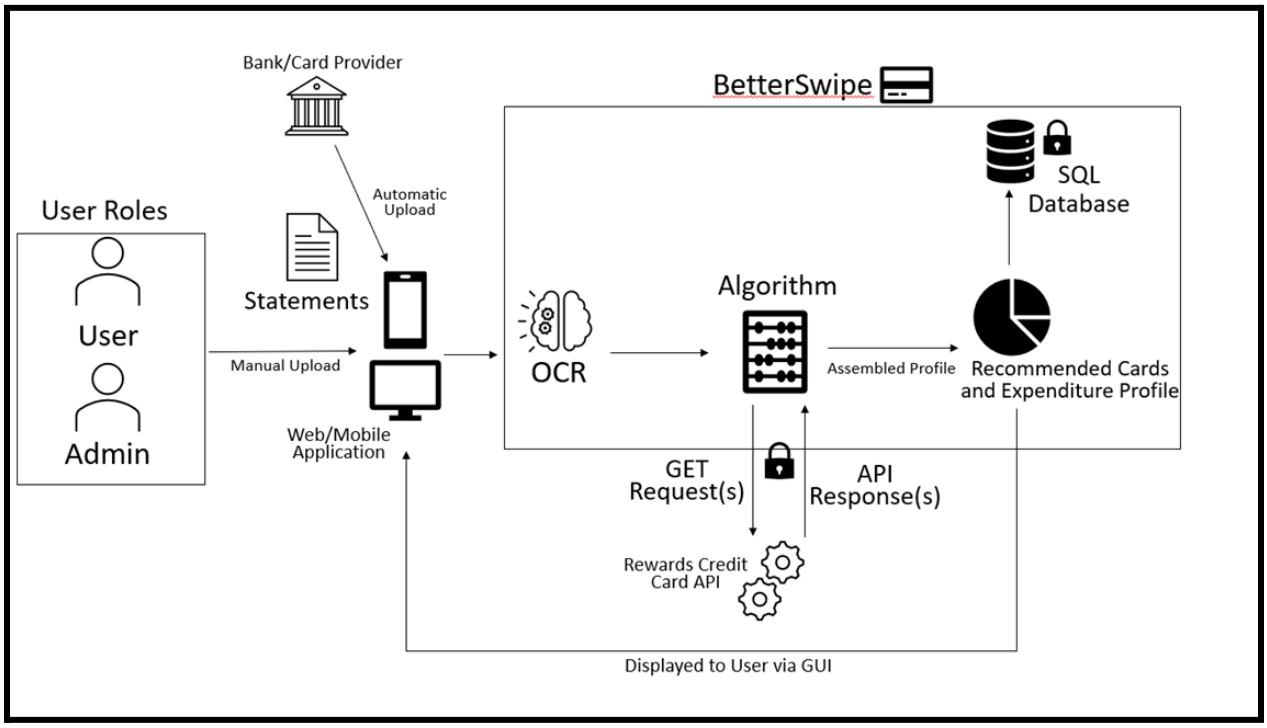
Figure 1

BetterSwipe Major Functional Component Diagram



3.Identification of Case Study

BetterSwipe is aimed to help consumers who are looking for new rewards credit cards because it will simplify their searching process. It is also aimed at consumers who wish to save their money, since it will offer the best rewards cards for that consumer and ensure that those rewards get utilized. Since it recommends cards based on purchases the consumer is already making, it can also be used by people who are looking to build up their credit responsibly.

College students are typically young-adults, which is a demographic that is only starting to build up credit. Since their experience in researching credit cards is limited, a tool like

BetterSwipe would be highly beneficial. Participating students at ODU who are looking for credit cards to build up their credit can act as a case study by using BetterSwipe to recommend them a credit card and track its rewards.

In the future there is the potential for BetterSwipe to provide an analysis of user expenditures. Banks and credit card companies could use the analytics to see what influences consumers to get their cards, however care would have to be taken to maintain unbiased results in credit card searches. Businesses could also use it as a statistical tool to see which markets consumers are most active in.

4.Product Prototype Description

4.1. Prototype Architecture (Hardware/Software)

4.2. Prototype Features and Capabilities

4.3. Prototype Development Challenges

5. Glossary

Application Programming Interface (API): software intermediary that allows two applications to talk to each other. APIs are an accessible way to extract and share data within and across organizations.

Artificial intelligence (AI): development of computer systems capable of performing tasks that historically required human intelligence, such as recognizing speech, making decisions, and identifying patterns.

Annual Percentage Rate (APR): is the cost you pay each year to borrow money, including fees, expressed as a percentage. The APR is a broader measure of the cost to you of borrowing money since it reflects not only the interest rate but also the fees that you have to pay to get the loan.

Amazon Web Services (AWS): is a subsidiary of Amazon that provides on-demand cloud computing platforms and APIs to individuals, companies, and governments, on a metered, pay-as-you-go basis. Clients will often use this in combination with autoscaling.

Graphical User Interface (GUI): a form of user interface that allows users to interact with electronic devices through graphical icons and audio indicators.

Machine Learning (ML): a branch of AI and Computer Science which focuses on the use of data and algorithms to imitate the way humans learn, gradually improving its accuracy.

Optical Character Recognition (OCR): the process of extracting text from an image so that it can be read and interpreted by a machine.

Rewards Credit Card: credit cards which offer you some type of “reward”—typically cash back, points, or travel miles—for every dollar you spend, sometimes up to certain limits.

6. References

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