

## **Project for the Public Good**

### **CISC 3650 – Group 3**

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#### **Lab 4 - Need finding**

1. Core Demographic - anyone who uses public transportation for travel and buys MetroCards in New York.
2. Three types of individuals in our core demographic are: technological savvy people, people who take buses, and people who travel via MetroCards rarely.
3. We will be conducting an online survey as well as a physical survey and send it out to people we know and come up to people in Brooklyn College to ask them to participate in a survey

We will be asking the following questions:

- a. What is your gender?
  - b. What is your age?
  - c. Do you take the train, bus, both or neither?
  - d. How often do you use public transportation?
  - e. Do you like the MetroCard system? Explain
  - f. What changes (if any) would improve the MetroCard system? (Not including price)
4. Majority of our participants responded that they do not like the MetroCard system. Some responses were that the MetroCard refilling system is inconvenient, that it is a difficult process to recover the money that you had on the MetroCard and that the paper transfer (that you receive from paying in coins on buses) only works to transfer to another bus and not another train - so when you don't live near a train you have to pay twice just to transfer from a bus to a train. Majority of the responses for improvements were to go digital by refilling the MetroCard online or on an app.
  5. While some of the reasons for not liking the MetroCard system are valid, we can only solve some of the problems with our own technology. We plan to make a website that allows you to check and refill your MetroCard balance by entering the number that is on the back of the MetroCard.

Our project is considered as a project for the public good because a lot of people have issues adding money to their MetroCards on a daily basis, whether it's because of the machines or because they live far away from a train station where they can refill their

MetroCard. Our website, if it was an actual fully functional site, would help a lot of people save time, and the hassle of refilling a MetroCard. Not only can people add funds, they can check how much money their MetroCards have, to ensure that they never not have enough money on there to get somewhere.

## **Lab 5 - Personas and Scenarios**

Persona 1 - Steve Swipe is a Brooklyn College freshman who loses his MetroCard all the time. Steve tends just throw his MetroCard anywhere in his pocket or bag whenever he is done using it. He loses a MetroCard almost at least once a month.

Persona 2 - Jerry Jumble - Brooklyn College teacher assistant mobile banker, who wonders why he cannot check his MetroCard balance on his phone. He is someone who loves technology and wonders why MTA hasn't yet implemented an app that allows people to check their balance on their phone. It would make things much easier for not only Jerry but for other New Yorkers as well.

Persona 3 - Max Metro - mid 30s educator who is always late because refilling his MetroCard always takes too long and the machines by his house are always broken. Max is someone who cannot ever seem to be on time. Max seems to always forget how much his balance actually is on his card and because he is always late he has no time to check it. It doesn't help that the machines by his house are always broken and there's no workers there to insert money. He can only hope there is a website that he can refill or check his balance.

All 3 personas are running late to the same class (teacher, teacher assistant and student). The teacher tells his class that he does not have a train station near his house and his MetroCard ran out of money, so he had to walk to the nearest train station to refill his MetroCard. The student was running late because he had lost his MetroCard and had to buy a new MetroCard, he only had coins with him but both machines at his train station wasn't accepting coins at the time due to some malfunction, so he had to go to the deli to exchange his coins for cash. The teacher assistant had mixed up his old MetroCard and new MetroCard and was not sure which one had money on it, so he had to check each MetroCard. One of the students in the class suggests using this new app that allows you to check your MetroCard balance and refill your MetroCard from anywhere - saving lots of time and preventing any problems that you could have with the MetroCard refilling stations.

## **Lab 6 and 7:**

### **3) Written Component: Website Design**

**1. Having conducted your needfinding and created personas and scenario(s), write a brief synopsis of what your website is intended to do. What problem will it solve, for which group of people? What are the demographics of that group? Why do you think this is an important project?**

Our website is intended to provide a way for NYC area commuters to manage their MetroCards online. New Yorkers are always in a rush as is and standing in line to add fares to our cards only makes us even more late. There is no specific demographic beyond that as everyone can benefit from having a way to view and add funds online. Upon conducting a survey, we found that most of the participants were not happy with the MetroCard system. In addition to the simple inconvenience of waiting in line, if you lose a MetroCard, any money that was on it is gone. Tracking funds online will provide an easier way to recover those funds.

**2. Include pictures of your wireframes (there must be at least 3, created in Balsamiq). Justify your final design choice: why did you make the design decisions that you did? You do not need to write an answer to every question asked in Section 1 but you must provide a detailed, well-reasoned justification. Some things to include: how did you decide on colors? Placement of items? User feedback?**

#### **Directions?**

The buttons are consistently placed on the screen. The navbar provides navigation in a location that is familiar. All web sites have a home button on top, PDF readers have page forward/back buttons on a bar on top, etc. Buttons that take user to the next step of an operation are placed in similar locations, if not the same one, as the page changes.

The MetroCard number that begins all operations is required as that is the main key that ties all operations together. The custom amount field on the Add Funds screen is not required as the user can choose from a preset list of options. All fields accept only alphanumeric text. Commas to separate, for example, a city from a state are not necessary as those fields are separate. Likewise, fields that accept names do not accept numeric input, and fields that accept numbers do not accept alphabetical input.

An image of a MetroCard is included to immediately signal what this application pertains to. When the user is prompted for a MetroCard number, an image of the back of the card indicating where to find that number is displayed instead. There is no mystery about what the application is asking for. The user is given clear feedback as to what is needed next.

**3. Read Chapter 7 in the reading assigned. Refer to the list of Schneiderman's Eight Golden Rules for interface design (covered in lecture 3; refer to the lecture slides as well). Choose *four* of them and explain how your website adheres to those guidelines.**

#### **1. Strive for Consistency**

- Identical terminology is used in menus (navbar buttons)

- Stylistic attributes are consistent across pages (colors, fonts, capitalization)
- Placement of images and forms is consistent

### **3. Offer Informative Feedback**

- Confirmation message when submitting billing information
- Error message when attempting to submit with invalid inputs
- Invalid form fields are highlighted

### **5. Prevent Errors**

- Inapplicable menu items are greyed out
- Form fields accept the appropriate type of input
- User is shown the format for relevant fields (e.g., credit card number)
- Valid form inputs are preserved

### **8. Reduce Short-Term Memory Load**

- Information is preserved between displays:
  - The MetroCard number, current balance, order type, and amount being added that the user entered is displayed up until the final form submission.
- Lengthy form doesn't span multiple displays (billing information)
- All fields of the form can be seen without scrolling (placed side-by-side)

**4. Section 7.1 in the reading refers to principles of interface design. There are three main categories: learnability, flexibility, robustness. Choose *one* principle from each category (e.g. for learnability, you can choose predictability, synthesizability, familiarity, generalizability, or consistency) and explain how your website adheres to that principle. You may have some overlap with your answer to the previous question.**

#### **1) Category: Learnability**

##### **Principle: Synthesizability**

***“Support for the user to assess the effect of past operations on the current states”***

The information the user entered for the transaction displays until the transaction is complete. The user knows exactly how much they will pay, the payment method, and into which MetroCard before they agree to doing so.

#### **2) Category: Flexibility**

##### **Principle: Substitutivity**

***“Allowing equivalent values of input and output to be arbitrarily substituted for each other”***

The user can select from a preset list of dollar amounts or fare counts to be added to their card. The same effect can be done with a box that lets users enter in a custom amount. The user can choose which method suits them best.

The user can check their MetroCard by clicking the “My Card” link on the header, clicking the “View My Card” button on the homepage, or by clicking “Check New Card” after already checking one. This allows for different workflows.

### **3) Category: Robustness**

#### **Principle: Recoverability**

*“Ability of the user to take corrective action once an error has been recognized”*

When the user submits the billing information form, they will be notified about any errors. Valid fields will remain and only those which need to be corrected will be highlighted.

## **Lab 8 – Persona, Scenario and Accessibility Code Changes**

### **Persona #4**

Alyssa is a student with dyslexia. She has trouble reading and though she isn't blind the use of braille and text to speech on the MTA's physical machine makes for a seamless experience when checking and adding funds her MetroCard. She also takes advantage of NVDA readers to navigate through and utilize features of websites.

### **Scenario:**

Using the site was not the most fluid experience for Alyssa. She had trouble reading the text on the home page. But seeing a bright blue button she decided to click it. When she came across the page to enter her MetroCard number the task proved to be difficult. She couldn't understand the instructions on the website that told her the location of her MetroCard number. Just to see how the site would operate she entered a random MetroCard number. She saw but could not understand text regarding information on the card. She also saw buttons in which she struggled to understand their purpose. She immediately just closed the website and headed to her nearest subway station.

### **Accessibility code changes**

#### **Home.html**

- Line 3 – added html language
- Line 7 – added detailed title
- Line 24 – added alt image description
- Line 36 – changed link to button

#### **MyCard.html**

- Line 3 – added html language
- Line 7 – added detailed title
- Line 26 – added alt image description
- Line 30 – added label for MetroCard number & specified that it is 10 digits
- Line 33 – added pop up message to fill out the field
- Line 35 – changed link to button
- Line 42 – added alt image description
- Line 52-53 – changed 2 links to buttons
- Line 60 – added alt image description
- Line 69-72 – changed 4 links to buttons
- Line 74-75 – changed 2 links to buttons
- Line 77 – added label for other amount
- Line 83 – changed link to button
- Line 103 – added alt image description
- Line 114 – added label for first name & required asterisk
- Line 115 – added label for last name & required asterisk

- Line 124 – added label for city & required asterisk
- Line 125 – added label for state & required asterisk
- Line 136 – added label for address & required asterisk
- Line 144 – added label for country & required asterisk
- Line 145 – added label for zip code & required asterisk
- Line 156 – added label for credit card number & required asterisk
- Line 179 – added label for CVV number & required asterisk
- Line 180 – added label for Expiration Date & required asterisk
- Line 190 – changed link to button

#### Support.html

- Line 3 – added html language
- Line 6 – added detailed title
- Line 59 – added label for dropdown selection
- Line 66 – added label for support textarea
- Line 67 – added pop up message to fill out the field
- Line 68 – changed link to button



## Lab 9: Steve Krug Evaluation

### Questions:

1. What is E-Card?
2. For how many days is MetroCard#1234567890 unlimited?
3. When does MetroCard #123456789 expire?
4. How much money is on MetroCard #1234567890?
5. How much do 10 rides cost?
6. How much is a 30 Day Unlimited MetroCard?
7. Add \$20 to MetroCard #1234567890, what is the order type?
8. What is the Final Balance of MetroCard #1234567890?
9. What if you changed your mind, and you want to add 10\$ to the same MetroCard, what should you do?
10. Fill out the billing form and submit it, did you have any issues?
11. What can you contact support about?
12. Who are the developers of E-Card?