**Comp 3020: Project Milestone 4**

**Heuristic Evaluations**

Our group, consisting of 4 evaluators, performed our heuristic evaluations by first having a short meeting where we talked about the requirements and deliverables involved in Milestone 4. We then set a deadline for everyone to walk through the website and take notes on areas of the website that violate Nielsen’s heuristics, as seen in lecture 27. Following the individual evaluations, our group began the team evaluations by reading over the heuristic violations that each evaluator had gathered. Our group evaluation methods were simple, we navigated through each area of our website and bounced ideas off each other, compiling a list of problem areas we found to be the most significant and what specific heuristic lead to the issue. During the process, we gave ideas on how we would attack the problem in another iteration, writing everything down in point form. To end the group discussion, we talked about many ways of organizing the material in our report. We all agreed that organizing our report by heuristic would make the most sense as it provides a clear structure to the report, and a way of organizing everything based on issues that have similar properties.

**Help and Documentation**

While completing our heuristic evaluation, our group identified an aspect of our group payment concept as a major problem area of our system. We took our users feedback from Milestone 2 into consideration when creating our high-fidelity prototype, but we believe that the group payment process could still cause confusion for a user. The tooltips provide the user with a means of understanding the process, but group payment is not a common feature on most websites, so we believe we should provide the user with more resources to understand the process if further confusion arises. This issue violates Nielsen’s heuristic of help and documentation. The severity of this problem is minimal as the user is still provided help via the tooltips. When iterating on our design again our group agreed on implementing a help button that provides a video embedded in the website to walk the user through an example of the process. We decided on a video format rather than written documentation as users are not likely to read through any written material when they want to purchase a movie ticket. As we learned from class, a user’s attention span is short, so for the video to be effective it must be short and to the point, highlighting the key components to help a user understand the group payment process.

**Flexibility and Efficiency**

We found two aspects of our websites that violated this heuristic. The first aspect is the users must click the add button or the subtract button to make changes to their purchases on the ticket and food/drink webpage. This functionality is adequate if there are only a few purchases being made. However, when it comes to large purchases, users will have to click the buttons multiple times creating a very tedious experience. This problem is very severe in terms adhering to the core concepts of this heuristic since it makes the ticket purchasing process very slow and would potentially drive away users from our website. This problem can be solved by adding a text field where the users can input the amount of items they wish to purchase on top of this existing functionality. By doing so, users can make large purchases quickly and speed up their overall ticket purchasing process.

The second aspect that violates this heuristic is the fact that the user must enter their information every time they wish to make a purchase. Even though this problem can be solved in our design by creating an account and saving their information, we feel that people should have access to this function even if they do not have an account. This problem is not very severe since it was partially addressed in our design, as people who don’t choose to create an account are likely not frequent users of our website. A solution to this issue is to integrate our design with browsers to allow the browser to keep track of the information that’s entered in our website. For example, the chrome auto-fill box allows users to save their input on specific textboxes for easier access in the future. Our solution would be to implement something similar in our next iteration of design in order to satisfy this heuristic and improve the user-experience for our customers.

**Error prevention**

Based on our group discussion, we found three violations in regards to the error prevention heuristic. The first heuristic violation is that the users don’t know the proper format when they enter information into our form fields. For example, when we prompt the user to enter the CVV/Security Code number on the back of their credit card we do not inform them that we expect a 3 digit number as input. This example can be generalized to a majority of our input fields. This problem is severe as the user will assume what the correct format is, potentially entering invalid information. This problem can be solved by implementing placeholders that show the user the format we expect to receive as input. For example, in a future iteration we would add an example CVV number as the placeholder for that field. Providing this small modification we can enhance the user experience tremendously.

The second issue that was identified in terms of error prevention was regarding our payment section of the website. The issue here is that the forms and fields that prompt the user for their payment information do not require the user to type anything in. Allowing users to bypass the payment portion of the ticket purchasing process violates the error prevention heuristic. This issue is enormously severe as the user can obtain a ticket for a movie without entering any payment information. This creates adverse effects for both the company selling tickets and a user purchasing tickets as the confusion could cause a lot of frustration. In another iteration of the design process, our group would address these issues by making all fields essential to the payment process required before continuing. By providing the user with feedback when they have not completed such fields, we can prevent the user from performing errors. We would further implement algorithms to validate credit card information, insuring that the credit card number the user entered was valid.

The third heuristic violation is that the sign up feature isn’t specific about what fields are required. This could cause annoyance for the users as they may not provide information that we require when creating an account. This can become tedious when the user must guess which fields are mandatory. This violation is not immensely severe as our target audience is between the ages of 18-29 so we can assume they have experience filling out sign up forms. As a group, we agreed we would address this problem in another iteration by adding asterisks to the fields that are vital to the sign up process. In addition, checks would be made on mandatory fields that are empty to provide the user with specific error messages. By modifying the sign-up system, the users can clearly know what information they must provide.

**Visibility of System Status**

We identified multiple visibility violations in our website while conducting our heuristic evaluations. The first violation we noticed is that our website provides no indication of how much tickets cost until you actually add one to your purchase. Our customers will most likely not know the prices for tickets since our research found that most of our users will be casual users who only go to the theater less than once a month. Not showing ticket prices initially will be a very severe problem since the user is not provided important price information which can cause confusion and may even cause customers to not continue their purchase. This also affects our environmental requirements of users needing to be able to use the system in a rush since the lack of information could cause confusion. We can solve this problem by adding an area in the table to show the users the cost of each ticket type.

In addition, we also noticed that we do not inform the users about the age groups for each type of ticket. Just like the ticket price problem we had, some users would not have knowledge of which age group they would be a part of. This is a big problem because it could cause a lot of uncertainty and may cause some users to purchase a ticket that they would not qualify for. We can solve this problem by adding text information on each ticket type that states which age group qualifies for each specific ticket.

Another visibility violation from our website is that the user is not provided with a running total when going through the process of purchasing tickets. This is a very severe problem because the user is only shown the total amount they must pay at the payment screen. This means the user could keep purchasing items without realizing that they may be going over their personal budget until the payment screen. This could result in user frustration since they would have to go back to previous screens just to remove items they no longer wish to purchase. We will fix this by having a running total shown on every screen past the ticket selection page. By adding this feature, the user will be informed of how much they will have to pay at the end to aid in their decisions.

Another visibility violation we found while conducting our heuristic evaluation is located in the seat selection page. We realized that our website does not explain to the user how to use the seat selection page. Our seat selection page does not explain what the seat colors mean or clicking on a seat is the action required to reserve/unreserve a seat. This is not a severe problem however, the lack of indication on how to interact with page could result in the user wasting time, due to clicking next without selecting their seats. This is a problem that can easily be fixed in another iteration by adding a color legend at the side that explains what each seat color means.

Finally, our website informs the user of which step they are currently in, however, it doesn’t inform the user of the past and future steps of the ticket purchasing process. For example, someone in the seat selection screen would not know that the next step would be to purchase food and drinks. This is not a severe issue, however, we should keep the user informed about where they are and where they are going. In the next iteration of the website, we plan on implementing breadcrumbs so that the user would be able to tell how many steps they need to do to complete the process and/or allowing for faster navigation of the website.