**ICS4U**

**Nanziba Tasneem**

**Phase 3: Problems Encountered**

During the development of our program “Hattpad”, each member of the team faced problems of their own and worked their way to a suitable solution. The following list contains the problems I had faced, along with how my team members and I solved each one:

1. **Problem:**

The initial problem I faced when I started the programming was trying to figure out how GUI worked. I wasn’t sure how to add text, buttons or text fields.

**Solution:**

I had found the solution to this problem fairly quickly because of the numerous websites available that provide tutorials on how to code for these features. One of the websites I used was: Tutorials Point (URL: <https://www.tutorialspoint.com/javaexamples/java_simple_gui.htm>)

This site led me through each feature of GUI and I was able to apply what I had learned for all of the Book Information Page.

1. **Problem:**

One of the most significant problems that I had faced during the programming was figuring out how to create one class that can serve for all the books. In the beginning, I had developed one class for one book and very quickly it became apparent that doing the same for more books would be tedious and unnecessary.

**Solution:**

To solve the problem, I tried several methods. One of the solutions I tried was having a method for each book and inputting all of that in one class. This seemed like a good solution until we realized that it would be harder for an admin to add other books through the program. After continuous researching and consulting with other teams, our team leader, Bilal found a solution to the problem. He suggested that we use arrays and display the information on the frame. Using his method, I imported all the information to a text file and a simple code calling the information from that file was added to the code.

1. **Problem:**

Another problem that I faced was uploading a cover image for each book. It seemed that every time I added a cover image on part of the frame, either it would display it as the background or display nothing at all.

**Solution:**

To solve this problem, I used the concept of button icon. I placed a button on one side of the frame with dimensions (200x300). Then I inserted the code:

“JButton cover = new JButton ();  
 …ImageIcon icon = new ImageIcon(imageToPrint);  
 cover.setIcon (icon);  
 cover.setBounds(10, 50, 200, 300);”

This code created a button that had an icon of the cover image of the book. The button did not lead anywhere and to a user, it was just an image. Using this concept also helped solidify the compartments because without it, the cover image would be set up on top of the background image.

1. **Problem:**

A problem I had faced during the programming was not knowing to add a media clip to the book information page. We had intended on adding a media clip of the book onto the page and when a user would click on it, the clip would play. However, I had never done this before and I wasn’t sure on how to approach the problem.

**Solution:**

Even though I found a solution to this problem, it does not appear on our final program. I found the solution by researching online and it was that in order to add a media clip I would need to install Java Media Framework (JMF). JMF is a java library that enables the coder to add audio/video clips to their program. The reason it does not appear on our program is because in order to play the video, the user of the program, would also need to install JMF. While having a video would be a great feature, we did not want the user to go through a lengthy process just to use our program.