Handoff Information

It should first be noted that MobileScanApp is a Universal Windows Platform application. Any searches for how to accomplish certain tasks within the code should include UWP somewhere in the query as Windows Forms results show up far more often when the platform is not specified. Another very important piece of information about this project is that we are operating under the assumption that a system will be implemented within Avery Dennison that adds physical barcodes to items unique to each product. As it is now, the barcodes found on individual products have no correlation to the item they are printed on and instead signify some relation to the order they are within. The application could most likely be modified to read these barcodes as input instead, but it would not solve the problem at hand of over/underpacking. However, if the choice is still made to change the packing process from physical to digital, this implementation is most certainly possible.

Simplicity is a must when it comes to designing the aspects that will determine functionality and useability for this application; the process this program is attempting to replace is already quite efficient and is only up for replacement due to the margin of human error regarding the items picked and the amounts of said items. It is inevitable that some efficiency will be sacrificed in the transition from the current method to the utilization of this application.

The first major process that the application undergoes upon use is reading in the file that contains the order to be packed. The data contained within the order list must be parsed to allow for the interactive list to be generated. While it may seem that a .csv or comma separated value file would be the most logical format to read in the orders, there is an error within the program that generates them causing them to data to be mangled and split in several places. We have no way of accessing the aforementioned program and we are not allowed access to it in any way, so I am assuming you will not either. Because of this, the program will only accept .txt files. While the program will not crash if it reads in an incorrectly formatted file, it will not function properly. Only .txt files generated by the program Avery Dennison uses should be fed into the application as the regular expressions we use are designed specifically for them and their quirks. To parse the order data, the application searches for a keyword that flags it to ignore all previous characters. The same process is done to know when to stop parsing data and ignore the remainder of the characters. Within the characters deemed important, a delimiter is used to separate the different columns of data from each other. All of the details regarding these variables can be found within the TextFileHandler class.

The name of the selected file is displayed after a correctly formatted file is selected and the user is then prompted to confirm their order selection with a button press. A list optimized for touch screen devices is then displayed with the following information deemed important in the TextFileHandler. The user selects an item by tapping on any part of the row an item is contained within. A page then asks the user to confirm the item they selected and offers them a back button if an item was mistakenly selected previously. A new scan page is generated on confirmation of the selected item and the full screen turns into the scanning interface. It has been suggested that it would be more practical to have a constant scan page running alongside the order list that would process any of the valid items. However, the configuration of the ScanPage would need major modifications for this to work. As it is now, a ScanPage is only generated once an item is selected from the list and confirmed by the user. The data displayed on this new scanpage is dependent on the selected item and does not pull directly from the whole order list. To reiterate, this implementation would be possible, but ScanPage would have to be heavily edited for this to work. As for the current ScanPage, once a barcode is recognized, it is displayed to the user through an alert that determines and informs the user whether or not the barcode matches that of the product they selected. The user is then prompted to enter in a number symbolizing how many of the scanned product they intend to pack at this immediate moment. This scanning of a given number of some product can be conducted any number of times until the total for the order is met. Once the total is met, the user is locked out of selecting the completed item from the list as if the entered amounts were correct, this would certainly result in an overpacking of the item in question. Once every correct amount of every product has been packed, the order is completed and is logged to a file within a local folder on the host device generated on the first run of the application.

It is sensible to come to the conclusion after reading all of this information on the application's functionality that the problem of over/underpacking is not entirely safeguarded against using this approach. We are aware of this and between the three of us, this is the best we could come up with that does not sacrifice too much efficiency from the traditional method while still providing a considerable amount of security regarding the amount of items packed and correctness of said packed items. Some very minor changes can be made to the application to cut out confirmation screens and other things that slow down the packing process in exchange for security if it is so desired. The theoretical perfect balance of efficiency and accuracy will only be found once the application is put through more thorough testing which is out of the scope of us to conduct within the remainder of this semester.

I feel that it is also significant to note that Avery Dennison has informed us that typically, only one employee will be packing orders at any given time. Therefore, no issues should arise from the fact that all order files and logs are saved locally on only one tablet computer as anyone packing orders will be using the same tablet each time.