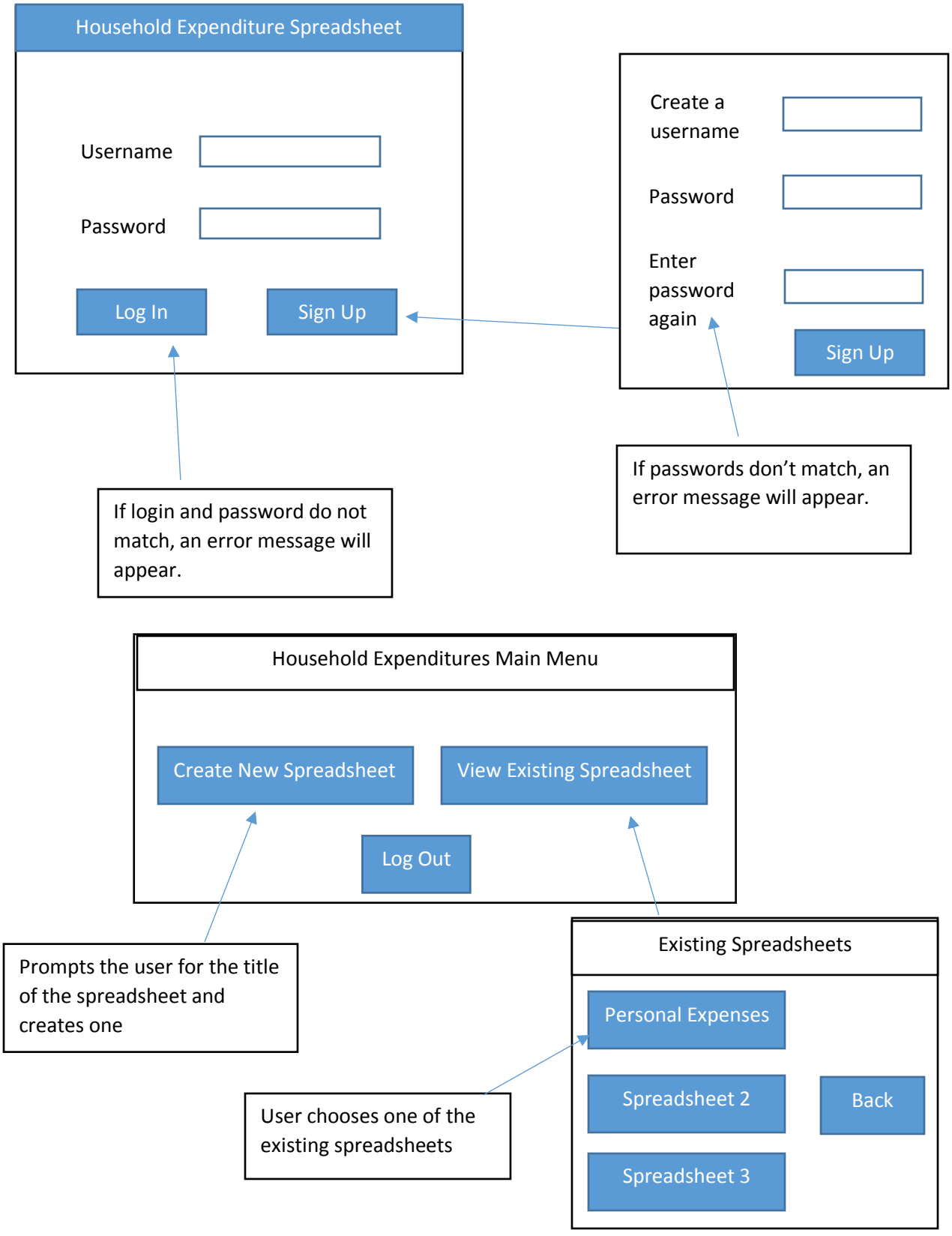
Bobby Liang
December 13th 2020

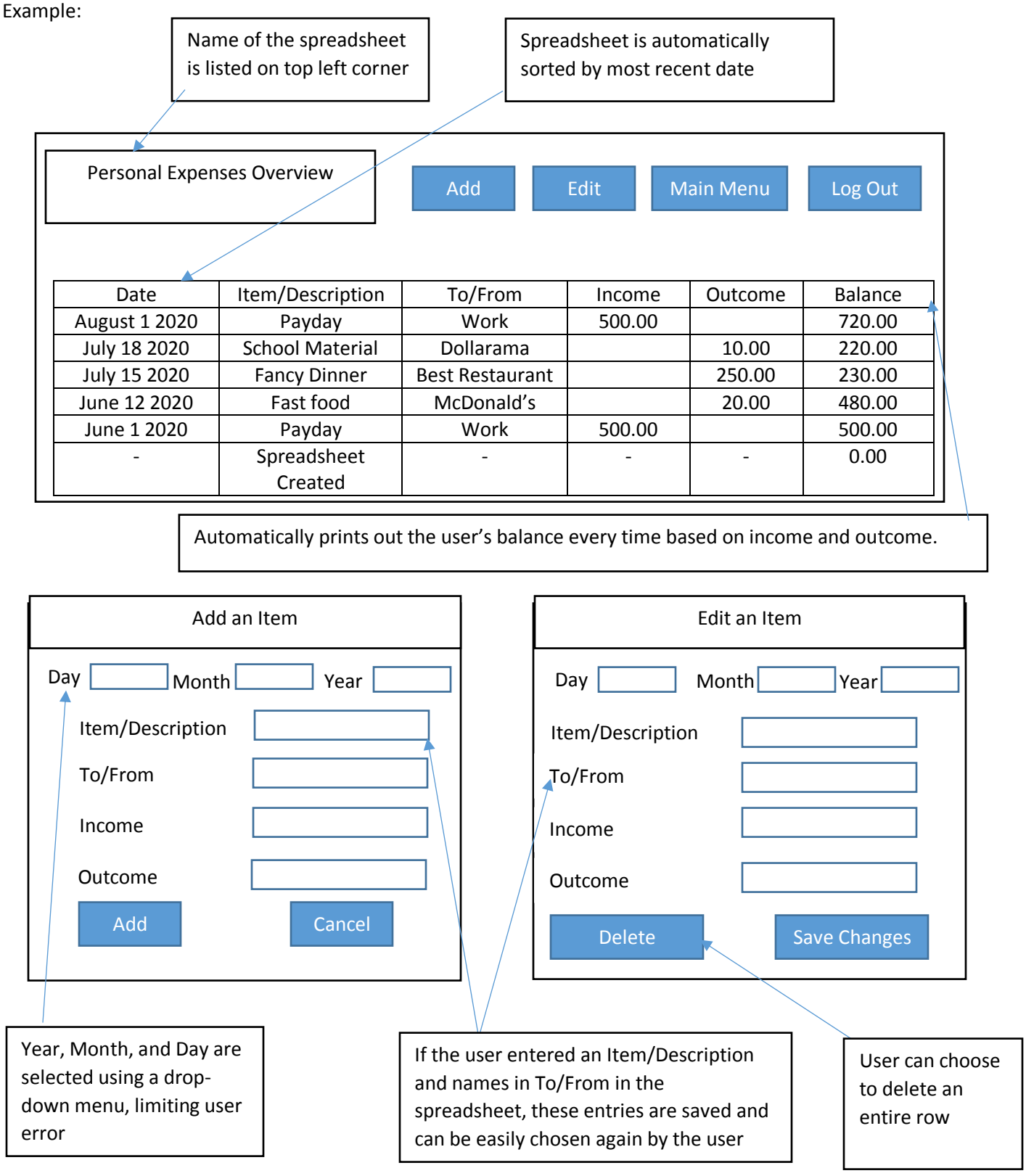
Computer Science IA Design (Household Expenditures Spreadsheet)

Software Design:



Bobby Liang
December 13th 2020

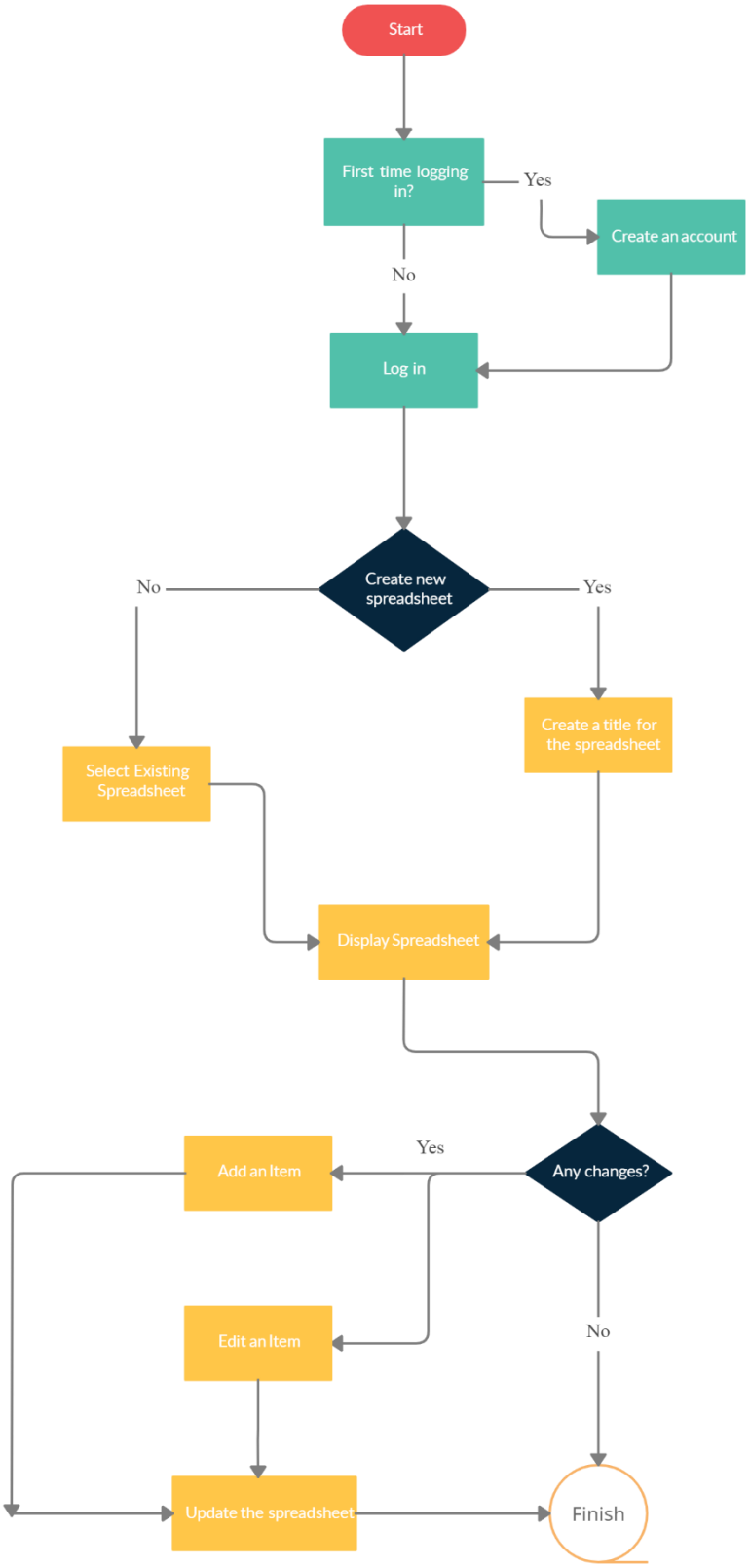
Example:



Date	Item/Description	To/From	Income	Outcome	Balance
August 1 2020	Payday	Work	500.00		720.00
July 18 2020	School Material	Dollarama		10.00	220.00
July 15 2020	Fancy Dinner	Best Restaurant		250.00	230.00
June 12 2020	Fast food	McDonald's		20.00	480.00
June 1 2020	Payday	Work	500.00		500.00
-	Spreadsheet Created	-	-	-	0.00

Bobby Liang
December 13th 2020

Program's Working Plan (process description):



Bobby Liang
December 13th 2020

Input Data:

Data 1 Client selects "Sign Up", proceeds to create a username and password. Last field requires the client to re-enter the password. Afterwards, the client uses the credentials that they just entered to use the program. Example: Username: MyFamily Password: expenses	Comment: The contents in the password text fields are compared with each other to determine whether they are the same. If not, an error message will appear. Location: Once the username and password is verified, a text file will be created storing the username and password.
Data 2 Client chooses to create a new spreadsheet and is prompted to enter the name that he/she wishes to call it.	Location: A text file with the name of the spreadsheet is created. Comment: The program automatically creates a new item with the description stating the spreadsheet has been created. The balance is set to $0.
Data 3 Client chooses to add a new item into the spreadsheet. Example: (assume balance is set to $10) Day: 12 Month: June Year: 2020 Item/Description: Pizza Lunch To/From: John's Pizza Income: 0 Outcome: 10.00 Output: June 12 2020 – Pizza Lunch – John's Pizza – 0 – 10.00 – 0.00 (as shown in the example above)	Location: Text file will be modified to include the user's entry Comment: If the item/description was previously stored in the database, the user can choose to select it again from a drop-down menu. This function would work for the "To/From" text field as well.

Output Data

1. The specific spreadsheet is displayed, sorted by most recent date.

2. Error messages will be outputted if there are conflicting pieces of information (username and password).

Product Development Plan:

Bobby Liang
December 13th 2020

#1 Creating a Database

- Create a class to store the user's spreadsheet information
- Use arrays, possibly ArrayList, to contain the date, item/description, income, outcome, and balance
- Ensure that the array is properly printed

#2 Creating a Spreadsheet class:

- Create a spreadsheet class
- Takes in user-input and sets the contents of the spreadsheet
- Allows the user to modify any information that is incorrectly put in
- Returns the overall balance by finding the difference between income and outcome

#3 Creating a Menu:

- Allows the user to create a new spreadsheet or choose from an existing one
- Allows the user to name their spreadsheets accordingly

#4 Creating a Security Class:

- Prevents others from stealing personal/financial information
- Allows user to input corresponding username and password to access the program
- Allows user to create a new account if it's their first time using the program

Test Number	Description	Instructions	Expected Results
1	Logging into the program	To use the program, the user must log in with their credentials.	The user is able to log into the main menu if credentials are correct. Otherwise, they are stuck on the security page.
2	Selecting main menu options	The user can choose one of two options: 1. Create a new spreadsheet 2. Select an existing spreadsheet	If the user chooses option 1, the program prompts the user for the name of the spreadsheet and displays it. If the user selects option 2, a tab will open with a menu of existing spreadsheets. The user

			selects a spreadsheet and displays it.
3	Displaying the spreadsheet 1. Add an item 2. Edit an item.	1. By using this button, an "add an item" window will appear and allow the user to fill in the required fields 2. By selecting this button, an "edit an item" button will appear and allow the user to modify their existing items	The expected result after using the two buttons is that the spreadsheet will be updated with the given information. The balance will change due to the user's input in the income or outcome column.
4	Income and outcome values are not doubles	User inputs an invalid datatype, for example enters a string instead of a double	The program will prompt the user to enter a positive double value for both input and output.
5	Check "log out" function	Run the program from the main menu or the spreadsheet window and click the "log out" button.	The program should be terminated and all windows should be closed.
6	Check if dates are sorted by most recent	User inputs a new item that is not the most recent on the spreadsheet. User could also modify the date of an existing item and hence the order may not be the same.	The spreadsheet should rearrange the items based on most recent date using a sorting algorithm.
7	Check if previously stored items can be called	The user enters a previously stored item or sender/receiver.	The program should output a drop down menu of all the names of previous items and the user can choose from the list provided.
8	Check "delete" function	1. The user deletes one of the rows in the spreadsheet. 2. The user removes an entire spreadsheet	The program should delete the entire row from its database. The program should remove the entire spreadsheet from the database, removing all of its contents along with it

184 words.