Task 1- Nathan Nelson

1. Problem Statement: A person needs help budgeting, but also has a mistrust of applications that have access to online banking.
2. Who the intended user is: Anybody who wants to track their own spending without much user effort without compromising their own privacy.
3. Why the user has this problem: There are a lot of budgeting applications out there that could help the user track what their money is going toward. They need to get more control over their own spending. However, with all of the cyber threats in this day and age, they do not trust any online third-party application with giving them access to their banking history.
4. How the solution will benefit the user: This budgeting application will rely on the user taking snapshots of their receipts when making a purchase. The app then reads the cost from the receipt, and the user selects from category options for their purchase (entertainment, eating out, groceries, gas, ongoing monthly bill, etc.) This application will use the user's data to create user-friendly charts to visually represent their spending. The user can also enter monthly bills such as rent. This process limits effort by the user to personally regulate their spending and set goals, while also protecting their personal privacy.
5. General flow for addressing the problem: The user sets up an account with personal goals and enters in big expenses such as rent and insurance. When the user makes purchases, they use the application to take a picture of the receipt and enter in the category of the purchase. The application then creates a visually appealing chart to show how much the user spent on certain categories for the month. As well as other statistics, such as how close the user reached to their spending goal, how much was saved for the month.
6. General nature of the solution: This would be a web application.
7. The general software components that will play a role: The UI would be achieved using Javascript React to build the web application, as well as a back end web server. OpenCV could also be used for image processing.
8. The general hardware components that will play a role: Smartphone camera, computer.
9. Similar solutions (why they are inadequate): There are a lot of online budgeting applications, which are allowed access to a user's banking information to minimize user effort when calculating monthly costs for the user. This application will require slightly more attention from the user (taking photos of receipts), but for a purpose of maximizing the user's privacy while still minimizing effort from the user.