Expert Interview 1:

Role: Shopper

Feedback on Functionality:

1. **Crowd Density Heat Map**
    - Usefulness*:* Very useful, especially for shoppers who want to avoid crowds or have a tight schedule. This feature would greatly help with choosing stores.
    - Suggestions*:* Consider adding a notification system to alert users if their chosen store becomes too crowded during travel.
2. **Shopping List with Search and Filters**
    - Usefulness*:* Good and reliable feature. The ability to filter by preferences or price is always welcome.
    - Suggestions*:* Ensure that filters are intuitive and not overwhelming. A collapsible menu might help keep it clean.
3. **In-Store Navigation**
    - Usefulness*:* Great feature for unfamiliar stores, especially when combined with a route optimization feature.
    - Suggestions*:* Add landmarks to make navigation easier for users who might not know store layouts.
4. **Checkout Queue Monitoring**
    - Usefulness*:* Seems helpful in streamlining the checkout process.
    - Suggestions*:* Provide estimated wait times as a range (like 5–10 minutes) to account for variability.

Expert Interview 2

Role: Retail Store Manager

Feedback on Functionality:

1. **Crowd Density Heat Map**
    - Usefulness*:* Seems really beneficial for both customers and staff. Helps manage store flow and avoids overcrowding during peak hours.
    - Suggestion*:* Add a feature that predicts crowd density based on historical data. Allows users to plan ahead of time as well.
2. **In-Store Navigation**
    - Usefulness*:* Very helpful for new staff and during busy hours. Reduces the time spent assisting customers with locating items.
    - Suggestion*:* Add a feature that can list all items in an aisle/area, and highlight items that are low on stock. This can help customers see items that are low in stock that they may want and also help staff see what items need restocking.
3. **Checkout Queue Monitoring**
    - Usefulness*:* Excellent feature for optimizing staffing at counters during rush hours.
    - Suggestion*:* Allow store managers to view and adjust queue estimates based on real time feedback or unique circumstances (like broken scanners).
4. **Save and Reuse Shopping Lists**
    - Usefulness*:* A nice touch for customers who shop regularly. Can also be used to suggest promotions or restocked items.
    - Suggestion*:* Add a reminder feature for users to revisit their list (ex: “You haven’t purchased [ITEM] in a while”).

Revisions

Scenario #1 (Sarah):
Sarah is preparing for her weekly grocery shopping trip with her two children on a Saturday morning. Her children become restless and bored in crowds, so she wants to finish as soon as possible. With the help of her smart shopping app's crowd density heat map, she makes a shopping list and chooses a store further away as it has the smallest crowd. Sarah is notified on her way to the store that although there is a slight increase in the number of customers, it is still manageable. She makes the decision to go to the store. Sarah uses the app's navigation feature, which provides her with the quickest route and landmarks like "Turn left at the bakery section," because she is not familiar with the store's layout. Making sure she doesn't forget anything, she crosses things off her list as she gathers them. Sarah uses the checkout queue monitoring feature of the app to find the shortest line after getting her last item, which shows a wait time of 5–10 minutes. She's glad that her trip took less time than expected, and her kids didn't get too impatient. On her way to checkout, she gets a reminder about a product that she hasn't bought in a while, which includes some of her kids' favorite snacks, so she quickly picks those up before checking out.

Scenario #3 (Sam):
On Monday, Sam opened his store for business as usual. Since adding his store to the smart shopping app, he has observed a notable decrease in the number of questions from customers about the locations of items. Several items in Aisle 3 are running low on stock, according to a notification he received from the app this morning while stocking a new product. Later, Steven, Sam's new employee, shows up for his first training day. Because he is unfamiliar with the store layout, Steven is worried about helping customers. Sam shows him how to use the app's navigation feature, which allows Steven to quickly help customers by highlighting the locations of items in each aisle. Steven uses the app to direct customers during peak hours when the store becomes crowded, reducing confusion. Sam assigns more cashiers as he views the wait times increasing using the app's queue monitoring feature. He makes sure that customers aren't waiting too long by making adjustments based on real time updates. At the end of the day, Sam considers how the features of the app improved the in-store experience for both employees and customers by optimizing store operations.

Prototype

Link to repository: https://github.com/SAMUR274/HCI_P-Roject
Full Description provided in the README file

Appendix

Statement of Equal Contribution:
The undersigned declare that all group members contributed equally to the Smart Shopping Navigator App **-** Part 3b. Each member participated in the following activities:

- Conducting research
- Writing various sections of the report
- Reviewing and editing the final draft
- Attending all group meetings and providing input on decisions

We affirm that the workload was shared equally, and no individual member contributed disproportionately to the project.

Group Members:

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- Jordan Lam
- Samiur Rahman
- Justin Lau

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