E-Cashier

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Introduction & background

Presently, people utilize technology to make their daily activities easier. Shopping at the supermarket is one of these daily activities. According to a study, 32 million individuals visit supermarkets to buy their daily necessities [1]. During shopping, the long queues are the primary cause of a disappointing shopping experience. 29% of consumers leave a store when they see long queues at the checkout counters, and 25% say they go to another store to buy the same product".[2] The E-Cashier application enhances the shopping experience and facilitate the purchase process. It allows consumers to complete their purchases without needing to wait in queue. Figure 1 shows the shopping via the E-Cashier application steps:

Fig 1: Purchase Process Steps

The related existing systems shown in Figure 2:

Fig 2: Related Existing Systems

Objectives

The main objective of the E-Cashier application is to design and implement an E-Cashier application that aims to:

- To provide a reliable and accurate system.
- To utilize the technology that facilitates in-store purchases.
- To assign cashier tasks to the consumer.
- To provide the supermarket representative with the ability to monitor sales via a dashboard.
- To enhance customer service by providing AI chatbots and FAQ.

Methodology

1. The “Waterfall development-based methodology”. shown in Figure 3.

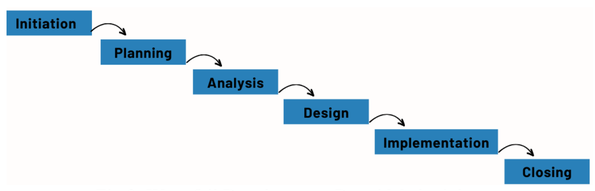
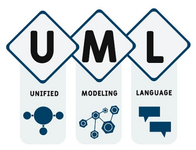


Fig 3: Waterfall Development-Based Methodology

2. Requirement Gathering Techniques

1. Questionnaire 2. Interview 3. Brainstorming

3. System and Data Modelling Language



4. Hardware Specifications

1. Smartphone 2. Desktop/Laptop 3. Router

5. Implementation Tools

1. Android Studio 2. Flutter 3. WCAG Color Contrast

Result

The E-Cashier application is the result of the project. It enables the consumers to complete their purchases using the smartphone. It provides several features: export invoice, dashboard, AI chatbot and FAQ. The application has multiple icons and navigation methods.

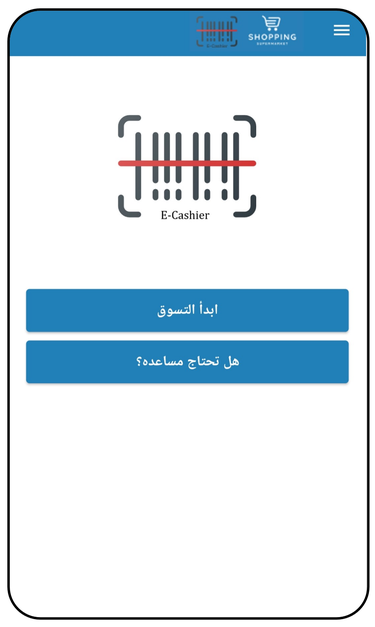


Fig 4: Start shopping page

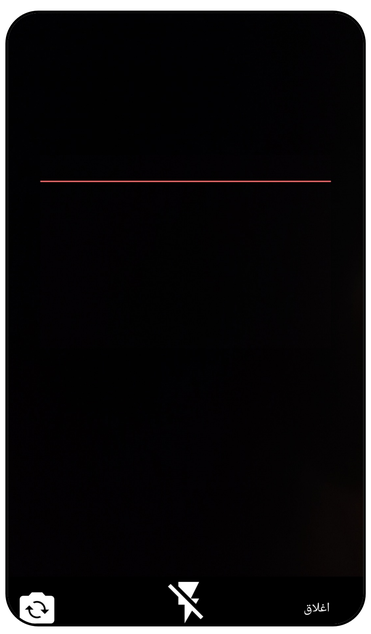


Fig 5: Scan item page

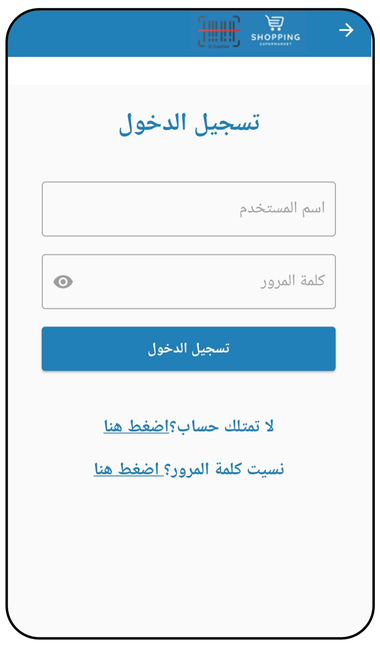


Fig 6 : Consumer’s login page

Fig 7: Dashboard page

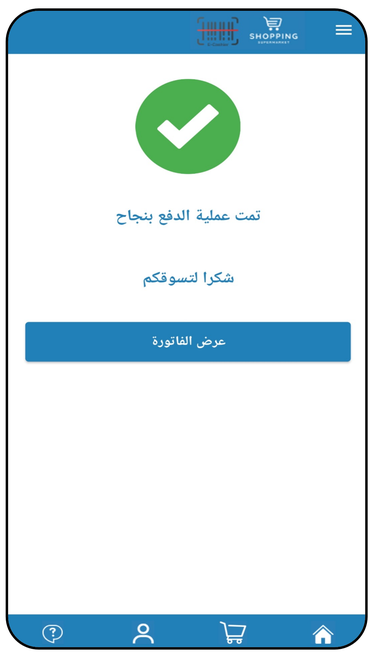


Fig 8: Complete payment page

Fig 9: Manage FAQ page

Conclusion

The E-Cashier application used by consumers and supermarket representative. The application fulfils the functional and non- functional requirements by applying the following:

- The application facilitate the purchasing process in supermarkets by assigning the cashier's tasks to the consumer.
- The application influences the consumer experience, improves the purchase process and saves consumer's time.
- The purchasing process in the application involves three steps; scanning the item barcode, managing the shopping cart, and making payment.
- The application provides for the consumer the finest shopping experience and purchase process at the supermarket.

Future work

Improve The AI Chatbots

Support English Language

Handle The Return and Exchange Operations

Develop on IOS System

References

[1] “7 facts about grocery shopping that might shock you,” *Fivestarhomefoods.com*. [Online]. Available: https://www.fivestarhomefoods.com/blogs/grocery-shopping-facts/. [Accessed: 10-May-2022].

[2] B. Sánchez, “How to minimize the negative effects of in-store queues,” *ORQUEST - Software planificación de personal*, 14-Aug-2019. [Online]. Available: https://orquest.com/en/minimize-negative-effects-of-in-store-queues/. [Accessed: 13-Jun-2022].

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