TAR UMT Cafeteria Ordering System (JomMakan)

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Abstract

- Develop a mobile application that can address inefficiencies in traditional food ordering process faced by TAR UMT students and staff using Dart and integrated with a recommendation system.
- Allow users to book their own seats in advance during ordering process.

Problem Statement

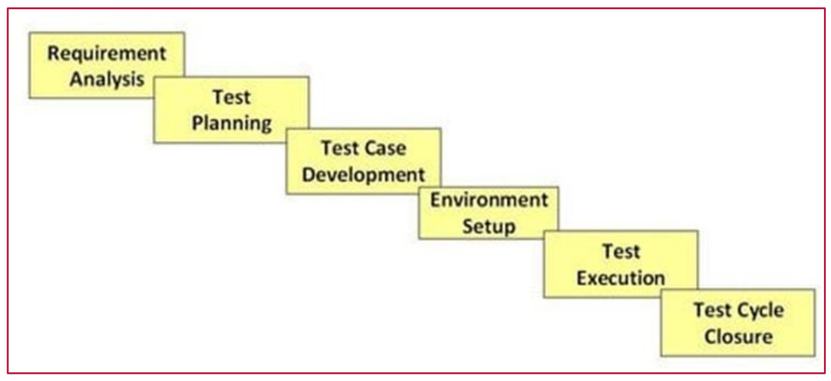
- Significant amount of time wasted by students and staff standing in long queues to order their food.
- Normally queue up for 20-30 minutes to order and get their food.
- Result in students only have few minutes left to eat their food.
- May also consider skip meals if efficiency is too low, which could negatively affect their health over time.

Objectives

- To develop a mobile-based canteen food ordering system that provides enhanced efficiency and convenience of the ordering process to TAR UMT students and staff.
- To develop a mobile-based canteen food ordering system using Dart.
- To develop a recommendation system and easily access for the mobile-based canteen food ordering system to enhance user experience and increase order personalization.

Construction and Testing

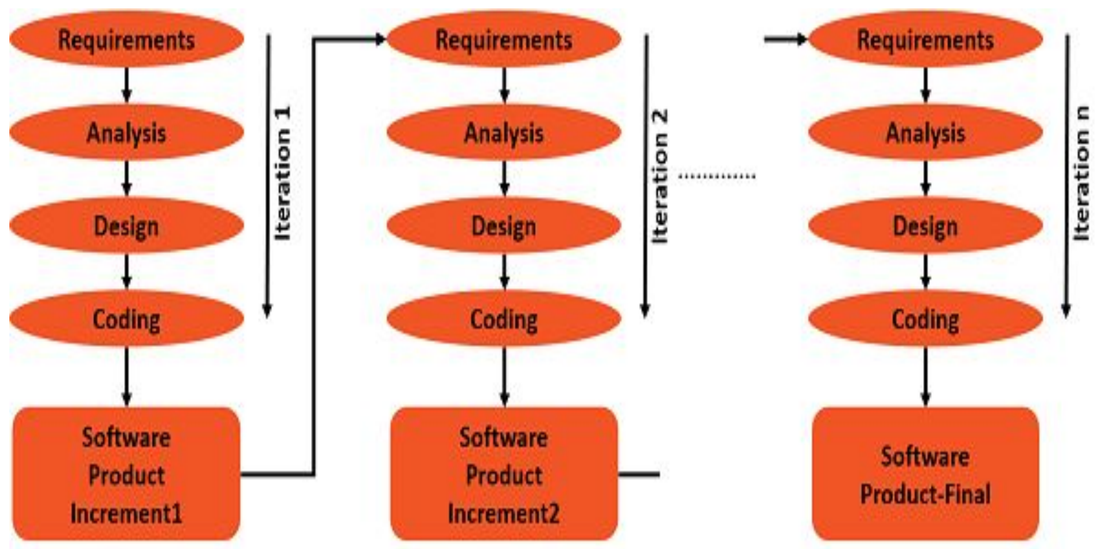
- Main feature: Menu display with detailed descriptions, customize orders, delivery service, multiple payment options and status tracking etc.
- Special feature(s): Seat booking, Recommendation system (Collaborative filtering)
- Programming Language used: Dart
- Database: MariaDB (hosted on Amazon RDS)
- Follow Software Testing Life Cycle (STLC) for performing system testing.



Contribution

- Efficiently handle a large volume of simultaneous orders.
- Enables canteen staff to proactively anticipate customer needs and prepare orders accordingly without worrying about inefficiency of queuing for each individual order.

Design and Methodology



1. In Initial phase of Requirements Gathering, foundational requirements for the canteen ordering system (JomMakan) are meticulously identified and iteratively refined to establish a comprehensive understanding of the project's scope.
2. First Increment Development, this phase is the strategic development of a rudimentary canteen ordering system, incorporating essential features such as user account management and an intuitive menu display.
3. Feedback and Evaluation, Iterative collection of user feedback guides a meticulous evaluation process, informing refinements to optimize the system's usability and align it more closely with user expectations.
4. Second Increment Development, Building upon the foundational system, this phase introduces advanced features, including order customization, as part of a strategic effort to enhance the overall functionality and user experience.
5. Testing, Rigorous testing is conducted both iterative and incremental to ensure the seamless functionality of individual system increments and their successful integration into the broader canteen ordering system.
6. Subsequent Incremental Development, Iterative development continues, introducing new features and refinements in subsequent increments, ensuring the continuous enhancement and evolution of the canteen ordering system.
7. Final System Integration, This phase is dedicated to the meticulous resolution of any integration challenges, ensuring a seamless amalgamation of all system increments into a cohesive and functional whole.
8. Deployment and Maintenance, With the system released, this phase involves iterative refinements based on user feedback, ongoing support, and strategic incremental updates to adapt to evolving requirements, marking the continuous improvement of the system throughout its lifecycle.

Conclusion

Achievements

- Successfully provide the necessary functions to allow students and staff to perform ordering process in the mobile application.
- Successfully implemented Flutter as the main framework for the project, enabling the ability to develop user interface using Dart.
- Successfully integrated the recommendation system into the application to provide personalised suggestions based on user's behaviour.