
RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCES

REMACS 5.0



CS240 - BACHELOR OF INFORMATION TECHNOLOGY [HONS.]
CS248 - BACHELOR OF SCIENCES [HONS.]
MANAGEMENT IN MATHEMATICS
CS251 - BACHELOR OF COMPUTER SCIENCE [HONS]
NETCENTRIC COMPUTING
CS255 - BACHELOR OF COMPUTER SCIENCE [HONS]
DATA COMMUNICATION & NETWORKING

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Universiti Teknologi MARA Perlis Branch

**Research Exhibition in Mathematics and Computer Sciences
(REMACS 5.0)**

Research Exhibition in Mathematics and Computer Sciences (REMACS 5.0)

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Editors

Rafiza Ruslan, Mohamad Najib Mohamad Fadzil, Noorfaizalfaird Mohd Nor, Mohammad Hafiz bin Ismail

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Preface

It is with great pleasure that we present this extended abstract book, titled "The 5th Research Exhibition in Mathematics and Computer Sciences (REMACS 5.0)". This book is a collection of research work in the fields of Computer Science and Mathematics, contributed by the final year students from Universiti Teknologi MARA, Perlis Branch. The aim of this book is to showcase the diversity and depth of research in these two interrelated fields.

Mathematics and Computer Science are two fields that have seen tremendous growth and advancement in recent years. With the rise of new technologies and the increasing demand for data-driven solutions, researchers in these fields have been working hard to develop new theories, algorithms, and models that can help solve some of the most pressing problems of our time. This book is a testament to their hard work and dedication.

The abstracts in this book cover a wide range of topics, including algebra, analysis, logic, computer architecture, algorithms, artificial intelligence, machine learning, computer network, netcentric computing and many more. The work presented here is both theoretical and practical, and has the potential to impact many areas of society, from finance and healthcare to education and security.

We hope that this book will serve as a valuable resource for future students in the fields of Mathematics and Computer Science. We also hope that it will inspire more students to pursue innovative and groundbreaking research in these two fields. Finally, we would like to express our gratitude to all the contributors for their hard work and dedication, without which this book would not have been possible.



RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCES
REMACS 5.0

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EVENT SCHEDULE

8:00 – 8:30 am

- Registration

8:00 am – 12:00 pm

- FYP Project Presentation

12:00 - 2:00pm

- Lunch Break

2:15 – 2:35 pm

- National & Wawasan Setia Anthems
- Doa Recitation

2:35 – 2:45 pm

- Welcoming Address by Director of REMACS 5.0

2:45 – 2:55 pm

- Officiating & Closing Remarks from Rector of UiTM Perlis

2:55 – 3:00 pm

- REMACS 5.0 Montage

3:00 – 4:00 pm

- Awarding of Winners:
 - Best Poster
 - Best Project Award

- Photo Session

- End of Ceremony

Dress Code: Formal / Corporate

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EXTENDED ABSTRACTS

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCES
REMACS 5.0

STAFF RESIDENT COLLEGE (SRK) REPORT MANAGEMENT SYSTEM USING FLUTTER

Muhammad 'Atif Abdul Rahim, Ahmad Yusri Dak

College of Computing, Informatics and Media, Universiti Teknologi MARA Perlis Branch, Malaysia

Abstract

This project's aim is to create a Staff Resident College Report Management System (SRK) for UiTM Arau, Perlis. The current management system at SRK uses google forms and WhatsApp to record information such as daily reports and case chronologies in case of emergencies. However, the systems and databases available for recording student activity outside office hours at UiTM are limited, resulting in insufficient storage capacity for data. The data is also poorly organized and difficult to track, record, and retrieve, making it time-consuming for SRK to report on student conditions before closing cases. The proposed SRK system aims to address these issues by providing a more efficient and organized method of recording and tracking student information. The system will include features such as daily report submissions, incident management, and past report retrieval. Usability and functionality testing will be conducted to evaluate the effectiveness of the system. The results of the tests will be analysed and discussed, and recommendations for future improvements will be made.

1. Introduction

This research aims to develop a Staff Resident College Management System (SRK) to improve data storage, organization and handling at UiTM Arau, Perlis. The current system used by SRK is through google forms and WhatsApp, which has limited storage capacity and is difficult to track and retrieve past reports. The scope of the project includes developing a system for recording daily reports, case chronologies, and student activity outside office hours. The system will also include a feature for SRK to periodically report on student conditions and easily track, record and retrieve past reports. The development process includes literature review, methodology, system design and development, testing and evaluation, and conclusion and recommendation.

2. Methodology

This project employed the Waterfall model for software development as its methodology. The system was designed and developed utilising PHP, MySQL, the flutter and Laravel frameworks, as well as additional applications. In addition, testing and debugging were performed to assure the system's functionality. The system's functioning and usability were then evaluated using questionnaires provided to respondents. In addition to analysing and discussing the data, limitations and suggestions for improvement were noted. This project's methodology was successful in developing a Staff Resident College Management System that addresses the concerns of inadequate storage capacity and poor data management at UiTM.

3. Results and Discussion

The Staff Resident College Report Management System is highly-liked by users and performs well in terms of functionality, as determined through testing and review. The majority of respondents deemed the system to be user-friendly and simple to operate, and their satisfaction with its performance was very high. Nonetheless, some issues and recommendations for improvement were also discovered during testing. Overall, the system is regarded as a great resource for managing student information at UiTM Arau, Perlis, and it may be utilised to improve the organisation and efficiency of the management of student activities outside of office hours. Additional research and development can be conducted to overcome the system's shortcomings and enhance its functionality.

4. Novelty of Research

Combining the Laravel and Flutter frameworks in the creation of a Staff Resident College Management System is fresh to this study (SRK). The suggested system utilises the capabilities of these frameworks to automate data collection and storage, as well as to provide a user-friendly interface for simple access and retrieval of information. The use of Laravel, a PHP web application framework, allows for the efficient management of databases and the implementation of various functionalities in the system (Soegato,2018). The use of Flutter, a mobile application development framework, enables the system to be accessed and used on mobile devices (Tashildar et al., 2020). By using the Laravel framework for the back-end and the Flutter framework for the front-end, the system is able to increase the Staff Resident College at UiTM Arau, Perlis' data management efficiency and precision. This research contributes to the current body of knowledge by illustrating the real-world implementation of these frameworks.

5. Conclusion

By constructing a management system utilising the Laravel and Flutter frameworks, this study sought to address the problem of inadequate storage capacity and poor data organisation at UiTM's Staff Resident College. The results of the functionality and usability tests revealed that the system was efficient and user-friendly, hence answering the problem statement. However, limits and future enhancement recommendations were also recognised and discussed. This system can improve the overall administration and organisation of student activity data at UiTM through its installation.

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