
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

2nd February 2023
Stor Complex, UiTM Perlis

Organized by:
College of Computing, Informatics and Media
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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e ISBN: 978-629-97934-0-3



Perpustakaan Negara Malaysia

Published by

MOHAMMAD HAFIZ BIN ISMAIL

Universiti Teknologi MARA

02600 Arau, Perlis

Tel: +604 988 2028

<https://fskmpерlis.uitm.edu.my/remacs50/>

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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

FASTBLOOD: BLOOD DONOR MOBILE APP INTEGRATED WITH QR CODE

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Abstract

Human blood is made up of plasma, cells, and red, white blood cells and platelets. Human blood groups are classified into four different groups. All four groups are A, B, AB, and O which are also classified according to the ABO system (Ngassaki-Yoka et al., 2018). FastBlood: Blood Donor Mobile App Integrated With QR Code is a mobile app-based solution that allows blood donors to be able to view donation-approved information in the form of digitalization. The existence of the FastBlood app not only facilitates registration and speeds up the process of when to donate blood as donors can fill in the form in the app only and show the QR Code at the blood donation site. Donors can view the blood donation records they have made, the location of donating blood and find out what blood donation events will be held around them. In addition, Blood donors can see how many times they donate their blood and there is also a countdown to blood donors that starts from 90 days from their deadline for blood donation. Thus, users and administrators of the blood donation division can save their time.

Keywords: Blood Donation, Mobile App, QR Code, Blood Donor, Donation Record

1. Introduction

This project's objective is to develop a mobile application that aids blood donation in the registration process, maintains blood donation record history, and simplifies blood giving for regular blood donation. But frequently during blood donation, blood donors encounter issues such as their red record book becoming damaged, yellowed, or misplaced; hence, the emergence of FastBlood: Blood Donor Integrated With QR Code. Additionally, using the User Approval Test, analyse the user acceptance of the FastBlood: Blood Donor Integrated With QR Code (UAT). In addition, the app may offer users with a ubiquitous platform for seeing blood donation-related information, such as tracing for blood donation, viewing blood donation, tracking dates for blood donation, and a countdown for subsequent blood donation. As an administrator, you may read the QR Code displayed when a user registers for blood donation. In addition, the administrator is responsible for providing the user with a record of blood donation.

2. Methodology

The Agile Methodist method was applied as early as the assembly requirement and analysis. This phase identifies the project's requirements and conducts a literature study of the publication. The design phase is followed by the creation of a sitemap that offers a clear perspective of the project's structure before the interface is sketched using MockupPlus. The development process includes coding the software with Kodular.IO to generate mobile applications and storing data in phpMyAdmin on a 00WebHost-hosted server. User Equality Test (UAT) was done and assessed on 40 participants. In the Testing phase, all information is documented using this method.

Results and Discussion

The limitation of the application is that it only stands on the 00Webhost and phpMyAdmin platforms, highly dependent on the Internet connection. Blood donors and potential blood donors will use this application when they want to do blood donation. There is also a suggestion from Dr Falah Wan (16

January 2023), he said the improvement in terms of the past record of a blood donor even if they first use this application and additional in the blood donation registration form section provide a place for blood donors and Dr to sign to ensure that the form is more validated and save. The results that can be concluded are very good as the application can help especially blood donors to get their blood donation information through this application and more easily, they do not have to carry a red record book when donating blood. In addition, the Transfusion Unit can maintain and manage users' blood donation records, update users' blood donation records and add places that can donate blood and blood donation programs through applications anywhere through their mobile phones.

3. Novelty of Research / Product

Through the FastBlood Mobile App: Blood Donors integrated with QR Codes, Administrators or Medical Staff easily do blood donor registration work. They just need to scan the QR Code proposed by the user and after squeezing the QR Code, then there will appear a digital version of the blood donation registration form. Due to the use of this application, the Resilience Unit in Malaysia was able to advance towards the form of digitization and, as a result, minimize the amount of paper used during the blood donation registration process. They will keep and update records of blood donations made to users. In the meantime, users can view a record of the blood donations they have donated through the record section of their donation. In addition, as well as the countdown until the next contribution. Users have access to a feature that allows them to see their blood donation location as well as the hours of business where the location is open for business. In addition, visitors can also research blood donation programs that can be accessed in Malaysia based on the state in which they are located.

4. Conclusion

FastBlood: Blood Donor Mobile App Integrated With QR Code makes it easier for donors to register and speeds up the process of when to donate blood. Blood donors can see the blood donation records they have done as well as find out who their next donation is for blood donation. All objectives of this project have been achieved.

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Research Exhibition in Mathematics and Computer Sciences: REMACS 5.0
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e ISBN 978-629-97934-0-3

