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RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCES

# REMACS 5.0

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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

**2<sup>nd</sup> February 2023**  
**Stor Complex, UiTM Perlis**

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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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# Preface

It is with great pleasure that we present this extended abstract book, titled "The 5<sup>th</sup> 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.



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**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

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RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCES  
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# DATA VISUALIZATION OF CHRONIC KIDNEY DISEASE SYMPTOMS

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## **Abstract**

Chronic kidney disease is one of the primary causes of mortality in society. Neglecting this disease will expose you to incredibly serious risks and consequences. The factors that contribute to the increment of the mortality are the lifestyle, lack of awareness among society and even among practitioner doctors. Chronic kidney disease can strike anyone, regardless of age or gender. What makes it different is the risk level of each factor. Due to that, an awareness campaign towards this disease must be taken seriously so that early diagnosis of this disease can be made to avoid harmful scenarios. Thus, an interactive dashboard called Dashney comes to the rescue, where the features included in this interactive dashboard are charts visualization and a self-service analytic model. To complete the dashboard, System Development Life Cycle (SDLC) methodology is used which focus on the public user needs. Finally, the finding shows that Dashney is a well-accepted dashboard as it provides the information about symptoms of chronic kidney disease which can help users to get educated about chronic kidney disease and its risk. By knowing this knowledge, people will be aware of their own health and take a precautious step to prevent the disease.

*Keywords: dashboard, chronic kidney disease, symptoms*

## **1. Introduction**

The Chronic Kidney Disease (CKD) affects around one out of every ten persons worldwide, resulting in millions of early deaths. The project aim is to visualise symptoms of chronic kidney disease using dashboard to ease medical institution, doctors, and patients in term of analysing symptoms. It also helps reduce the risk of a patient diagnosed with CKD.

## **2. Methods, Procedures, Process**

The methodology that was used here is System Development Life Cycle (SDLC). For this project, there are 4 procedures in total to develop the dashboard for this project. It is preliminary study, analysis, development, and testing. The testing phase has been done and complete. The activity that has been done in the testing phase is the usability test with the System Usability Scale (SUS) tool. The testing phase is being done by few respondents that helps in verifying the quality, and performance of the dashboard. To put it simply, chapter 3 was all the flow of dashboard development using SDLC.

## **3. Results and Discussion**

Concisely, the objective of the dashboard has been met as all the functionality is working well. The dashboard was carefully developed according to all the data requirement gathered throughout the whole year. Many people can be benefited and educated from this system. Civilians can learn more and increase their awareness regarding the chronic kidney disease Dashney. They can identify the risk factors that contributes to kidney disease well better and learn more about it. Besides, medical expertise also can use the dashboard on their patients. Therefore, precautions can be taken seriously, and early detection also can be made where it may help to lower the risk of mortality with chronic kidney disease.

#### 4. Novelty of Research / Product

There have been a number of research that have developed dashboards that have related attributes to chronic kidney disease particularly OptiMissP that provides additional insight to the structure of the data and their missingness in chronic kidney disease (Geifman et al., 2021). Previous research about (Swee et al., 2020) was done through utilization of the telenephrology dashboard system improved early detection and identification of kidney disease and saved time and costs for Veterans in travel.

#### 5. Conclusion

The existence of this dashboard, is due to the mortality numbers and because of kidney disease and the awareness of public regarding this disease. By developing Dashney, it is hoped that it can help in raising the awareness about this disease to more people especially for those that have no idea what causes the kidney disease and how to control the risk. The successful of this project is defined based on the achievements of all the objectives have been met.

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