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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  
**REMACS 5.0**

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# DASHBOARD: DATA VISUALIZATION OF COVID-19 CONFIRMED AND DEATHS IN MALAYSIA (COVIM)

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## Abstract

COVID-19 has spread widely in worldwide and Malaysia one of the countries affected. Therefore, there are many people who want to know about the total number of COVID-19 cases that occur in their country. Even though the Malaysia government already provided the website of COVID-19 but there is only one visualization that display on the website. Thus, a real-time COVIM dashboard has been designed and developed a user-friendly tool with variety type of data visualization to better grasp the status of COVID-19 in Malaysia. COVIM dashboard was aimed to be used by researchers, healthcare workers and general public. Therefore, this study proposes to use a Microsoft Power BI as a tool to develop a dashboard system. Furthermore, the method that will be used in developing dashboard system is Waterfall Model. The resulted COVIM dashboard provides important insights that can be used to make informed decisions concerning the spread of COVID-19 in Malaysia.

*Keywords: COVID-19, Malaysia, COVIM dashboard, real-time, Microsoft Power BI*

## 1. Introduction

This project refers on how to resolve the issue encountered by the user which is they need to spend more time to read the data COVID-19 manually in the text form. Therefore, this study developed a Dashboard: COVID-19 Confirmed and Deaths in Malaysia or named as a COVIM dashboard to solve the problem that encountered. The objective of this project is (1) To identify suitable visualization method of COVID-19 Confirmed and Deaths in Malaysia, (2) To develop a dashboard visualization of COVID-19 Confirmed and Deaths in Malaysia using Microsoft Power BI, and (3) To evaluate the data visualization of COVID-19 Confirmed and Deaths in Malaysia using User Acceptance Test (UAT). Furthermore, the scope of this study will focus on researchers, health care workers and the public as respondents in this study. And the data of COVID-19 will obtain from public data GitHub MoH-Malaysia where it is a real-time data that is updated daily based on COVID-19 cases in Malaysia.

## 2. Methodology

This study was implemented using a waterfall method. Waterfall model is the method which phases of the activity are defined based on the thought processes required to conduct the activities (Conger, 2011). There are five phases of methodology in this study: (1) requirement gathering phase, (2) design phase using Balsamiq Wireframes as a prototype software, (3) transformed and clean data phase, (4) build phase using Microsoft Power BI and (5) testing phase using User Acceptance Test (UAT). The project methodology also describes the approach and methods which will be used to deliver the proposed project as well as the deliverables of each phase and how they will be achieved.

## 3. Results and Discussion

Through this project, there are six types of visualization that used in COVIM dashboard which are (1) Cards visualization, (2) Bubble map, (3) Funnel chart, (4) Area chart, (5) Donut chart, and (6) Table visualization. While, based on the evaluation testing through User Acceptance Test (UAT), about 90% of the respondents are clear and understandable with COVIM dashboard. Moreover, about 95% of the respondents, they are satisfied with a COVIM dashboard and intent to use it again in the future. At the same time, they would like to recommend this COVIM dashboard to their family and friends.

#### **4. Novelty of Research / Product**

The uniqueness of COVIM dashboard is a real-time dashboard that update daily cases of COVID-19 in Malaysia based on Ministry of Health Malaysia's data. Moreover, there are many types of visualization that display different information of COVID-19 in Malaysia such as there are bubble map, funnel chart, area chart, donut chart, card visualization and table visualization. Furthermore, COVIM dashboard has a clean and modern interface that better grasp the status of COVID-19 in Malaysia, therefore, COVIM dashboard was provided dark mode and light mode version of the dashboard that users can choose.

#### **5. Conclusion**

To conclude, this COVIM dashboard it could help more effectively to people to view the real-time data COVID-19 confirmed cases and deaths cases in Malaysia. Moreover, by using COVIM dashboard, it can be able to predict the future situation of COVID-19 cases in Malaysia that could happen in future. Finally, we can consider that COVIM dashboard can be used in an emergency or in the future.

#### **REFERENCE**

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