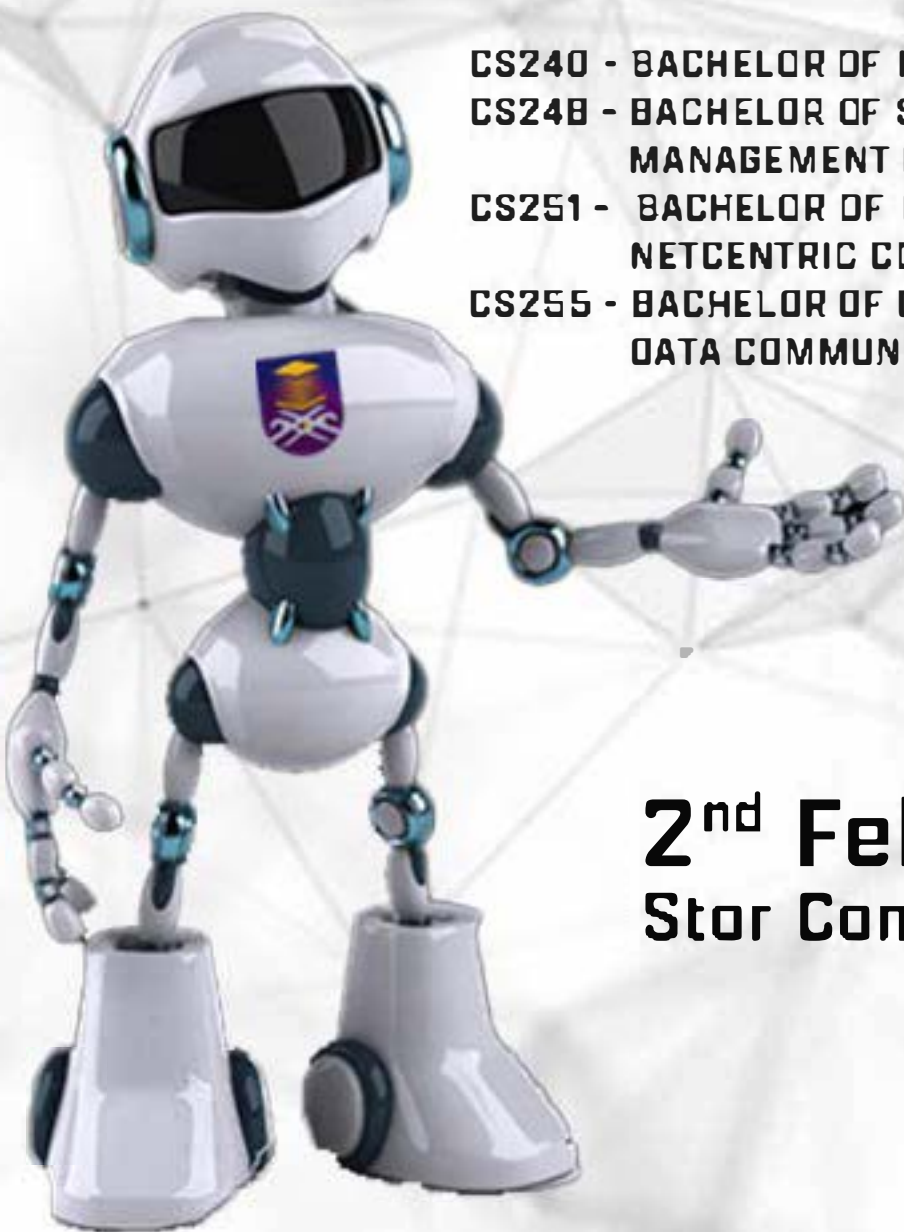

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCES

REMACS 5.0



CS240 - BACHELOR OF INFORMATION TECHNOLOGY [HONS.]
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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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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.



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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

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCES
REMACS 5.0

DATA VISUALIZATION OF HIGHER EDUCATION STUDENTS' PERFORMANCE EVALUATION

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Abstract

Data Visualization of Higher Education Students' Performance Evaluation will visualize the interactive dashboard such as the analytical dashboard that containing data from dataset that had been gathered from UCI Machine Learning Repository. In general, this dashboard is developed for the easier use for the university's administrator, decision makers and lecturer especially in making decision about the higher education students' performance after the evaluation has been done. With the existence of the dashboard, it will reduce the time for the decision makers throughout the process of decision making. Besides, the dashboard visualization is develop using Software Development Methodology. Thus, this dashboard visualization will assist the stakeholders in order to making decision better and effective.

Keywords: higher education, performance, dashboard, university, decision-makers

1. Introduction

Data Visualization of Higher Education Students' Performance Evaluation is a analytical dashboard that visualize the dataset that have been obtained. The objectives of this development of dashboard visualization are firstly to extract the dataset of the higher education students' performance evaluation. Next, to visualize the dataset using data visualization techniques by designing a dashboard with the various forms of charts and lastly, to evaluate the dashboard usability by how it performs in visualizing the data. The dashboard is useful for university's administration, lecturers, students and also decision makers related to higher education for keep track of their students' performance from time to time so that they can plan ways on how to keep improving their students' performance.

2. Methodology

The research design will be conducted via an online survey by using the Google Forms to distribute the questionnaire about the questions related to the higher education students and the functionality of the dashboard visualization for the users. Before the participants answer the questionnaire, they will give some time to explore the dashboard visualization to understand how it works. The participants who related to higher education from the age group of 18 to 65 are the individuals that are required to answer this questionnaire. The participants will be explained first about the instructions and objectives of this research on how to answer this questionnaire. Only 15 minutes required for the participants to answer this survey. Participants need to read the consent and agree with it first and all of the information provided will be kept confidential and for the research purpose only. The questionnaire consists of three parts which are Part A is respondent's demographic data, Part B about the main questionnaire and Part C about the recommendation for future improvement. The distribution of the questionnaire will start in January 2023 until February 2023. The format of the questionnaire is referred from the Post-Study System Usability Questionnaire (PSSUQ). PSSUQ is frequently used for measuring the user's perceptions of how satisfied they are with a website, product or system at the conclusion of a research (UIUX Trend, 2023).

3. Results and Discussion

Based on the usability test that have been done, there are 72.7% respondents has the experiences in using the analytical dashboard while 27.3% respondents have no experiences about the analytical dashboard. Besides, 72.7% respondents agreed if this dashboard visualization will help the university's administration, decision makers related to higher education and lecturers to monitor and making decision about the students' performance and 27.3% respondents think maybe the dashboard visualization will helps the stakeholders while there are no responses for respondents who thinks this dashboard will not helps the stakeholders. In addition, 54.5% respondents strongly agreed that the dashboard visualization is easy for them to find the information that they need meanwhile only 45.5% of the respondents only agreed with the statements. Therefore, the development of this dashboard will give many beneficial to the stakeholders.

4. Novelty of Research / Product

This data visualization for the higher education students' performance evaluation is beneficial for many parties. The evaluation results can be visualized in the dashboard. From the dashboard, it will display the outputs for the students' performance whether they are performed or otherwise based on the evaluation from the three main indicators; personal background, education patterns and students' performances. Usually, evaluation results from the dataset can be easily understood if it is visualized using data visualization. This is because the end-users can identify the trends of the dataset that will be represented in many ways. The attributes used in the dataset can be seen clearly in the data visualization so users can have the better insight for the dataset.

5. Conclusion

With the existence of the Data Visualization of Higher Education Students' Performance Evaluation, it can be concluded that the dashboard will helps the university in monitoring and keep tracks on the students' performances. Lastly, the teaching and learning method in higher education will be improved from time to time based on the students' performance.

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