

**TECHNOLOGY AND INFORMATION SYSTEM (TIS)**  
**ASSIGNMENT 1**

**Report on Visit to NALI 2023**



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## **INTRODUCTION**

**NALI 2023 was held at UTM Johor Bahru at Dewan Sultan Iskandar on 6th till 8th of November 2023 . NALI stands for New Academia Learning Innovation. NALI is a knowledge sharing event. Many innovative ideas for teaching and learning were presented during NALI. Lots of students and researchers showcase their ideas through posters, videos, and presentations during the NALI event. There were many ideas shared during the NALI event to make teaching and learning methods more easier and fun. There were about 89 booths that opened during the event.**



## Chosen Posters for Interview

### **Poster 1 :**



### **The Development of E-Bike Tracking System for Bike Sharing in Promoting Transport Resilience**

This is an application developed to help students to track E-Bike that is available around UTM Campus. This application helps students to track E-Bike near them so that they can use it to travel to their faculty . With the help of this application students will be able to use the E-Bike available around their campus rather than walking to their faculty. With the help of this application students will be able to go to their class conveniently and at the same time contribute to a greener campus environment. E- Bike has zero emissions and is eco-friendly. Riding E-Bike also promotes a healthy lifestyle for the students.

**Hardware used:** Computer, Android Smartphone, Linkit One, and Battery Polymer Li-ion.

**Software used:** Operating System (OS), Pubnub Publish, Android Development Tool Kit, Google Maps API, Arduino IDE, MySQL.

#### **How this application works:**

Each E-Bike will be embedded with a location tracking system.The location tracking system has an embedded positioning system consisting of a GPS receiver, GSM modem and microcontroller.The GPS satellites will send real-time latitude and longitude data to the GPS receiver. Then the microcontroller processes this information and sends it to the GSM modem. Later, the GSM modem will update the end users' application with the location of the E-Bike on the application's map.

## Poster 2 :



### The Tazkeerah and Motivations Dispenser

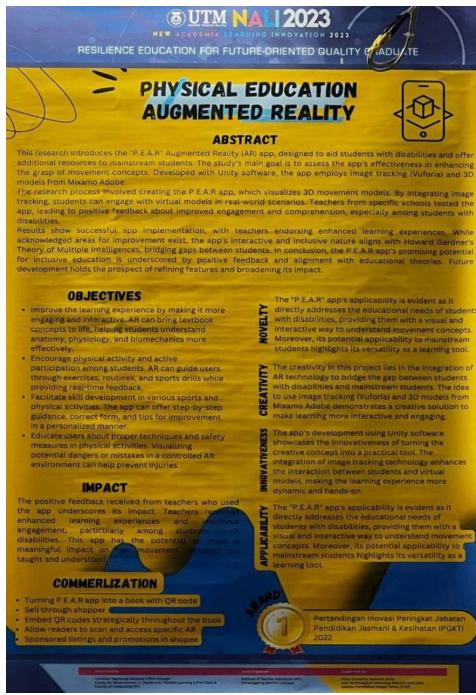
Let me introduce you to the Tazkeerah and Motivations Dispenser, a cutting-edge project designed to improve student resilience and engagement in classroom environments. This idea addresses the demand for documented quotes to inspire instructors in response to a 2021 poll of 100 Faculty of Science UTM students, which revealed an 86% consensus on the significance of spiritual, motivational, and personal experience sharing from lecturers. The dispenser functions as a guide, providing lecturers with a carefully selected selection of inspirational quotes, as indicated by the 91% of respondents who stated that they preferred motivational sessions prior to lectures. The dispenser creates a good and uplifting environment in the classroom by gathering, recording, and distributing these motivational nuggets. This allows teachers and students to build meaningful relationships throughout class.

**Software used :** Google Forms

#### How this application works :

The lecturer will create a dispenser using Google Forms, this will help engage lecturer and students to create a good and uplifting teaching environment. Students can input Motivational and Tazkeerah into the forms, and the lecturer can choose the motivational or using the tazkeerah to help build relationships with their students.

## Poster 3 :



## Physical Education Augmented Reality

The Physical Education Augmented Reality app was crafted to support students with disabilities and provide supplementary materials for mainstream students. Its primary aim is to evaluate how effectively the app enhances the understanding of movement concepts. This app aims to elevate the learning experience by increasing engagement and interactivity. By harnessing Augmented Reality (AR), this app animates textbook concepts, aiding students in comprehending anatomy, physiology, and biomechanics more profoundly. Moreover, it promotes physical movement and encourages active involvement among students. Through AR, users are guided through exercises, routines, and sports drills, receiving instant feedback as they engage in real-time activities.

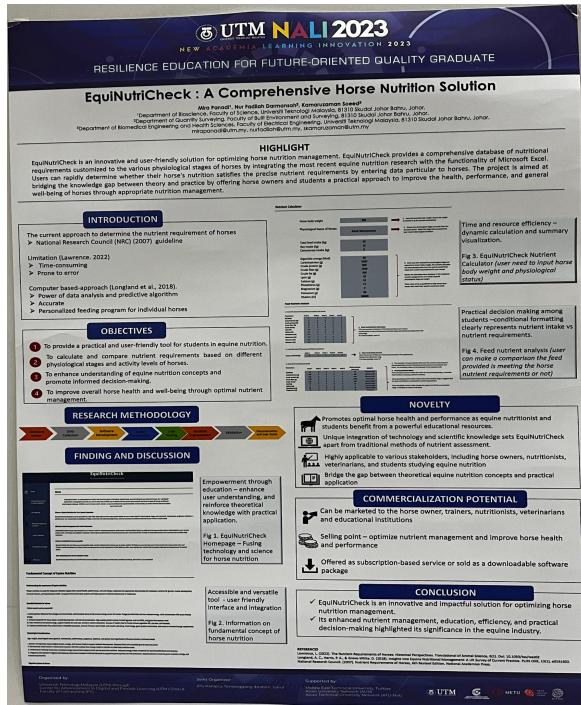
**Hardware used :** Smartphone

**Software used :** "P.E.A.R" Augmented Reality App

**How the application works :**

This app employs image tracking (Vuforia) and 3D models from Mixamo Adobe, which visualizes 3D movement models. It works by integrating image tracking, so students can engage with virtual models in real-world scenarios. The app can offer step-by-step guidance, correct form, and tips for improvement in a personalized manner. Educate users about proper techniques and safety measures in physical activities. Visualizing potential dangers or mistakes in a controlled AR environment can help prevent injuries.

## Poster 4 :



## EquiNutriCheck: A Comprehensive Horse Nutrition Solution

EquiNutriCheck was developed to assist students that enrolled in animal nutrition courses. It fills the gap between theoretical understanding and real-world application. Students no longer need to manually calculate the nutrition for horses thanks to this application. Users can input specific horse data to quickly assess whether their horse's nutrition meets precise nutrient requirements or not. The application features an intuitive UI that makes it simple for students to use and navigate. To sum up, EquiNutriCheck is an innovative and impactful solution for optimizing horse nutrition management.

**Software used:** Microsoft Excel

### How the application works:

On the nutrient requirement tab, the user needs to input the bodyweight and psychological status of their horses and the system will automatically calculate the total feed intake of the horses including the hay intake and concentrate intake. On the calorie calculator tab, the user can determine the calorie required by their horses according to the selected activity level and bodyweight of the horses. The last one is the feed nutrient analysis tab. This tab will help the users to determine whether the amount of feed provided to the horses is sufficient or not.

## Poster 5 :

**Direct Entry Management System (DEMS)**

**DEMS**

DEMS is a web-based application allowing students and coordinators to run the credit exemption process more efficiently. DEMS will only focus on Faculty Computing and students from "Perdana". DEMS built by using:

- React library
- Laravel
- MySQL
- Agile Development Methodology

**OBJECTIVES**

- To design and develop a system that allows the coordinator to manage the student's study plan easily, students can review their study plan, and the academic office can access the CI, transcript, and MUET PDF file more quickly.
- To enhance the process for producing an efficient Direct Entry Management System in UTM
- To Improve the quality of direct entry management in UTM

**ABSTRACT**

Students applying to UTM have various methods, including the Direct Entry channel, the channel allows students to reduce their study duration by getting credit exemptions. Managing their study plans is crucial for timely graduation, but currently, this process is manual and challenging, especially for Direct Entry students with unique credit exemptions. The proposed solution is the Direct Entry Management System (DEMS), a web-based application designed to streamline the credit assumption process efficiently. DEMS focuses on the Faculty of Computing and students from "Perdana". It uses the React library for the front-end, Laravel for the backend, MySQL for the database. It follows Agile Development Methodology and allows students to update their diploma medals and submit necessary documents easily. DEMS also provides a Frequently Asked Questions (FAQ) section for student guidance, ensuring a smooth credit exemption process.

**NOVELTY**

The proposed Direct Entry Management System (DEMS) introduces a novel approach to streamline and automate the credit exemption process for students entering UTM. The use of web-based technology, the Laravel framework, and React Library for front-end development represents a departure from the manual processes traditionally employed.

**CREATIVITY**

The creative lies in the use of technology to address a longstanding issue. DEMS creatively leverages web-based tools and databases to simplify complex credit exemption management, enabling students to graduate on time. It also offers a Frequently Asked Questions (FAQ) panel for added user support.

**INNOVATIVENESS**

DEMS innovates by integrating various components like student record management, document submission, and credit calculation into a unified digital platform. The incorporation of Agile Development Methodology further emphasizes its innovativeness by ensuring flexibility and adaptability throughout the development process.

**APPLICABILITY**

DEMS directly addresses the challenge faced by Direct Entry students at UTM by providing a tailored solution. It streamlines the credit exemption process, making it highly applicable to this specific group of students, allowing them to efficiently manage their study plans and documents.

**IMPACT**

The impact of DEMS is twofold. Firstly, it significantly improves the efficiency of the credit assumption process, reducing the administrative burden on Direct Entry Coordinators and Academic Office staff. Secondly, it enhances the experience of Direct Entry students, helping

## Direct Entry Management Systems (DEMS)

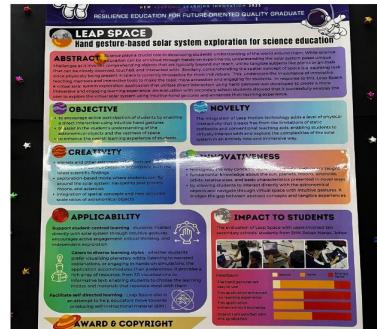
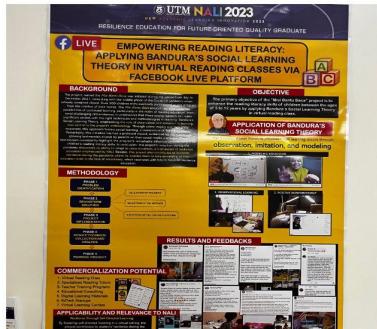
Students who have completed their diploma or polytechnic credential use direct entry management systems. Only local students are eligible to use the direct entry management system. This makes it easier for students to transfer their diploma or polytechnic credits to universities. Students that use the direct entry management system benefit from being able to skip the first year of university and enter their second year instead. This system focuses more on credit assumption and managing to transfer the credits. This system is not for international students.

**Software used :** Microsoft Office and google form

### How the application works :

After applying for a direct entry management system, the coordinator manages the credit transfer. This system helps to assume the credit hour. If a student scored an A in any subjects in their diploma or polytechnic then this credit is transferred related to the course.

## IMAGES AND INTERVIEW VIDEO LINK

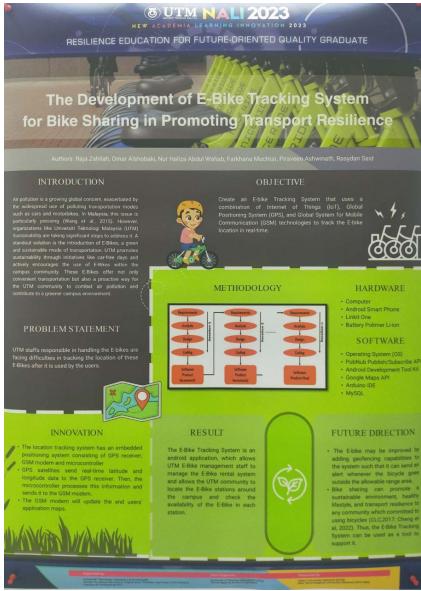


**Video Link :**

[https://youtu.be/TatU454LCfg?si=GKsfA4lnlt4P\\_Jqg](https://youtu.be/TatU454LCfg?si=GKsfA4lnlt4P_Jqg)

# **REFLECTION**

## Poster 1



**Thayaallan Naidu :** Overall the poster is compact and filled with useful information regarding the application. I think this application will be useful for the students and the UTU staff in terms of providing alternative transportation that is eco-friendly with much convenient service.

**Fathan :** The poster stated clearly the point that it's trying to show by dividing these into small paragraphs. The project will really help UTU students to have a more healthy life by promoting E-bike usage.

**Daffa :** The poster shows us everything that we need to know in a simple yet appealing visual. From the introduction until the result everything is well defined. This can be a game changer for UTU students as it can encourage a healthy life-style as well as increase student mobility.

**Avishek :** This poster is eye-catching because it encourages the audience to practice environmental responsibility and reduce pollution. It is a creative and environmentally friendly way for students to use these kinds of bikes.

**Harith :** The poster makes it really easy to understand the application. In my opinion, the application is really impactful for UTU students because it enhances campus mobility while offering students convenient and eco-friendly transportation.

## Poster 2



**Thayaallan Naidu :** The poster is very vibrant and informative which includes pictures and data. I think the idea implemented here is beneficial for the students. It is because delivering motivation and positive quotes before class starts sets a good vibe for learning.

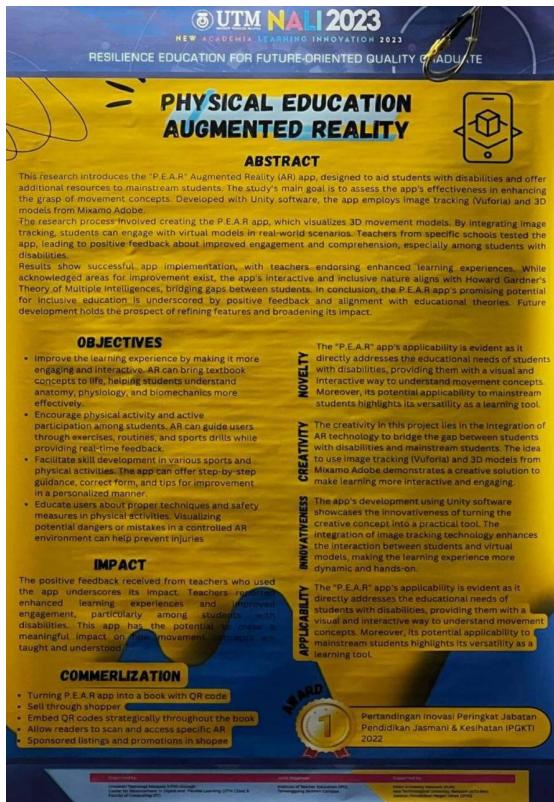
**Fathan :** The poster shows factual data to backup the good reason behind the project. The poster also aims to bring a healthier class environment by letting the lecturer know more about their students.

**Daffa :** The poster has a few images and not too many words which can actually be beneficial in getting student attention. And the implementation of this idea will go well with university life , which has a quite high stress level. So each aspect of our life can remain at a balanced level.

**Avishek :** The primary message of this poster is conveyed in its title which is clear, concise, and graphically engaging. In my opinion graphical representation is more efficient than describing by paragraphs as it is easy for viewers to understand.

**Harith :** A good poster as it gives you the statistics and the pictures of the product. I think this is a very good idea because students will be more motivated to start learning even before the class starts.

## Poster 3



**Thayaallan Naidu :** The poster consists of a lot of information. In my opinion I think this application is beneficial as it makes learning more engaging and interactive . It also will make learning much for fun and easier for disabled students .

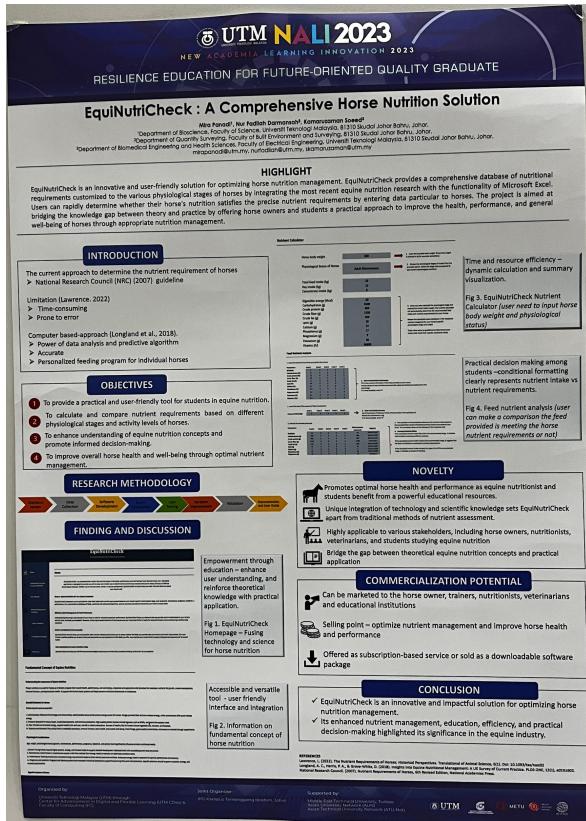
**Fathan :** This poster may be a bit difficult to read if somebody has dyslexia, because of how many words are packed closely to each other. But still they have a lot of information to help the reader understand the project. The project itself P.E.A.R app will definitely help the disabled in learning and studying.

**Daffa :** The poster contains all important points of the system, starting from the introduction, Objective, and also How the system works. But visually it is not interesting because it is packed with too many words. The app itself has a good approach to implement a strong technological aspect in our education system.

**Avishek :** There is no graphical representation of information which would be easy for readers to understand and grasp the main concept. In my opinion it is not interesting as this poster is so detailed with a lot of information.

**Harith :** The poster is quite packed with information but it is still readable. This application will help a lot of disabled students as it changes the environment and the way of learning completely.

## Poster 4



**Thayaallan Naidu :** The poster is very interesting and eye-catching . All the information are nicely separated making it easier for us to understand the content . The poster also contains lots of informative data and research . The idea implemented will really help students who are taking Bachelor of Science in Equine Management.

**Fathan :** The poster is easy to read with a proper color separation for each element of the poster. The poster consists of all the necessary information needed. The project will help users with the practical and user-friendly tool to ease the process of finding the nutrient.

**Daffa :** The poster has all the information needed , and EquiNutriCheck will be a great help especially for those working in that field. because it has so many features which are helpful and also time efficient.

**Avishek :** There are many different graphical representations on this poster. These diagrams and charts, in my opinion, do a great job of clearly illustrating the main ideas. Readers are able to focus on applying the EquiNutriCheck concept.

**Harith :** The poster tells us all we need to know about the application. I think this tool will be very beneficial for students because it saves us a lot of time by doing all the work automatically.

## Poster 5

The poster is titled "Direct Entry Management System (DEMS)" and is divided into several sections:

- DEMS:** Describes DEMS as a web-based application for students and coordinators to run the credit exemption process more efficiently. It focuses on Faculty Computing and students from "Perdana". It is built using React library, Laravel, MySQL, and Agile Development Methodology.
- ABSTRACT:** Explains that students applying to UTM have various methods, including the Direct Entry channel. This channel allows students to reduce their study duration by getting credit exemptions. Managing their study plans is crucial for timely graduation, but currently, this process is manual and challenging, especially for direct entry students with unique credit exemptions. The proposed solution is the Direct Entry Management System (DEMS), a web-based application designed to streamline the credit exemption process efficiently. DEMS will be built by the Faculty of Computing and Perdana students, and will use the Laravel framework for the backend, React Library for the frontend, and MySQL for the database. It follows Agile Development Methodology and allows students to update their diploma results and submit necessary documents easily. DEMS also provides a Frequently Asked Questions (FAQ) section for student guidance, ensuring a smooth credit exemption process.
- NOVELTY:** States that the proposed Direct Entry Management System (DEMS) introduces a novel approach to streamline and automate the credit exemption process for students entering UTM. The use of web-based technology, the Laravel framework, and React Library for front-end development represents a departure from the manual processes traditionally employed.
- OBJECTIVES:** Lists objectives including: To design and develop a system that allows the coordinator to manage the student's study plan easily, students can review their study plan, and the academic office can access the CI, transcript and MUET PDF file more quickly; To enhance the process for producing an efficient Direct Entry Management System in UTM; and To improve the quality of direct entry management in UTM.
- CREATIVITY:** Notes that DEMS creatively leverages web-based tools and databases to simplify complex credit exemption management, enabling students to graduate on time. It also offers a Frequently Asked Questions (FAQ) panel for added user support.
- INNOVATIVENESS:** States that DEMS innovates by integrating various components like student record management, document submission, and credit calculation into a unified digital platform. The incorporation of Agile Development Methodology further emphasizes its innovativeness by ensuring flexibility and adaptability throughout the development process.
- APPLICABILITY:** States that DEMS directly addresses the challenge faced by Direct Entry students at UTM by providing a tailored solution. It streamlines the credit exemption process, making it highly applicable to this specific group of students, allowing them to efficiently manage their study plans and documents.
- IMPACT:** States that DEMS has two levels of benefit. Firstly, it significantly improves the efficiency of the credit exemption process, reducing the administrative burden on Direct Entry Coordinators and Academic Office staff. Secondly, it enhances the experience of Direct Entry students, helping them to easily manage their study plans and documents.

**Thayaallan Naidu :** The poster is really interesting as it contains graphical information that are attractive and informative. All the key points are nicely highlighted throughout the poster. The application helps both UTM staffs and students to ease the process of direct entry applications into the university.

**Fathan :** The poster is easy to read, with big fonts for all the heading. This poster also contains the necessary information about DEMS. DEMS itself aims to improve the quality, enhance the process, and overall helps UTM students and staffs.

**Daffa :** The poster is simple yet informative , DEMS is a good system for those who get into UTM through direct entry because it can help students with their study plan and make everything easier and less complicated.

**Avishek :** Creating this poster required careful consideration and involved both graphically and compellingly communicating information, making it more than just a creative endeavor. Other important factors to consider were images and colour design. It provides information on the advantages of the programme and is easily readable.

**Harith :** The poster is minimalistic but very informative. I see that DEMS will help a ton of UTM students and staff in the future because it makes the process of direct entry much smoother.

## **CONCLUSION**

**By visiting the NALI 2023 event we get to learn a lot about innovation in Information and Communication Technology (ICT) for teaching and learning. The visit to the NALI 2023 event was exciting as we got to meet new friends and UTM researchers who presented their innovation ideas during the NALI 2023 event. Throughout the event, we also learn in-depth information about the examples of hardware and software used to develop a particular application, the advantages of the ideas presented in creating a better environment for teaching and learning process for future students, as well as the challenges they encountered in putting the idea into practice. The interview sessions with the participants were also beneficial to us as we got to learn in-depth about their innovative ideas and at the same time boost our confidence level. In conclusion, we think the visit to the NALI 2023 event is beneficial as it provides knowledge related to our TIS course where we learn about Software, Hardware and, the Information Systems and Methodology.**

## **REFERENCES**

- 1. NALI 2023 Website**
- 2. NALI 2023 Facebook Page**