



Department of Information & Communication Technology
Faculty of Technology
University of Ruhuna

Human Computer Interaction (ICT3152)

TecMIS Interface Redesign - Report

Group 01

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Introduction

The system which we are proposing a redesign is the Management Information System for the Faculty of Technology, University of Ruhuna. We are proposing new interface designs for the pages which are visible to Students of the discussed system. Then new interface designs are based on Human Computer Interaction principles and all the interfaces are restructured to match with modern web design techniques.

Current System and its Design Drawbacks

The design drawbacks which we have identified can be categorized under two main categories.

- 1) System-wide Design Drawbacks
- 2) Per page Design Drawbacks

In this report, we are going to discuss and propose solutions for those drawbacks.

System-wide Design Drawbacks

These drawbacks are common for all existing interfaces, and they can be seen in every interface. Let's take them one by one.

1. Not responsive

All the web interfaces are not responsive. They do not change the size and spread through the screen according to the screen size. It gives very bad impression for the user. In addition to that, the user have to zoom in if the screen size is too wide or too small.

2. Inappropriate Background Color and Image

The current system uses an image background for the system, and it is too dark. Because of the dark color, the text is not visible to users, and it's hard to read the text when they are over the darker parts of the background image.

3. Serif Font Family is Used

For the web pages and interfaces, Serif fonts are not generally used because of their less readability. Sans-Serif fonts are much more readable and attractive in modern monitors.

4. Font Size is too Small

The overall system has smaller fonts, and they are less human-readable.

5. Smaller Components

Components like Dropdowns, buttons, links are too small and very hard to reach for the user. And also the components are too close to each other. It's very prone to click on wrong components accidentally.

System-wide Design Solutions

1. Restructured Screen Size

Overall design is reconstructed to match the modern wide screens, and all components are redesigned to support touch interfaces and small devices. Optimized page size for touch interfaces like tablets.

2. Fine-Tuned Theme Colors

Avoided theme colors which are hard to human eyes and fine-tuned and replaced current theme colors with similar and better colors.

3. Sans-Serif Fonts Used

Removed old looking serif fonts and added Poppins font style as the main font style. It's a Sans-Serif font and widely used in modern interface designs.

4. Optimized Font Size

Used different sized fonts for different contexts while keeping consistency of the interfaces.

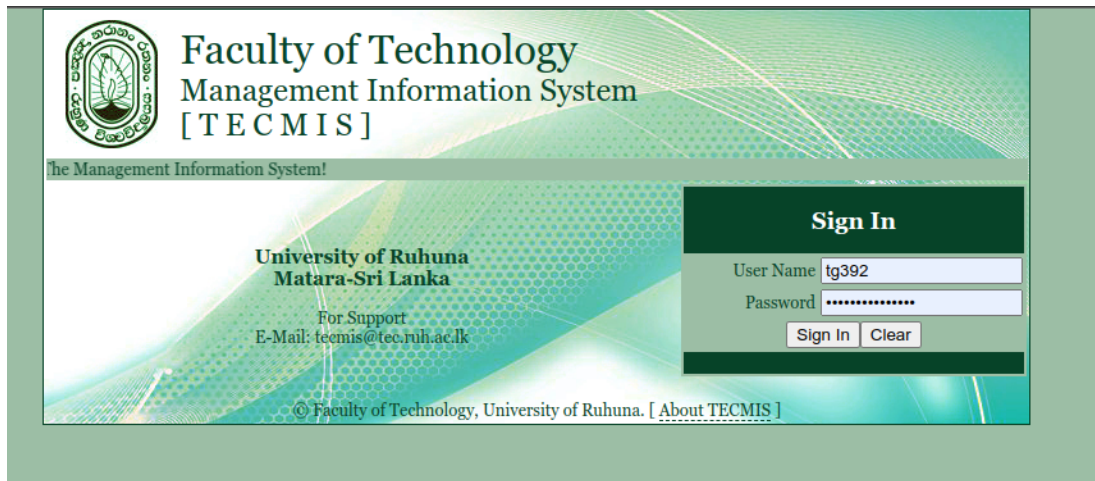
5. Components Resized

All the clickable components are resized and optimized for modern systems, and all components are designed to match the human finger size to support touch inputs while avoiding clicking on wrong components.

Per page Design Drawbacks and Redesigns

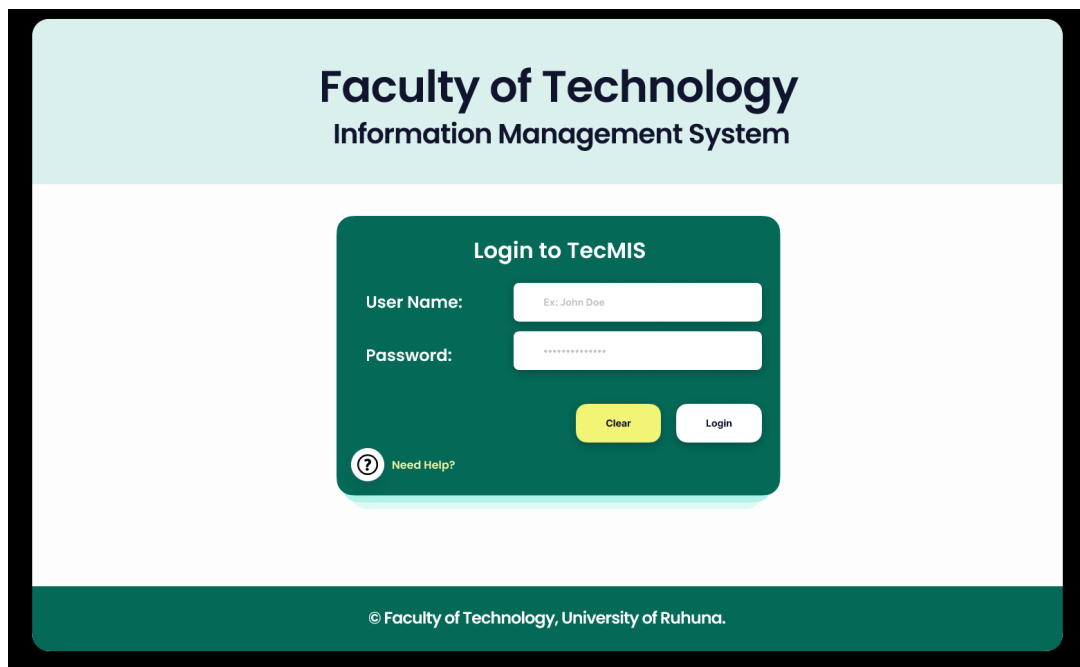
Login page

Old Design



- Sign in and clear buttons are same
- All other system-wide design faults are present.

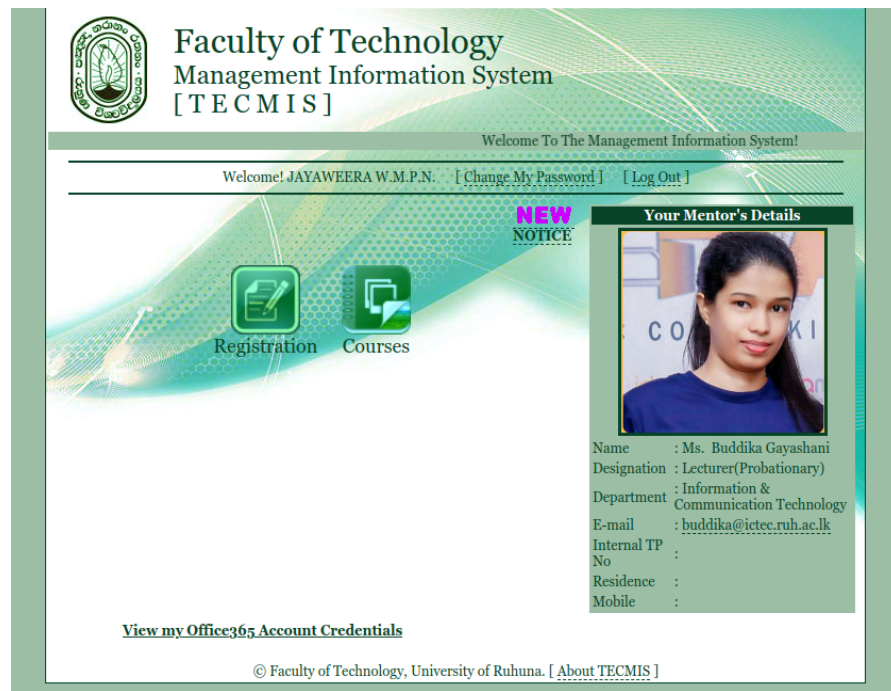
New design



- Added responsive user feedback for buttons and inputs.
- Removed unwanted elements.
- Clear button recolored to show the different at a glance.

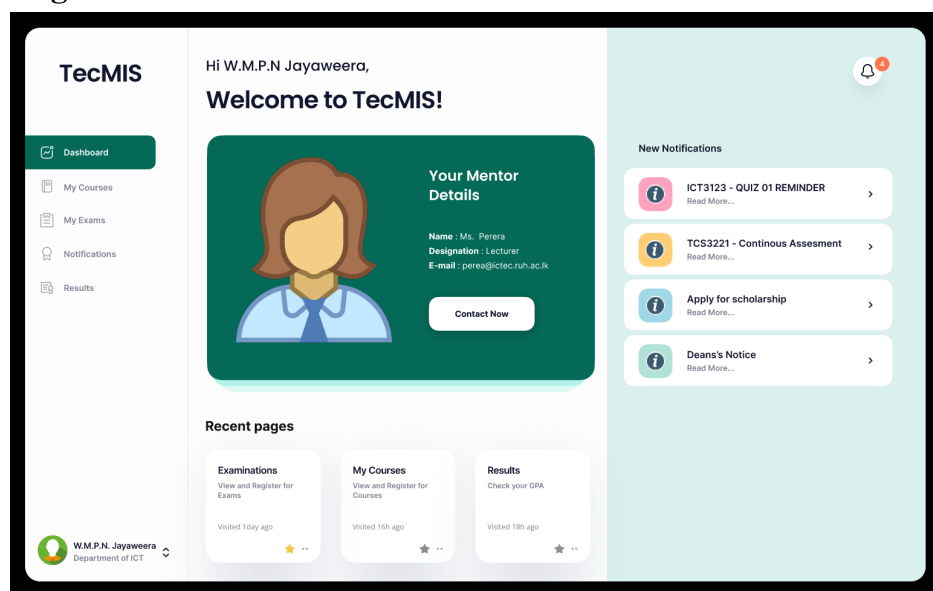
Dashboard

Old Design



- New notice badge is irrelevant
- Icons are not clear
- Mentor details are hard to read

New design



- Added a navigation bar and moved page links to navigation bar.
- Added notification badge with notification count
- Show recent notifications on dashboard and colored them as per their importance.

- Added recent pages option to quickly visit recent pages and added an option to bookmark them.
- Show the current user in a newer way, and the user can be logged out by clicking on it.
- Reduced the mentor information visible to user while most important details can be seen easily and added a button to get them when needed.

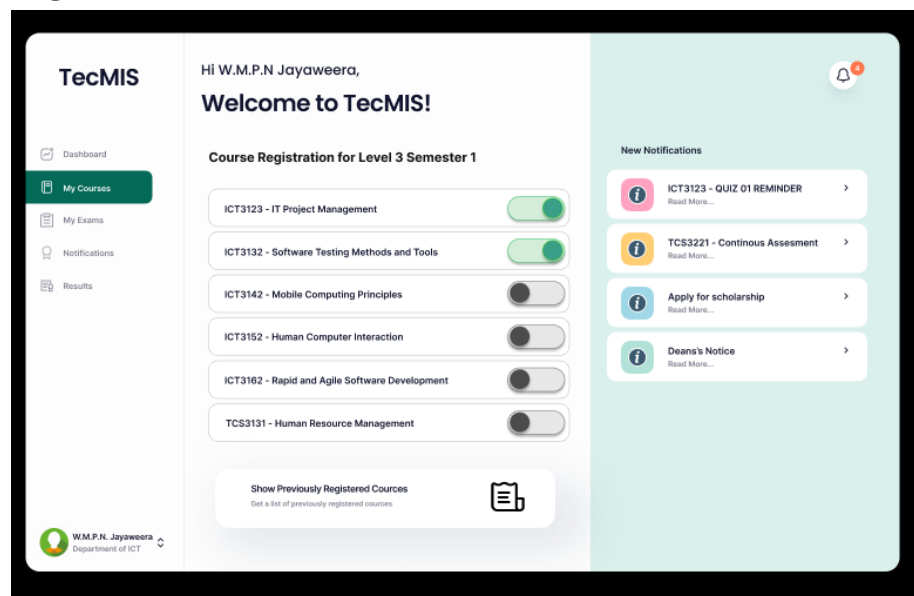
Course registration

Old Design

Mobile :			
Course Registration Unit			
Registered Course Units for 2020_2021 Academic year and Semester 1			
You Have registered for 20.00 (Confirm) Credits for This semester			
Courses Code	Courses Name	Degree Status	Official Confirmation
ENG3122	English V	Degree	Confirmed
ICT3113	Advanced Programming in Java/C++	Degree	Confirmed
ICT3123	IT Project Management	Degree	Confirmed
ICT3132	Software Testing Methods and Tools	Degree	Confirmed
ICT3142	Mobile Computing Principles	Degree	Confirmed
ICT3152	Human Computer Interaction	Degree	Confirmed
ICT3162	Rapid and Agile Software Development	Degree	Confirmed
ICT3173	Group Project	Degree	Confirmed
TCS3131	Human Resource Management	Degree	Confirmed
All Course Units that you have registered up-to-date			
You have registered for 97.00 (Confirmed) Credits			
Course Code	Course Name	Degree Status	Official Confirmation
ENG0220	English	Not Define	Confirmed
ENT0220	Mathematics	Not Define	Confirmed
ICT0220	ICT	Not Define	Confirmed
ENG1114	English I	Degree	Confirmed
ICT1113	Essentials of ICT	Degree	Confirmed
ICT1123	PC Applications and Computer Laboratory	Degree	Confirmed
ICT1133	Fundamentals of Computer Programming	Degree	Confirmed
ICT1143	Web Technologies	Degree	Confirmed
TMS1113	Foundation of Mathematics	Degree	Confirmed

- System-wide design faults are present.

New Design



- Resized the components for easy access to the user.
- Replaced links with toggle buttons to easy and clear registration.
- Removed previous courses and added a button to view if the user is needed to view those previous registrations.

Exam registration

Old Design

Exam Registration Unit			
Examination Registration for 2020_2021 Academic year and Semester 1			
Course Code	Course Name	Degree Status	Status
ENG3122	English V	Degree	NC
ICT3113	Advanced Programming in Java/C++	Degree	NC
ICT3123	IT Project Management	Degree	NC
ICT3132	Software Testing Methods and Tools	Degree	NC
ICT3142	Mobile Computing Principles	Degree	NC
ICT3152	Human Computer Interaction	Degree	NC
ICT3162	Rapid and Agile Software Development	Degree	NC
ICT3173	Group Project	Degree	NC
TCS3131	Human Resource Management	Degree	NC

EL : Eligible
 NE : Not Eligible(No Minimum Attendance)
 NE* : Not Eligible(CA Fail)
 NE** : Not Eligible(No Minimum Attendance & CA Fail)
 NC : Not Decided

- Registration status are not clear

New Design

TecMIS

Hi W.M.P.N Jayaweera,
Welcome to TecMIS!

Exam Registration for Level 3 Semester 1

ICT3123 - IT Project Management	<input checked="" type="checkbox"/>
ICT3132 - Software Testing Methods and Tools	<input checked="" type="checkbox"/>
ICT3142 - Mobile Computing Principles	<input checked="" type="checkbox"/>
ICT3152 - Human Computer Interaction	<input checked="" type="checkbox"/>
ICT3162 - Rapid and Agile Software Development	<input type="checkbox"/>
TCS3131 - Human Resource Management	<input type="checkbox"/>

[Show CA marks and Eligibility Info](#)
 See more details about exam registration

New Notifications

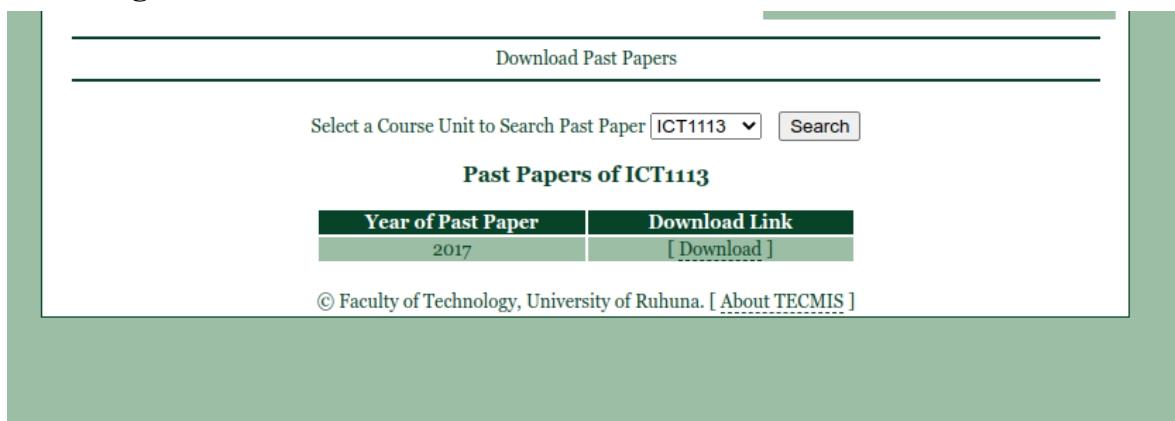
- ICT3123 - QUIZ 01 REMINDER
[Read More...](#)
- TCS3221 - Continuous Assessment
[Read More...](#)
- Apply for scholarship
[Read More...](#)
- Deans's Notice
[Read More...](#)

W.M.P.N. Jayaweera
 Department of ICT

- Same methodology used as course registration.
- Created simple toggle buttons to register and unregister for courses while showing the eligibility.
- Added user feedback when hovering the toggle buttons to inform the user what is current status is.

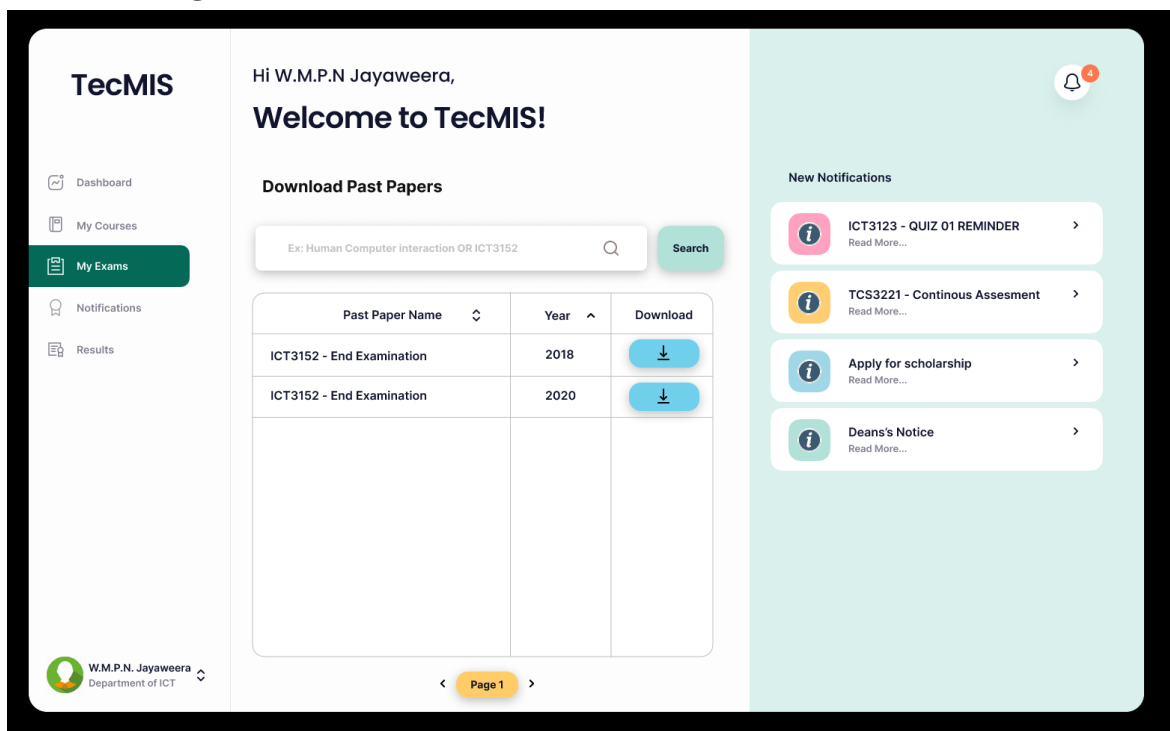
Download past papers

Old Design



- No option to directly give the year

New Design



- Removed complex selection and added search bar to search and download past papers.

- Added options to search result to be sorted by name and sorted by year.
- Added pagination if search results are not enough to display in a single page.

Attendance

Old Design

View Your Daily Attendance

Select the Course Unit For view Attendance

Subject	Name	Department	View
ENG3122	English V	DMS	View
ICT3113	Advanced Programming in Java/C++	DICT	View
ICT3123	IT Project Management	DICT	View
ICT3132	Software Testing Methods and Tools	DICT	View
ICT3142	Mobile Computing Principles	DICT	View
ICT3152	Human Computer Interaction	DICT	View
ICT3162	Rapid and Agile Software Development	DICT	View
ICT3173	Group Project	DICT	View
TCS3131	Human Resource Management	DMS	View

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View Your Daily Attendance


Course : ICT3152

Lid	Date	Hours	Type	Time	Group	Status
5534	2022-03-22	2	Lecture	10:00:00	-	Present

Summary of Your Attendance

Attendance of Lecture - in ICT3152 Course Unit

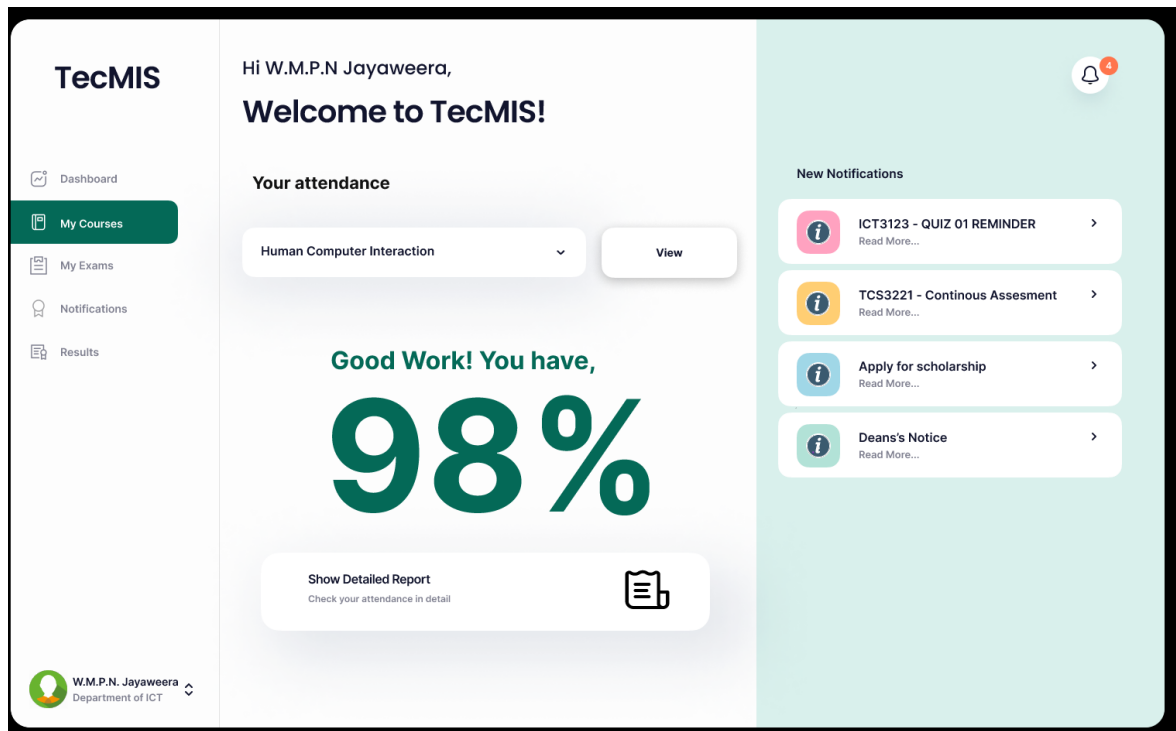
Total Participated Hours : 2
Total Hours : 2


[Go Back](#)

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- Course module selection is too complex
- The progress bar is not clear
- Full of unwanted details. (Short time memory load is high)

New Design



- Removed progress bar because the student is focusing on the percentage (Do I have 80% for this subject?) and not about progress.
- The interface will change according to the percentage amount.
 - If the student gets lower attendance than 80%, the font color will change to red and the “Good Work” message will be changed to “You are in trouble!”.
 - If the student gets the same attendance to 80% the color of the percentage will turn yellow and the message will be change to “Do not absent again!”.
- Removed the lengthy text and added a button. If the student needs further details, the student can simply click on it and view it.

View Notifications

Old Design


[Back to Home](#)

[Back to Notice](#)

Most Recent Notices

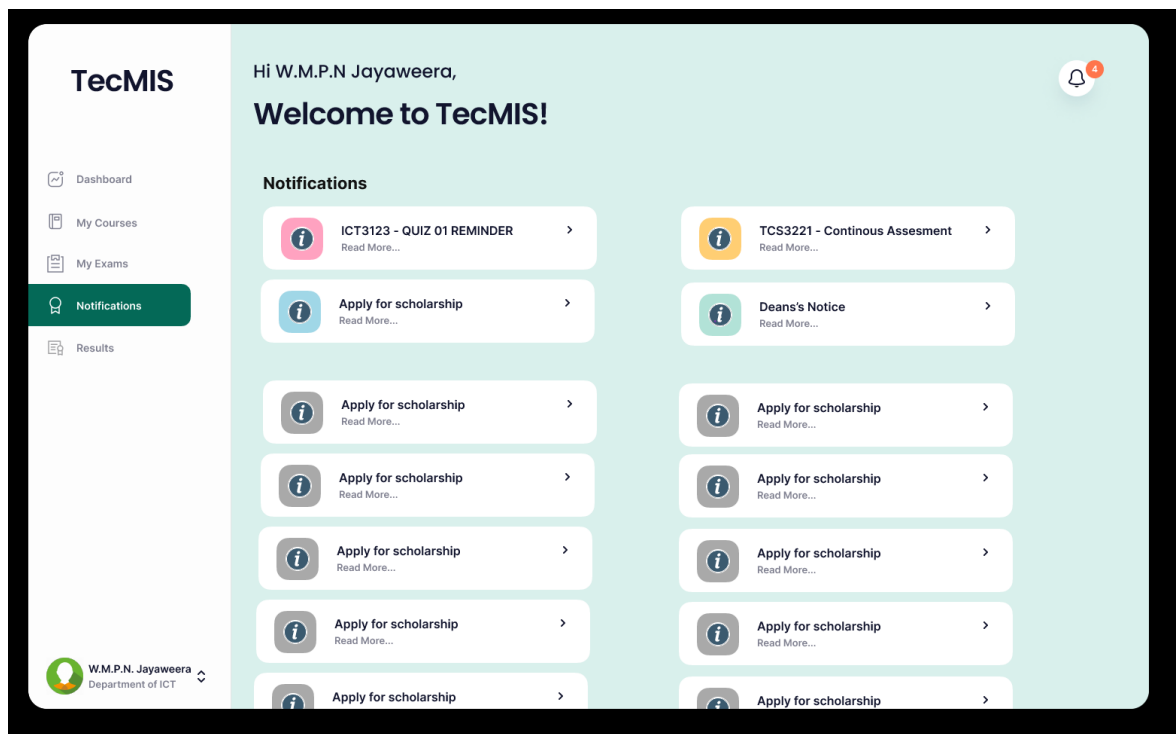
No	Add Date / Time	Title	Download Link
1	2022-05-19/11:12	ICT LEVEL 3 SEMESTER 2 EXAMINATION RESULTS - 2019/2020	Download
2	2022-05-19/11:12	ICT LEVEL 3 SEMESTER 2 REPEAT EXAMINATION RESULTS - 2019/2020	Download
3	2022-05-19/11:10	ETD LEVEL 3 SEMESTER 2 EXAMINATION RESULTS - 2019/2020	Download
4	2022-05-19/11:08	ETD LEVEL 2 SEMESTER 2 EXAMINATION RESULTS - 2019/2020	Download
5	2022-05-19/11:07	ICT LEVEL 2 SEMESTER 2 REPEAT EXAMINATION RESULTS - 2019/2020	Download
6	2022-05-18/13:00	QUIZ 3 TCS 3121 AND TCS 3111	Download
7	2022-05-17/10:18	EXAMINATION REGISTRATION-EXTENDED	Download
8	2022-05-17/10:18	EXAMINATION REGISTRATION-EXTENDED	Download
9	2022-05-15/09:54	ENGLISH V - MID ASSESSMENT	Download
10	2022-05-15/09:33	RESUME PHYSICAL CLASSES FOR LEVEL 1 AND 2	Download
11	2022-05-15/04:26	HUMAN RESOURCE MANAGEMENT (TCS3131) - CONTINUOUS ASSESSMENT 2	Download

Previous Notices

No	Add Date / Time	Title	Download Link
1	2022-05-12/11:49	EXAMINATION ADMISSIONS-DET(LEVEL 4 SEMESTER I)	Download
2	2022-05-09/09:55	TCS 3111 SAFETY AND RISK MANAGEMENT - MID-SEMESTER EVALUATION	Download
3	2022-05-09/09:49	ENGLISH V MID ASSESSMENT	Download
4	2022-05-07/08:19	EXAMINATION REGISTRATION	Download
5	2022-05-05/15:09	EXAMINATION ADMISSIONS	Download
6	2022-05-	MAHARAJA UNRAID 2022/2022 BATCH	Download

- Too many details
- Cannot mark notifications are read nor not
- Cannot identify the notice is relevant or not
- No notification categorizations

New Design



- Designed a separate page like the old system other than the notification sidebar, but with more clarity and user-friendliness.
- Each color represent about how important the notification is.
- The notification color turn gray and moved to lower part of the page when they are read.
- User also can mark notifications read without viewing it
- We recommend to the backend developer to filter the notifications for the relevant department. As an example, a notification for BST students is not needed for ICT students.

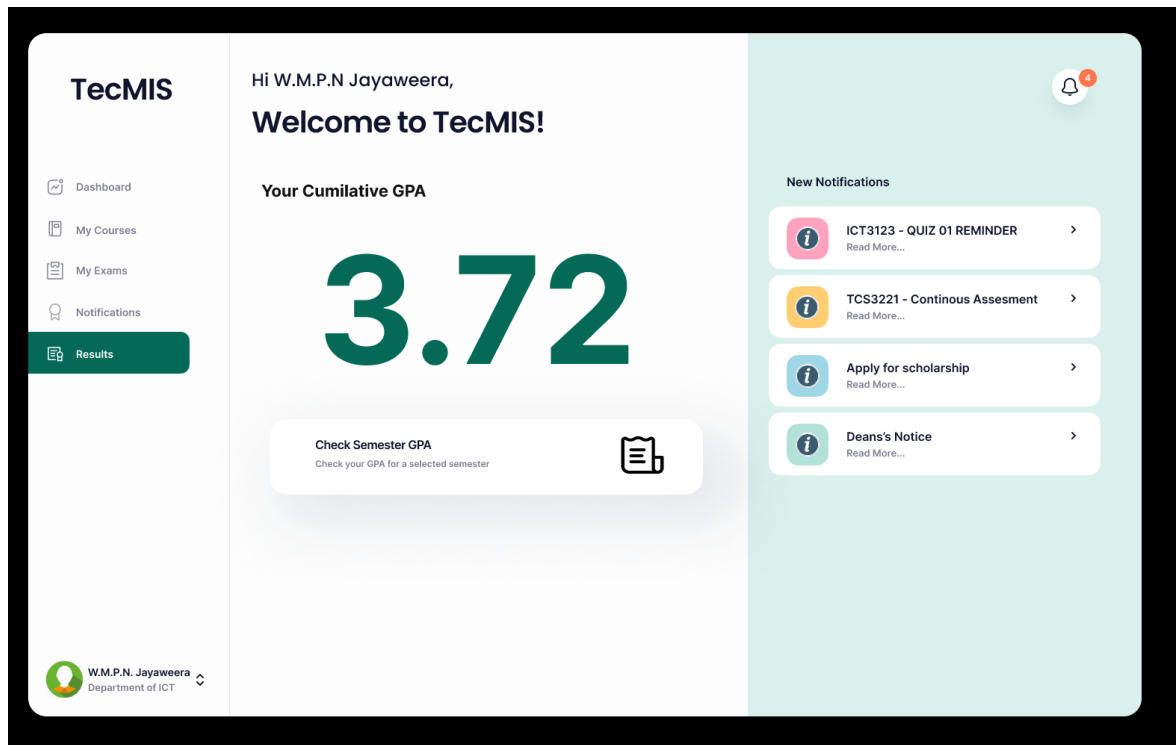
View GPA

Old Design

[Section is not currently available in the system]

- Color combinations are bad
- Cannot find the GPA at a glance
- Too many details

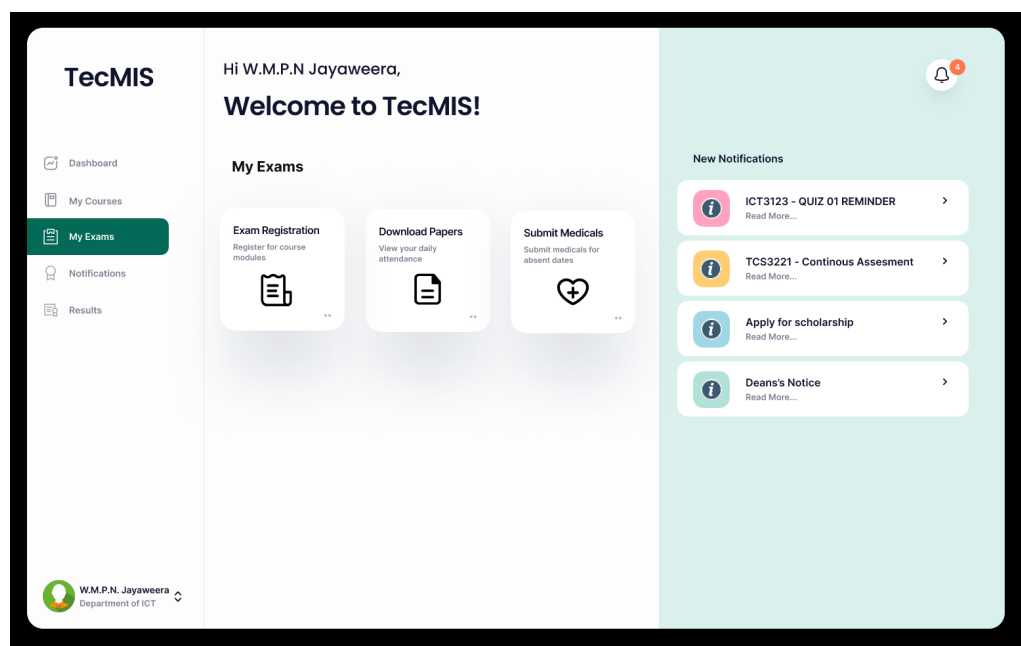
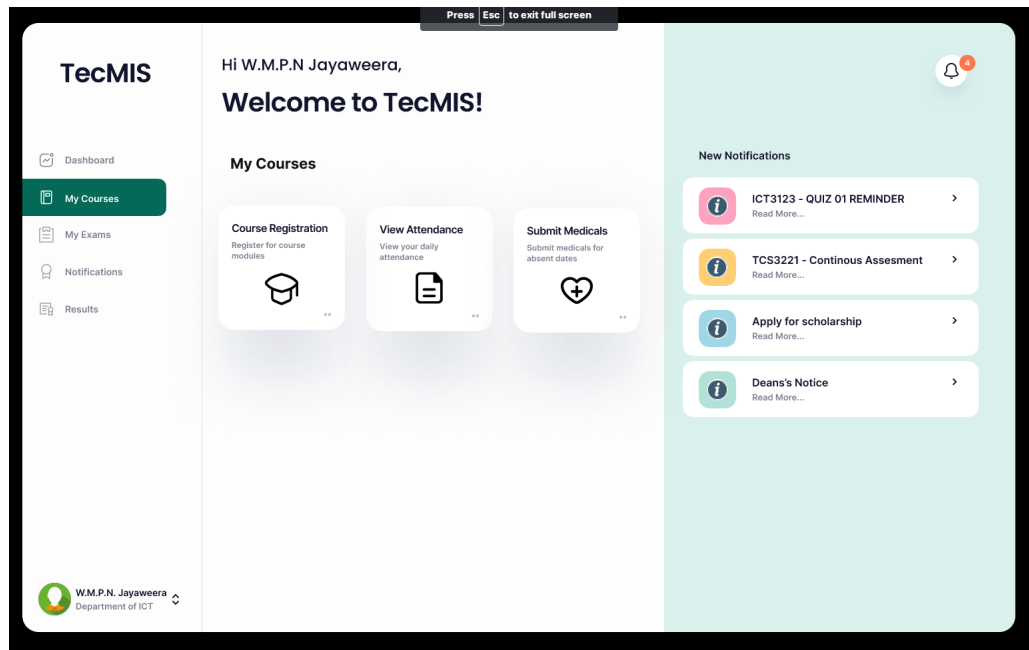
New Design

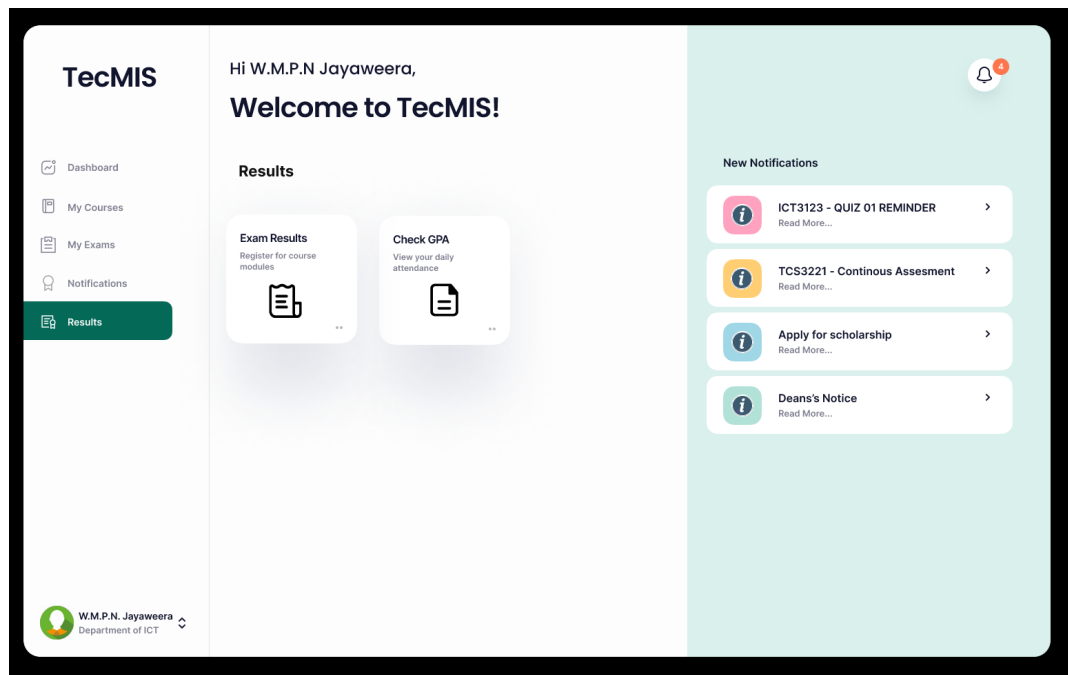


- Cut down many unwanted components from the current system design.
- New design is focused on showing direct CGPA value to the student, because normally a student is visiting the page to view his current GPA.
- Added a button to view more details in a case which the student needs SGPA values and more.

Extra interfaces

These interfaces are designed as helper interfaces for the main dashboard. This sub categories simplify the user experience. These helper interfaces can be bypassed through the navigation panel if the user do not need an extra step.





KLM Analysis of Old System

Login

Description	Operator	Time (s)
Mentally prepare	M	1.35
Move cursor to “username” text box	P	1.10
Click mouse button	K	0.20
Enter username (5 characters)	K	1.00 (0.20 *5)
Mentally prepare	M	1.35
Move cursor to “password” text box	P	1.10
Click mouse button	K	0.20
Enter password (at least 8 characters)	K	1.60 (0.20*8)
Mentally prepare	M	1.35
Move cursor to “sign in” button	K	1.10
Click mouse button	K	0.20
		10.55 s

Exam registration

Description	Operator	Time (s)
Mentally prepare	M	1.35
Move cursor to “Registration” icon	P	1.10
Mentally prepare	M	1.35
Move cursor to “Exam Registration” link	P	1.10
Click mouse button	K	0.20
Mentally prepare	M	1.35
Move cursor to “register” button in relevant subject	P	1.10
Click mouse button	K	0.20
		7.75

Attendance check

Description	Operator	Time (s)
Mentally prepare	M	1.35
Move cursor to “Register” icon	P	1.10
Mentally prepare	M	1.35
Move cursor to “view attendance” link	P	1.10
Click mouse button	K	0.20
Mentally prepare	M	1.35
Move cursor to “view” link in relevant subject	P	1.10
Click mouse button	K	0.20
		7.75

Download past papers

Description	Operator	Time (s)
Mentally prepare	M	1.35
Move cursor to “Course” icon	P	1.10
Mentally prepare	M	1.35
Move cursor to “Download Past Papers” link	P	1.10
Click mouse button	K	0.20
Mentally prepare	M	1.35
Move cursor to dropdown menu	P	1.10
Click mouse button	K	0.20
Mentally prepare	M	1.35
Move cursor to the relevant subject id	P	1.10
Click mouse button	K	0.20
Mentally prepare	M	1.35
Move cursor to “search” button	P	1.10
Click mouse button	K	0.20
Mentally prepare	M	1.35
Move cursor to “Download” link in relevant year	P	1.10
Click mouse button	K	0.20
		15.7

Conclusion

The Management Information System of Faculty of Technology is used by both expert and novice users because all the students are not from ICT backgrounds and Faculty of Technology is consists with a Multidisciplinary studies department, Engineering technology department and also Bio Systems department. Students are using this system because they do not have and alternative. Because of that reason, they are forced to use this current system.

The proposed new system interfaces are designed to use for any kind of user who has very basic knowledge about computers. This new design will save user's time and enhance the user experience of the system. While the Human Computer Interaction is everything (UX is everything), the system quality is depends on the user experience.

Our final goal was to design an attractive and happy to use system user interface for the discussed system. We tried our best to do that by simplifying, design according to the human mental model and applying modern technology to the interfaces. The only tool we have used to design the system was Figma, which is a web based tool designed to create attractive interfaces.

References

- [1] Figma. 2022. Learn Design with Figma. [online] Available at:
<<https://www.figma.com/resources/learn-design/>> [Accessed 23 May 2022].
- [2] Adobe.com. 2022. Serif vs Sans Serif Fonts & When to Use Which | Adobe. [online] Available at:
<<https://www.adobe.com/creativecloud/design/discover/serif-vs-sans-serif.html>> [Accessed 23 May 2022].
- [3] Google Fonts. 2022. Google Fonts. [online] Available at:
<<https://fonts.google.com/specimen/Poppins>> [Accessed 23 May 2022].