



# **IT4010 – Research Project Year 4**

Status Document 1

Submitted to

Sri Lanka Institute of Information Technology

## **Enhancing Personalized E-Learning: A Novel Approach to Adaptive Learning Pathways for Individualized Knowledge Acquisition**

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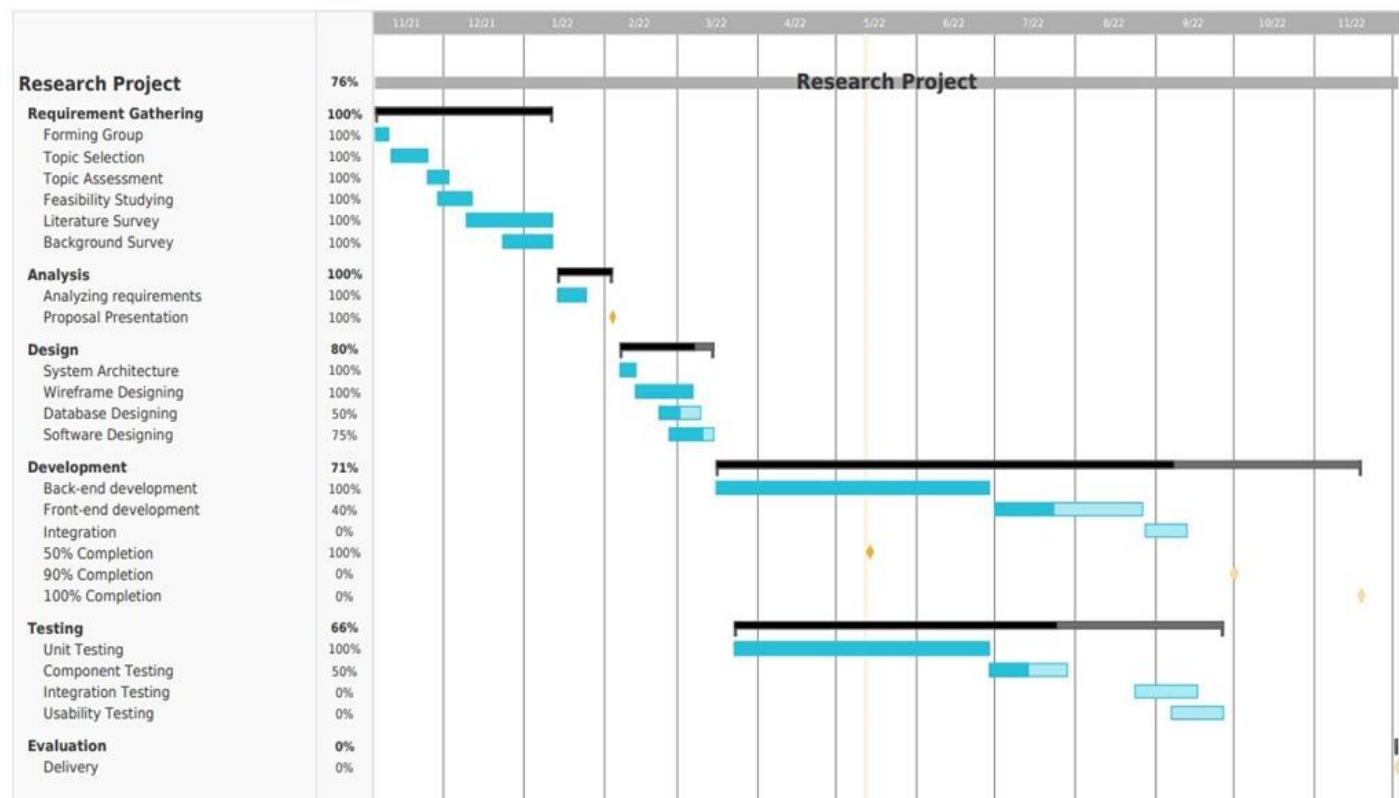
In partial fulfilment of the requirements for the  
Bachelor of Science Special Honors Degree in Information Technology

Date: May 05<sup>th</sup>, 2024

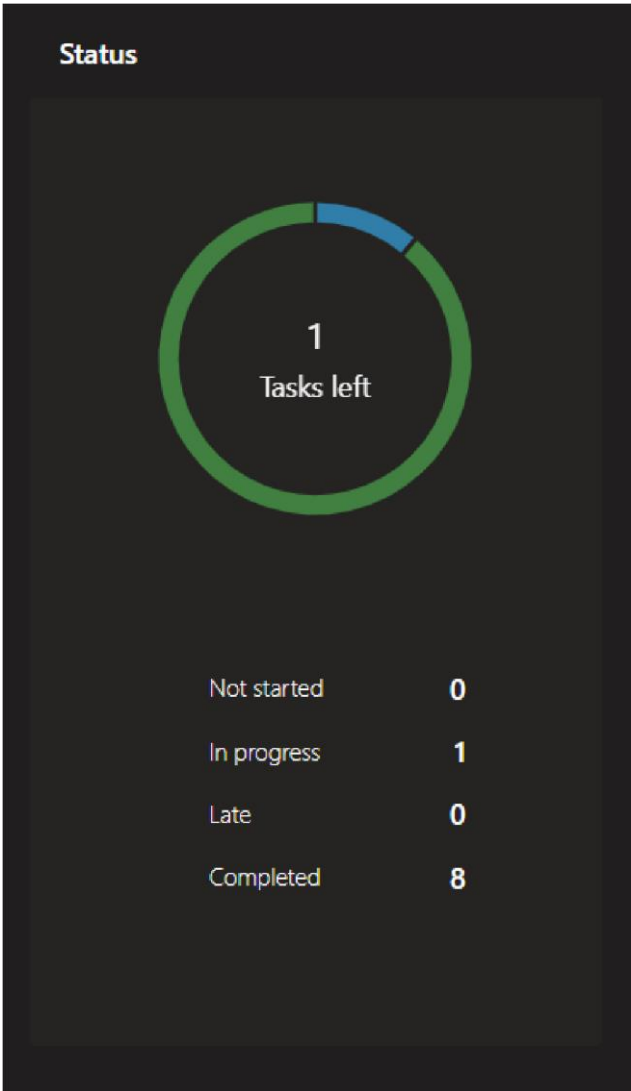
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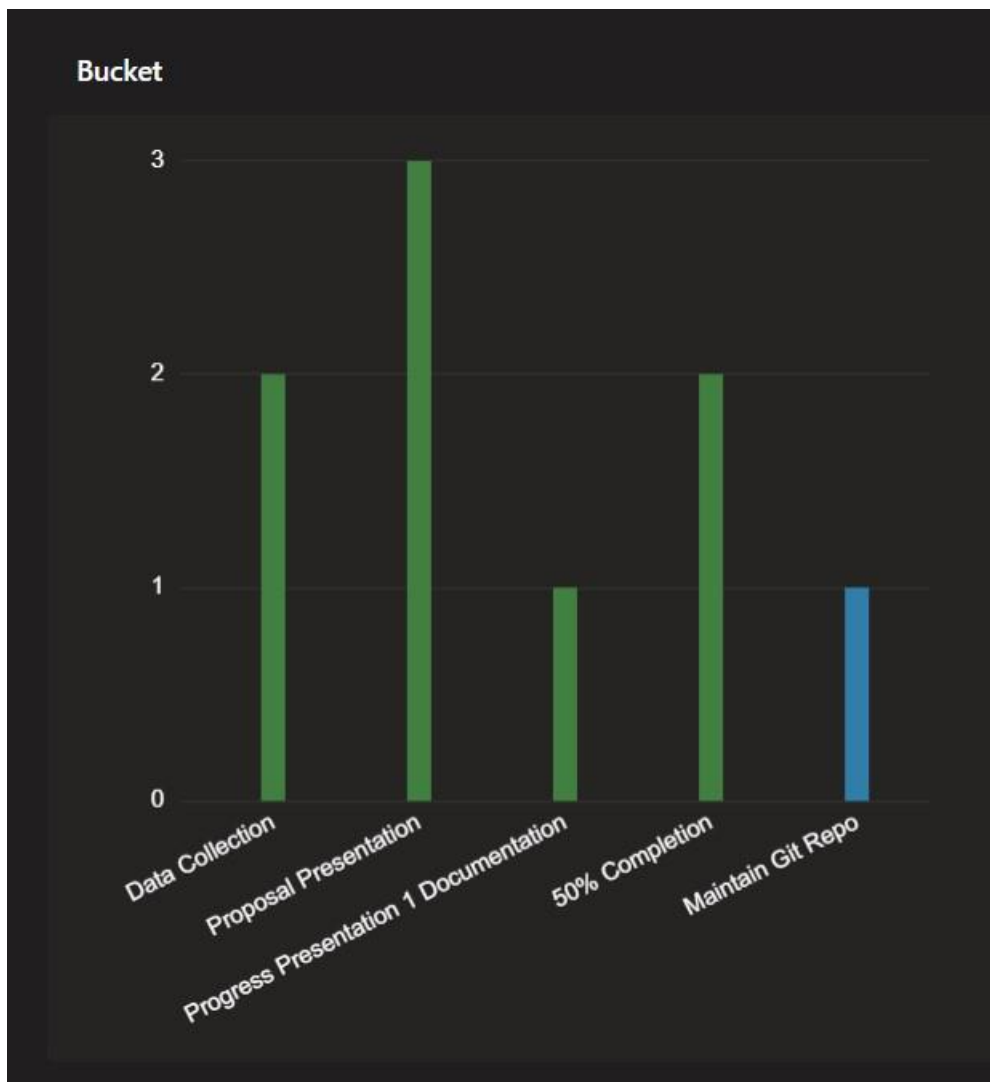
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# Gantt Chart

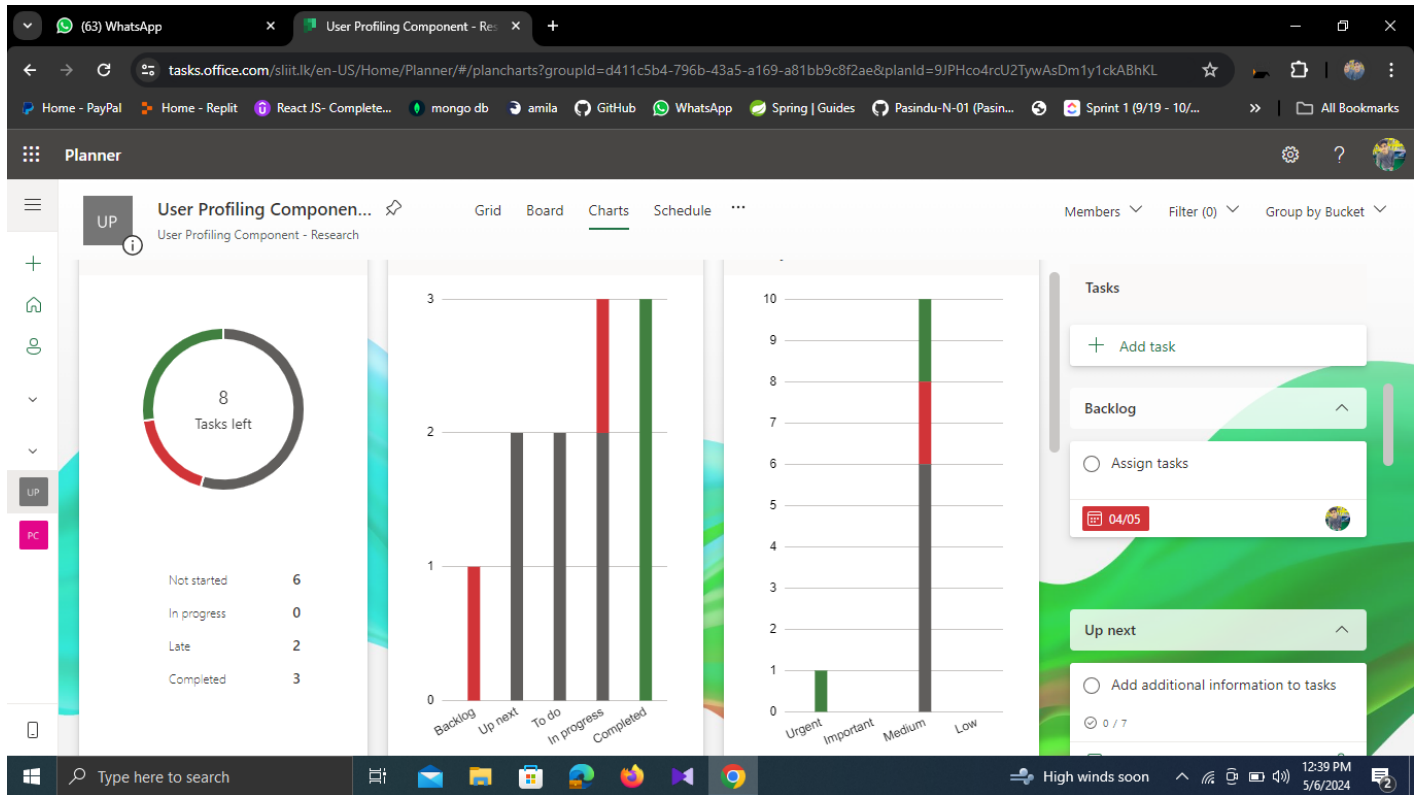


Project View of MS Planner





Task View Of the MS Planner



## Work Breakdown Structure of MS Planner

The screenshot displays the Microsoft Planner web interface. The browser's address bar shows the URL: `tasks.office.com/sliit.lk/en-US/Home/Planner/#/plantaskboard?groupId=d411c5b4-796b-43a5-a169-a81bb9c8f2ae&planId=9JPHco4rcU2TywAsDm1y1ck...`. The Planner interface is titled "User Profiling Component" and is set to the "Board" view. The left sidebar shows a list of plans, including "Research Planner" and "User Profiling Component - Research". The main area is divided into three columns: "To do", "In progress", and "Completed".

**To do column:**

- Task: "Integrate all components together." (Due: 08/01)
- Task: "Web Application Design and Implementations" (Due: 07/10)

**In progress column:**

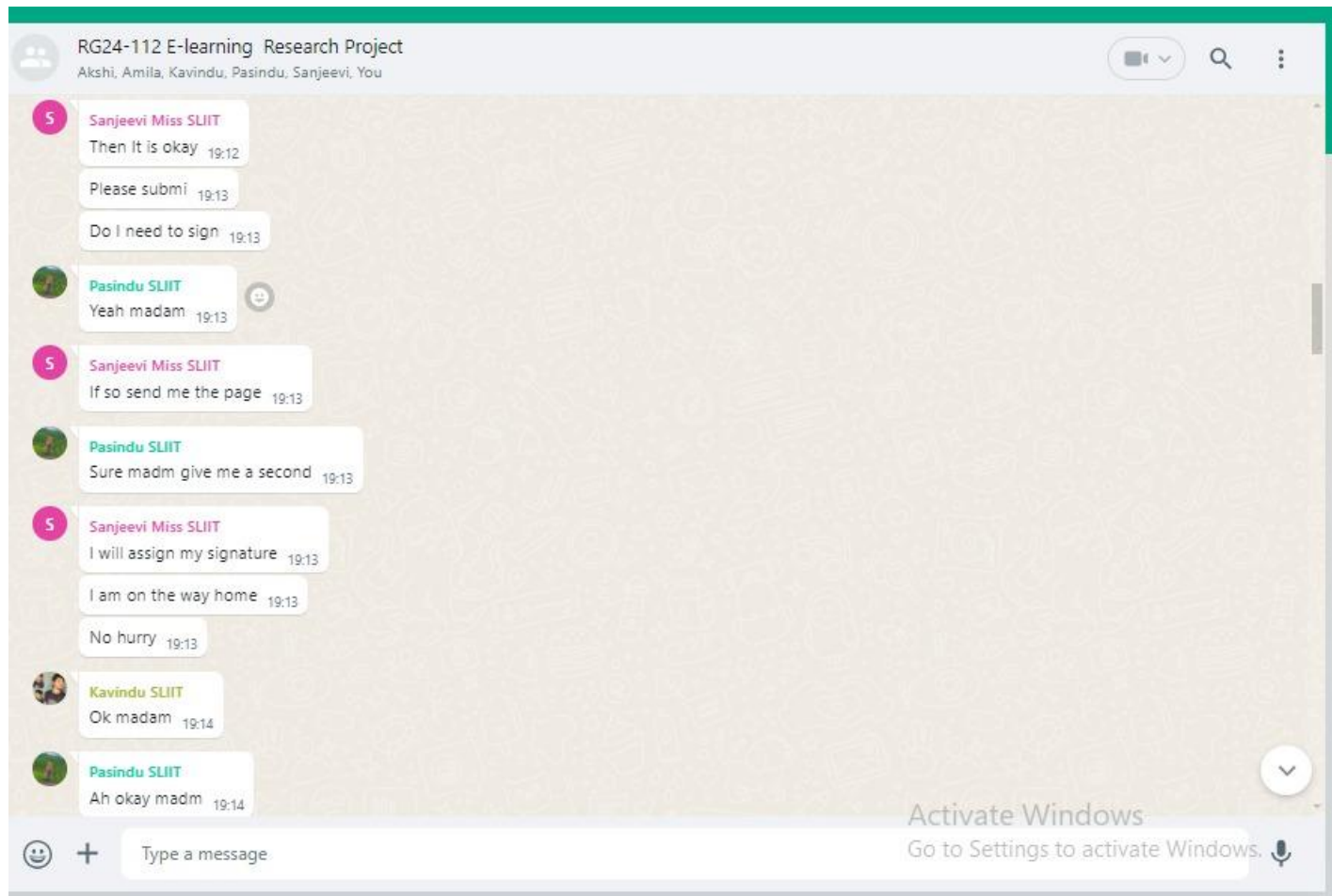
- Task: "configuration related to the user profiling part." (Due: 05/07)
- Task: "Implementing a python-based backend module for evaluate the both of data initial and dynamic and give the weekly user profiling." (Due: 06/01)
- Task: "Implementing a python-based backend module for evaluate the initial student data and give the initial user profiling." (Due: 06/01)

**Completed column:**

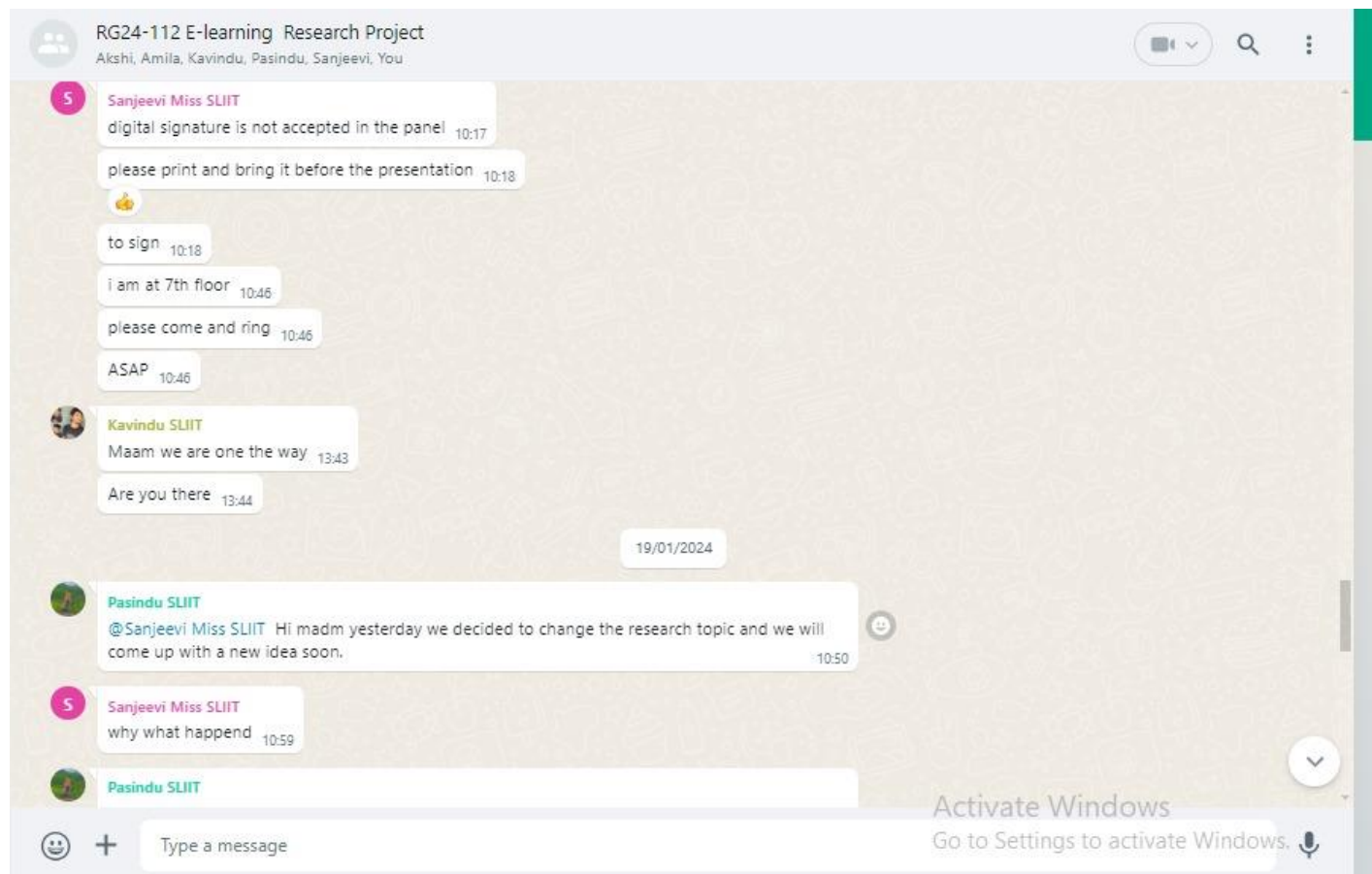
- Task: "Implement a sample python code for perform the initial user profiling (exam results-based part);"
- Task: "Finalize the initial dataset which need to make the initial user profiling part;"
- Task: "Complete background-research about other LMS platforms and their data usage"

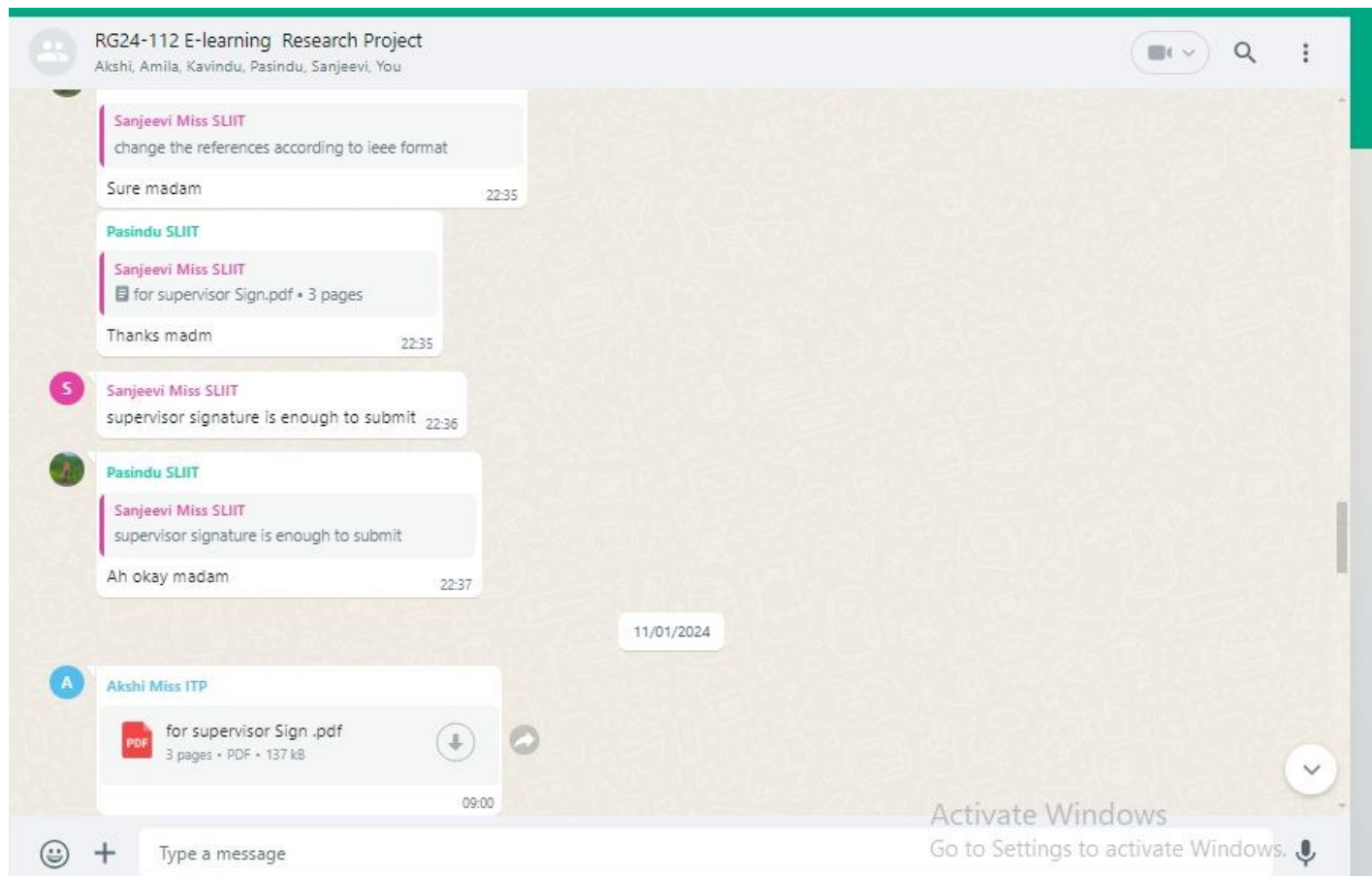
The bottom of the image shows the Windows taskbar with the search bar, taskbar icons, and system tray showing the date and time as 8:12 AM on 5/6/2024.

## Proof of Virtual and Physical Meetings









RG24-112 E-learning Research Project

Akshi, Amila, Kavindu, Pasindu, Sanjeevi, You

TAF Document RG24-112.pdf • 15 pages

This is our TAF document PDF

19:31

Sanjeevi Miss SLIIT

When is the deadline

22:16

Midnight,

22:16

Pasindu SLIIT

Before 11th January

22:18

Deadline should be tomorrow midnight

22:18

Pasindu SLIIT

Pasindu SLIIT

Madam there is a CW notice that saying today is the last day. We shoul submit the document before 11th January..

This notice said like that.But not clearly mentioned.

22:19

Sanjeevi Miss SLIIT

change the references according to ieee format

22:35

Sanjeevi Miss SLIIT

for supervisor Sign.pdf

3 pages • PDF • 150 kB

22:35

Activate Windows

Go to Settings to activate Windows.

Type a message

Research Meeting

01:00:28

Pop out

Chat

People

Raise

React

View

More

Camera

Mic

Share

Leave

Nishshanka N. ...

Jayasinghe K.A....

Nishshanka N. ...

Sanji Chan...

Participants

Type a name

In this meeting (5)

Mute all

Abeykoon R.M.S.P it21021602

Jayasinghe K.A.K.N it21032806

Organizer

Nishshanka N. A. G. A. A it21032...

Nishshanka N. A. P. K. R. it21033...

Sanji Chandrasiri (Guest)

Meeting guest

Activate Windows  
Go to Settings to activate Windows.

OVERALL RESEARCH PROBLEM

- **Lack of Personalization:** E-learning platforms struggle to tailor personalized learning experiences to individual preferences and learning styles.
- **Generic Approaches:** Current systems use content delivery methods that don't maximize user engagement or knowledge retention.
- **Limited Adaptability:** Most platforms can't dynamically adjust to diverse learner needs, creating difficulties in accessing relevant materials.
- **Gap in Literature:** There's a lack of research on developing adaptive machine learning models for customizing learning pathways in online education.

Nishshanka N. A. P. K. R. it21033032

08:45

Pop outChatPeopleRaiseReactViewMoreCameraMicShareLeave

PowerPoint Slide Show - [unichiru PPT (1)] - PowerPoint

# OVERALL SYSTEM DIAGRAM

The diagram illustrates the system architecture. On the left, **Students** and **IT Management Users** interact with the **Frontend Web App**. The frontend includes icons for code editors, a database, and PHP, along with **Tailwind CSS**. This frontend connects via an **API** (represented by a box with green and red arrows) to the **AWS Cloud Hosted Backend**. The backend consists of **Python Flask**, **python scripts**, and **AI/ML** components. These are connected to a central server icon, which in turn connects to two databases: **Main System DB** and **Learning Resources DB**, both represented by cylinder icons with **SQL** labels.

Nishshanka N. A. P. K. R. it2...

Jayasinghe K.A.K.N it21032...

Nishshanka N. A. G. A. A it2...

Activate Windows