UTM

UNIVERSITI TEKNOLOGI MALAYSIA

BACHELOR OF GRAPHICS AND MULTIMEDIA SOFTWARE

COURSE CODE: SECP1013

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SEMESTER 20252026 – 1

SECTION 09

DESIGN THINKING PROJECT

GROUP MEMBERS

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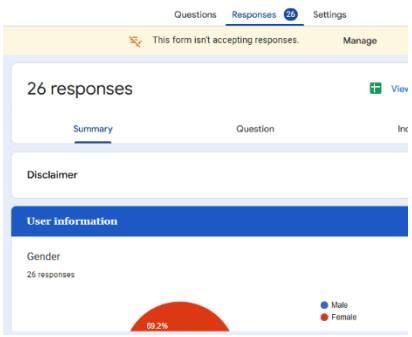
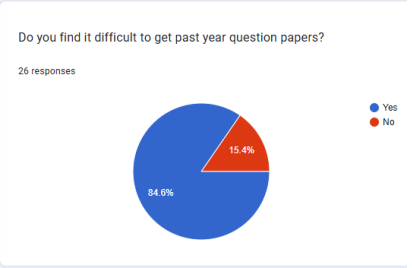
INTRODUCTION

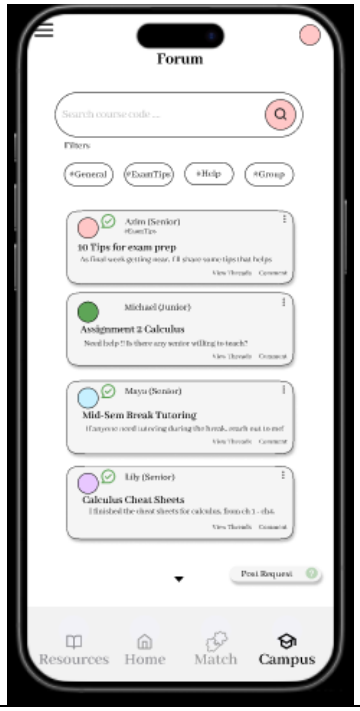
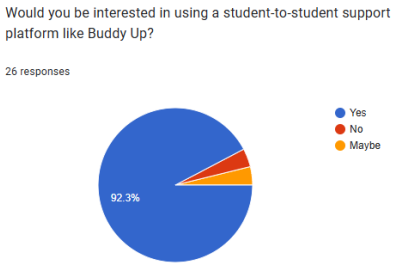
Buddy Up is a student-to-student support platform designed to assist first-year university students in overcoming academic and transitional challenges. New students often face difficulties in locating past year examination papers, understanding effective exam and quiz strategies, and receiving authentic guidance from seniors who have already completed the same courses. The absence of a structured support system frequently leads to academic stress, confusion, and reduced confidence among junior students.

Buddy Up aims to bridge this gap by connecting juniors with experienced senior students through a centralized digital platform. By enabling peer mentoring, resource sharing, and experience-based guidance, Buddy Up creates a collaborative academic environment that supports learning beyond the classroom. Seniors can provide practical insights on subject preparation, time management, and adapting to university culture, while juniors gain reliable academic support and confidence in their university journey.

Using information systems and technology, Buddy Up promotes knowledge sharing, strengthens peer relationships, and enhances the overall student learning experience. This platform not only supports academic success but also fosters leadership, communication, and mentoring skills among senior students, contributing positively to the university community.

2. DETAILED STEP AND DESCRIPTION IN DESIGN THINKING AND EVIDENCE FOR EACH PHASE

Design thinking phase	Description	Evidence
1. Empathize	Our group managed to identify the problem faced by first-year students in university. We figured that first-year students find it difficult to get a hold of past year papers. Besides, they also struggle to understand classes, assignments and quiz patterns which lead to abundant academic stress. We realized that there should be a platform or application solely to help students academically by bridging the gap between juniors and seniors. Thus, we have conducted surveys on university students for their insights and opinions.	
2. Define	The main problem we defined is that students find it difficult to get past year papers and get academic guidance from experienced individuals such as seniors. In summary, students need a platform to manage their academic burden because they feel overwhelmed and lost as first year students.	
3. Ideate	From the result of our brainstorming sessions, we came up with a few creative yet effective solutions that could ease students' academic stress. During this phase, a lot of ideas were discussed among our team with no judgement involved.	 Mind map from presentation slides

4. Prototype	In this phase, we used wireframes, which are basic, skeletal blueprints of a digital interface of our app. Its main purpose is to clarify structure and communicate ideas on how the app interface should look like during the early stage of design process. The appearance of our app is typically mid fidelity but can also be interactive.	
5. Test	During this phase, we tested our prototype for its usability and gathered feedback from students. The pie chart on the right shows that 92.3% of the students are interested to use Buddy Up app while the rest are 'not interested' and 'might be interested' respectively.	

3. (a) PROBLEM DESCRIPTION

Problem	Description	Struggles	Impact
Academic stress in first-year students	First-year university students face significant academic stress when transitioning from school to university. The learning style, assessment format, and expectations at university are very different from what they are used to.	Many juniors struggle because they do not know: • How quizzes, tests, and final exams are structured • What type of questions usually appear • How to study effectively for university-level subjects.	This causes confusion, anxiety, and poor academic performance, especially during the first semester.
Lack of Accessible and Reliable Senior Guidance	First-year students often lack access to senior guidance while facing the overwhelming shift to university. Unlike school, this environment demands independence, forcing students to self-manage their academic responsibilities without the close supervision they were used to.	First-year students often: • Feel shy or uncomfortable approaching seniors • Do not know which senior to seek help from • Rely on unreliable online sources instead.	Juniors miss out on practical tips that could help them perform better academically.
Poor Awareness of Merit Marks and Co-Curricular Activities	Merit marks and co-curricular involvement are essential to student life, yet a critical information gap exists for newcomers. Without	Many juniors: • Do not understand how merit marks work • Are unaware of clubs,	This leads to an unbalanced university experience.

	centralized guidance, juniors often find the requirements for these non-academic opportunities obscure and difficult to navigate.	societies, and events • Miss opportunities simply due to lack of information	

3. (b) SOLUTION DESCRIPTION

Solution 1: Academic Resources Hub (Main Feature)

The Academic Resources Hub allows seniors to share:

- Past-year exam, test, and quiz questions
- Assignment tips and study strategies
- Subject-specific guidance

This helps juniors prepare more effectively, reduces academic stress, and improves confidence.

Solution 2: Senior–Junior Matching System

The app matches juniors with seniors based on:

- Course and subject relevance
- Interests
- Availability

This structured matching system ensures juniors receive reliable and personalized guidance instead of random or unverified advice.

Solution 3: Merit & Club Explorer

This feature provides:

- Information on clubs and societies
- Events that offer merit marks
- Tips from seniors on how to participate

It helps juniors balance academic excellence with co-curricular involvement, contributing to holistic development.

Solution 4: Safe and Supportive Platform

With profile verification, discussion forums, and badges, BuddyUp ensures:

- Trustworthy interactions
- Active senior participation
- A supportive learning community

3. (c) TEAM WORKING DESCRIPTION

Empathy Phase	• Team members shared personal first-year experiences • We discussed common problems faced by juniors • Insights were gathered from both juniors and seniors
Define & Ideate Phases	• Brainstorming sessions were conducted as a group • All members contributed ideas • The Academic Resources Hub was selected as the main feature through discussion and consensus
Prototype Phase	• Tasks were divided according to individual strengths • Some members focused on interface design • Others worked on feature planning and content structure
Test Phase	• The prototype was shared with peers • Feedback was collected and discussed • Improvements were suggested to enhance usability and relevance
Team Effectiveness	By assigning clear roles and maintaining communication, the team ensured smooth collaboration and effective project completion.

4. DESIGN THINKING ASSESSMNT POINTS

A. Transition Assessments (Gateways)

These assessments occurred at the end of each phase to decide if the team was ready to "Pivot or Proceed."

- **From Empathy to Define:**
  - Checked: Did we move beyond surface-level complaints? We reviewed our interview transcripts to ensure we captured emotional pain points, not just technical ones.
  - Accomplished: We successfully moved from "Students want notes" to the deeper insight: "Freshmen feel a loss of agency and high anxiety because they lack the 'hidden curriculum' that seniors possess."
- **From Define to Ideate:**
  - Checked: Is our "How Might We" (HMW) statement actionable? We tested if our HMW was too broad (e.g., "How might we fix university?") or too narrow.
  - Accomplished: We finalized the HMW: "How might we create a reciprocal exchange where seniors feel valued for their expertise and freshmen feel supported in their first 100 days?"
- **From Ideate to Prototype:**
  - Checked: The "Feasibility vs. Desirability" matrix. We checked if our top ideas were buildable within our budget and time.
  - Accomplished: We discarded the idea of a 24/7 live video chat (too high maintenance) and selected the "Resource Vault" with a Badge Reward System for seniors.

B. Final Project Demonstration Assessment

During the final demo, the assessment shifted to measuring the **Impact** and **Usability** of the completed prototype.

- **Metric 1: Task Success Rate**
  - Checked: We asked test users to find a "Calculus 1 Summary" within the app.
  - Accomplished: 100% of users found the resource in under three clicks, meeting our "efficiency" goal to reduce academic stress.
- **Metric 2: Emotional Response (The Stress Test)**

    - Checked: We used a 1–10 scale to measure stress levels before and after seeing the "Buddy Up" senior-curated guides.
    - Accomplished: Average stress levels dropped from an 8.5 to a 4.2 among first-year testers, validating our solution.
- **Metric 3: The Feedback Capture Grid**
    - Checked: We organized final feedback into four quadrants: Things that worked, Questions raised, Criticisms, and New Ideas.
    - Accomplished: We identified a need for a "Quality Verification" badge, which we added to our final project roadmap for future development.

Summary of Accomplished Milestones

By integrating these assessment points, the Buddy Up team ensured that every design choice was backed by evidence. We didn't just build an app; we built a validated solution that successfully transitioned from a student's "junk drawer" project into a professional grade "Internship Ready" digital tool.

5. DESIGN THINKING EVIDENCE

A. Sample Work by Students Working to Solve the Design Challenge

The team addressed the academic stress of first-year students transitioning to independent learning. Key evidence generated includes:

- Survey Results: Analysis of 26 responses identifying exam anxiety and social barriers.
- "Buddy Up" App: A solution featuring a Resource Hub, Senior Matching, and Merit Tracker.
- Digital Blueprints: 14 wireframe screens mapping the user journey from login to resource sharing.

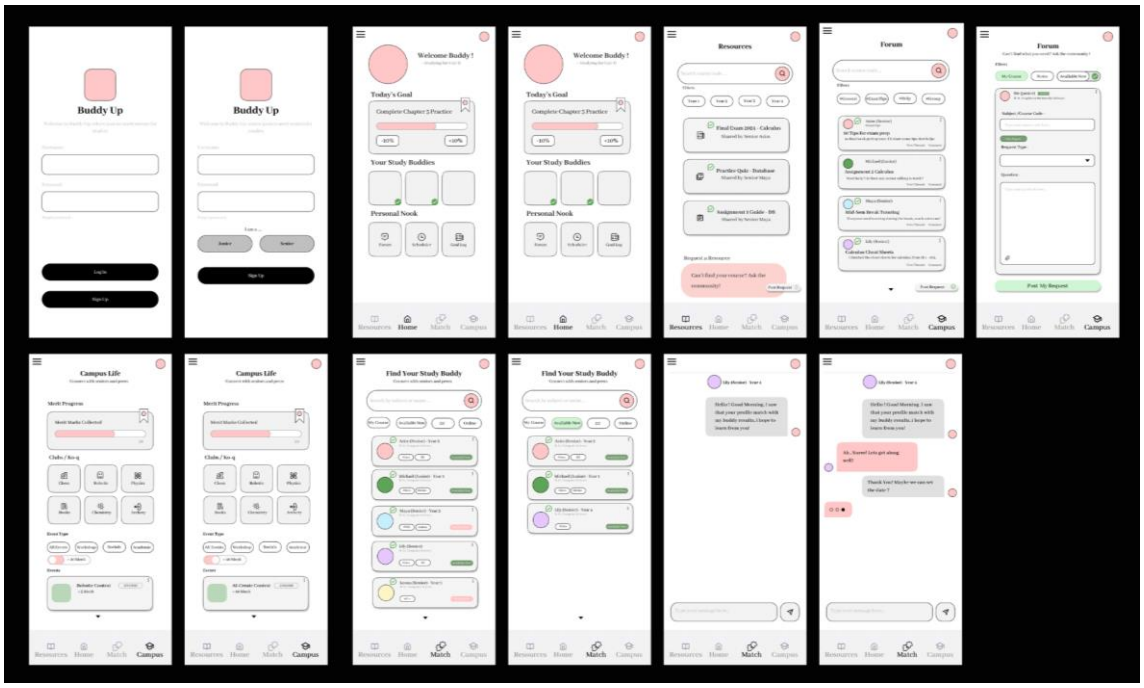


Figure 1: Full Digital Wireframe Set for “Buddy Up” Application.

This figure illustrates the end-to-end user flow from role selection to community engagement.

B. Record for Each Phase

Phase	Key Components	Details & Insights
Empathy	• User Profile	• Composite Character: First year university student, age 18 - 20.

	• Insights	• Traits: Overwhelmed, shy and anxious about new environment and exam formats. • Juniors lack knowledge of exam structures and feel intimidated approaching seniors for help.
Define	• Core Needs	• Academic: Evaluate past year papers. • Guidance: Bridge connection with seniors. • Balance: Navigate grades and co-curriculars with ease.
Ideate	• Process • Selected Solution	• Group brainstorming using divergent thinking to explore multiple solutions before selecting the app concept. • Academic Resources Hub: Connecting juniors and seniors in a supportive community where experience meets curiosity.
Prototype	• Development	• Format: Mid fidelity digital wireframes. • Components: Includes multi-role

		login, a “Find Your Study Buddy” interface and a “Merit Progress” tracker. *(See Figure 2 for visual layout)*
Test	• Execution	• Process: Peer testing for usability and relevance. • Outcome: Analysed the features clarity and suggested improvements aimed at reducing student stress.

6. REFLECTIONS – INDIVIDUAL

a. What is your goal regarding this course?

SANTHYA RAVICHANDRAN	My primary goal in pursuing this course is to develop a strong foundation in technology and information systems while gaining practical skills that are relevant to real-world applications. I aim to not only understand theoretical concepts but also learn how to apply them to solve real problems effectively. Through this course, I hope to improve my problem-solving abilities, critical thinking skills, and teamwork experience, which are essential for success in the technology industry. Ultimately, my goal is to graduate as a competent and confident individual who is well-prepared to adapt to the rapidly changing technological environment and contribute meaningfully to future projects or organisations.
ANNCHALEE ANON	In this course, I aim to gain fundamental knowledge in technology and information system, as well as other related skills that could be effectively applied to solve real-world problems and support organisation. In addition, I hope to develop practical skills such as analysing user needs, understanding system development processes, and applying design thinking in technology-based projects. I also want to improve my problem-solving, teamwork, and communication skills by participating in group activities and project work.
MUHAMMAD YASIR NAWAZ	My journey into this course is driven by a desire to evolve from a consumer of technology into a creator of it. Beyond mastering the core architecture of information systems, I am drawn to the digital craftsmanship involved in building tools that solve real-world frustrations. I find the intersection of logic and imagination in this field incredibly rewarding; there is a unique joy in seeing a theoretical concept materialize into a functional solution. By honing my critical thinking and collaborative skills, I intend to graduate not just as a technician, but as an innovator capable of navigating the ethical and

	practical challenges of our digital future. I want to be at the forefront of the next technological shift, contributing to projects that have a global reach.
SITI ZULAIKHA BINTI ABDOL RAZID	My goal in this course is to gain a strong understanding of technology and information systems while developing practical skills that can be applied to real-world problems. I want to learn not only theoretical concepts, but also how to analyse problems, understand user needs, and design effective solutions. Through this program, I hope to improve my problem-solving ability and become more confident in applying what I learn in academic and future professional settings.
NILIMA RAHMAN	My main objective in pursuing this course is to gain a solid understanding of technology and information systems along with practical, real-world skills. I want to learn not only the theoretical aspects but also how to apply my knowledge to solve real-life problems efficiently. This course will help me enhance my problem-solving, critical thinking, and teamwork skills, which are important for a successful career in the technology field. Ultimately, I aim to become a confident and capable graduate who can adapt to new technological changes and contribute effectively to future projects or organisations.

b. How does this design thinking project impact on your goal regarding your program?

SANTHYA RAVICHANDRAN	This design thinking project helped me understand how theoretical knowledge can be applied to solve real problems. By focusing on user needs and working through structured stages such as empathy, ideation, and prototyping, I learned how to think more critically and creatively. The project also improved my teamwork and communication skills, which are important for my academic growth and future career. Overall, this experience supports my goal of becoming

	a capable and adaptable technology student.
ANNCHALEE ANON	Design thinking impacts my goal by helping me develop user-centred technology solutions in structured way. It allows me to apply theoretical knowledge we learned in class to real-world problems through understanding user needs, generating creative ideas, and testing solutions. This approach supports my goal in this course by improving my problem-solving, critical thinking, and teamwork skills.
MUHAMMAD YASIR NAWAZ	This design thinking project served as a vital bridge between theoretical frameworks and real-world application. By navigating the structured phases of empathy, ideation, and prototyping, I refined my ability to approach complex problems with both critical rigor and creative flexibility. Beyond the technical outcomes, the collaborative nature of the project sharpened my communication and teamwork competencies I view as essential for my trajectory as a technology student. This experience has been fundamental in shaping me into a more adaptable and user-centric professional.
SITI ZULAIKHA BINTI ABDOL RAZID	This design thinking project helped me understand how the knowledge learned in this course can be applied in a structured and practical way. Instead of focusing only on technical aspects, the project encouraged me to consider users' experiences, emotions, and needs before proposing solutions. Working through the different design thinking phases helped me develop a more organised approach to problem-solving and showed me how teamwork and user-centred thinking are important in real projects. This experience supported my goal by helping me connect course content with real-world application.
NILIMA RAHMAN	This design thinking process has helped me align my learning with the goals of my

	program. It encouraged me to approach problems in a more structured and practical way rather than relying only on theory. Through this approach, I learned how to analyse problems from multiple perspectives and develop suitable solutions. The experience also helped me improve my collaboration skills by working closely with others. Overall, design thinking has strengthened my ability to learn effectively and has prepared me to meet future academic and professional challenges with confidence.

c. What is the improvement necessary for you to improve your potential in the industry?

SANTHYA RAVICHANDRAN	To improve my potential in the industry, I need to strengthen both my technical and soft skills. This includes improving my communication, teamwork, and ability to accept feedback. I also need to gain more hands-on experience through projects and continuous self-learning. By developing these skills, I can better prepare myself to meet industry expectations and perform effectively in a professional environment.
ANNCHALEE ANON	The improvement necessary for me to improve my potential in the industry is to further develop my technical skills and gain more hands-on experience with real-world projects. I also need to improve my problem-solving, communication, and teamwork skills to work effectively in a professional environment. In addition, continuously learning new technologies and keeping up with the industry trends will help me adapt better to fast-changing technology industry.
MUHAMMAD YASIR NAWAZ	To maximize my impact within the industry, I am committed to a path of continuous upskilling and proactive practical engagement. By refining my

	core competencies in problem-solving, adaptability, and professional communication, I aim to excel within high-pressure, real-world environments. My strategy involves seeking out hands-on projects and maintaining a pulse on emerging technological trends. This dedicated approach to professional evolution ensures I am not only prepared for future challenges but am also positioned as a dynamic contributor to the tech landscape.
SITI ZULAIKHA BINTI ABDOL RAZID	To improve my potential in the industry, I need to work on my communication, tolerance, and confidence, especially when working in a team environment. I also need more exposure to collaborative and practical projects. To achieve this, I plan to participate in more group-based activities, competitions, and events that involve teamwork and interaction with others. By improving my soft skills and gaining more hands-on experience, I believe I can better prepare myself for future industry challenges.
NILIMA RAHMAN	To enhance my potential in the industry, I need to focus on continuous skill development and practical exposure. Strengthening my problem-solving ability, adaptability, and professional communication will help me perform better in real work environments. I also need to actively work on real-life projects and stay updated with new technologies and industry trends. By improving these areas, I can increase my readiness for future professional challenges and career growth.