

INTI International College Penang


School of Engineering and Technology

3+0 Bachelor of Science (Hons) in Computer Science, in collaboration with Coventry University, UK

3+0 Bachelor of Science (Hons) in Computing, in collaboration with Coventry University, UK

Coursework cover sheet

Section A - To be completed by the student

Full Name: Matthew Loh Yet Marn	
CU Student ID Number: P21013568	
Semester: 1	
Session: August 2022	
Lecturer: Nadhras Abdul Hadi (nadhras.abdulhadi@newinti.edu.my)	
Module Code and Title: 4067CEM Software Design	
Assignment No. / Title: Continuous Assessment	% of Module Mark: 50
Hand out Date: 6th September 2022	Due Date: Task 1: 30 September 2022, by 11.59pm. Task 2: 18 November 2022, by 11.59pm Task 3: 4 November 2022, by 11.59pm. Task 4: 4 November 2022, by 11.59pm. Task 5: 4 November 2022, by 11.59pm.
Penalties: No late work will be accepted. If you are unable to submit coursework on time due to extenuating circumstances, you may be eligible for an extension. Please consult the lecturer.	
Declaration: I/we the undersigned confirm that I/we have read and agree to abide by the University regulations on plagiarism and cheating and Faculty coursework policies and procedures. I/we confirm that this piece of work is my/our own. I/we consent to appropriate storage of our work for plagiarism checking.	
Signature(s): 	

Section B - To be completed by the module leader

Intended learning outcomes assessed by this work:

1. Understand and apply appropriate concepts, tools and techniques to each stage of the software development
2. Understand and apply design patterns to software components in developing new software
3. Demonstrate an understanding of project planning and working to agreed deadlines, along with professional, interpersonal skills and effective communication required for software production
5. Demonstrate an awareness of, and ability to apply, social, professional, legal and ethical standards as documented in relevant laws and professional codes of conduct such as that of the Malaysian National Computer Confederation.

Marking scheme	Max	Mark
1. User Story Mapping	20	
2. Setting up a GitHub Repository	10	
3. Creating a Class diagram and design pattern selection	30	
4. Creating a Prototype User Interface and Usability Testing	20	
5. Discuss the ethical issue related to the software	20	
Total	100	

Task 1 – User Story Mapping (20 marks)
Matthew Loh Yet Marn – P21013568

1.1 - ABSTRACT

The purpose of this study was to determine the requirements for a software application called the College Buddy System with INTI students as its targeted audience. The mission of the software is designed to help bridge gaps in communication, making it easier for students to find people and introduce themselves to befriend like-minded individuals through Find-a-Buddy, the main feature of the system. The research was conducted through a questionnaire disseminated to potential users of the software. The questionnaire results showed a considerable interest for the system together with thorough specifications for the system. Primarily, this included wanting to use the system to find people with similar interests, for the ability to communicate with others, and the ability to set up meetups. The results of the research aid in the formation of user story maps. User story maps allow us to break down the bigger picture wants of our target users into specifications for our software in the form of a product backlog. A product backlog is a prioritized list of features or tasks that need to be completed in order to finish a project. The product backlog for the College Buddy System will be created and used for reference in various other Software Design principles like sprints and progress tracking.

1.2 – RESULTS (EXPANDABLE)

Section 1 of 3

College Buddy System for Students - User Story Questionnaire

This questionnaire aims to collect information required to a robust College Buddy System for INTI International College Penang students.

Hi, it's so great you could make it, my name is Matthew from INTI Penang. For Software Design, I've been tasked to ask students of INTI what they would wish for in a College Buddy System.

It's going to take about 10 minutes or so to answer these questions and I'll be so, so grateful to you for taking the time out of your day to help me!

This system's mission is to aid in connecting students who have similar academic interests and can help each other out with studying and coursework.


With that in mind, the system's vision is to also simultaneously nurture wholesome interpersonal relationships.

In this questionnaire, you will assume the perspective of a user that wants to expand on your desires for a fully fleshed-out College Buddy System.

College students come from all walks of life and backgrounds, and it is often difficult to transition to the independent style of learning and getting to know one another.

The main draw of the College Buddy System for INTI students is to help bridge gaps in communication, making it easier for students to find people and introduce themselves to other like-minded individuals through Find-a-Buddy.

With the boring stuff out of the way, click on next to begin the questionnaire.



After section 1 Continue to next section

Figure 1.2.1 - Questionnaire Screenshot - Landing Page

Section 2 of 3

Section A : Background Information

This information will be required to help fine-tune information on the target user demographic. Note that all the questions only require anonymous answers and should not have any personal information.

What is your age? *

- ☐ 16 years old and below
- ☐ 17-19 years old
- ☐ 20-22 years old
- ☐ 23-25 years old
- ☐ 26-28 years old
- ☐ 29 years old and above
- ☐ Prefer not to answer

What is your gender? *

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Prefer not to say

What level of study are you currently enrolled in? *

- ☐ Pre-university or Diploma
- ☐ Undergraduate
- ☐ Graduate
- ☐ Postgraduate
- ☐ Not currently studying or on break
- ☐ Prefer not to answer

Figure 1.2.2a - Questionnaire Screenshot - Section A – Background Information (1/2)

Are you currently working outside of campus life? *

- ☐ I am not currently working and do not plan to work.
- ☐ I am not currently working but plan to work.
- ☐ I am currently working part-time.
- ☐ I am currently working full-time.
- ☐ Prefer not to answer

How often do you visit campus? *

- ☐ I only come to campus to attend my academic classes.
- ☐ I come to campus for classes and also to participate in events for the clubs and societies I am a...
- ☐ I often frequent campus for activities outside of curriculums and extracurriculars to socialize or s ...
- ☐ Other...

After section 2 Continue to next section

Figure 1.2.2b - Questionnaire Screenshot - Section A – Background Information (2/2)

Section 3 of 3

Section B: Constructing the common use cases of INTI Penang college students for the College Buddy System.

Description (optional)

How often do you use social media applications and messaging services to keep in contact with friends and coursemates while on campus?

1 2 3 4 5

Very rarely Very often

What type of device do you usually mainly use to connect to these social-focused applications?

☐ Android smartphones / tablets

☐ Apple smartphones / tablets

☐ Windows laptops

☐ Linux-based laptops

☐ Apple laptops

How would you rate the difficulty of socializing and making friends face-to-face compared to digital mediums?

1 2 3 4 5

Very easy Very difficult

Now it is time to personalize your profile. Looking at the vibrant digital world in its current form, provide some details on how to create the perfect profile for you to help you find other like-minded people.

What information or additional tidbits do you think would be important to have in your profile to help you express yourself better?

Long answer text

Figure 1.2.3a - Questionnaire Screenshot - Section B
- User Story Collection (1/2)

After getting your profile set up, you can now use the Find-a-Buddy system. The system is the primary way of matchmaking in the system. It allows you to be able to filter and send buddy requests to other INTI Penang students. Firstly, what would be the main purposes of you wanting to find a buddy? Select all that apply.

☐ Wanting a study buddy to bounce ideas off of and to group study in the library.

☐ Wishing you had somebody who you could discuss mental health challenges with.

☐ Wanting to find somebody to get a part-time job together or for volunteer work.

☐ Finding a coursemate to help you on coursework and assignments.

☐ Finding a friend to join a club or society in INTI Penang that you may be interested in.

☐ Other...

What kind of information would you like to be able sort, filter and choose a buddy by?

Long answer text

You have successfully managed to use the Find-a-Buddy feature and found a buddy! *Awesome!*

As a college student what are some potential features that the College Buddy system could have to help you decide on meetup location or make meeting up easier? If you have no suggestions, don't worry, you make skip this question and the next

Long answer text

(OPTIONAL) What other features do you think could make the College Buddy System a hit with college students?

Short answer text

This marks the **end of the questionnaire**, thank you so much for your constructive and insightful answers. Please take a moment confirm your entries and then hit Submit once you're done. :)

THANK YOU!

Figure 1.2.3b - Questionnaire Screenshot - Section B
- User Story Collection (2/2)

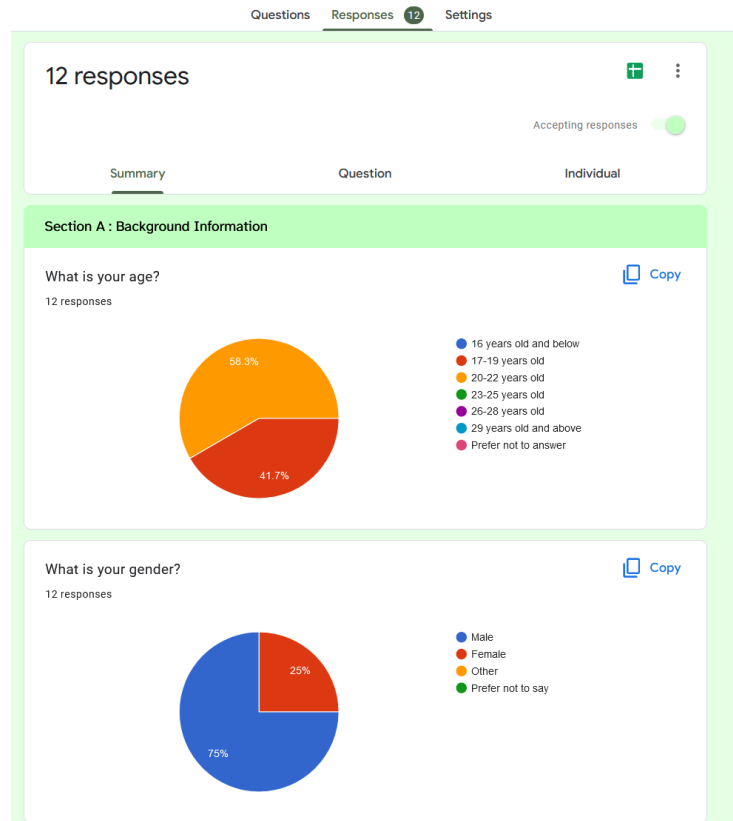


Figure 1.2.4a - Responses Screenshot - Section A (1/3)

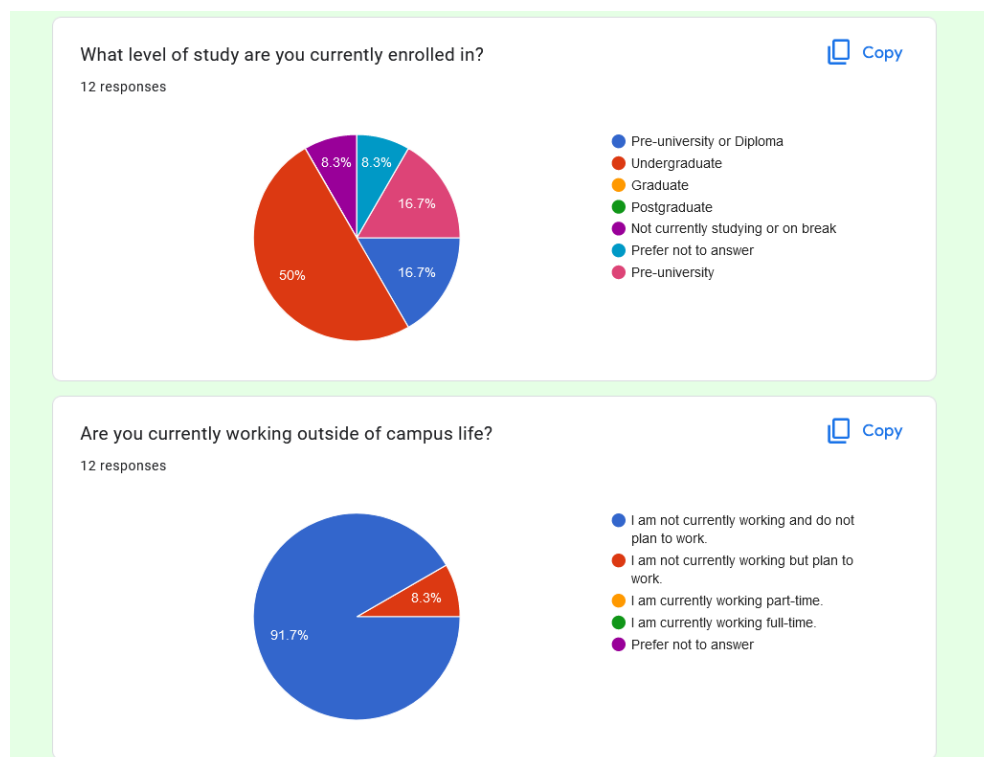


Figure 1.3.4b - Responses Screenshot - Section A (2/3)

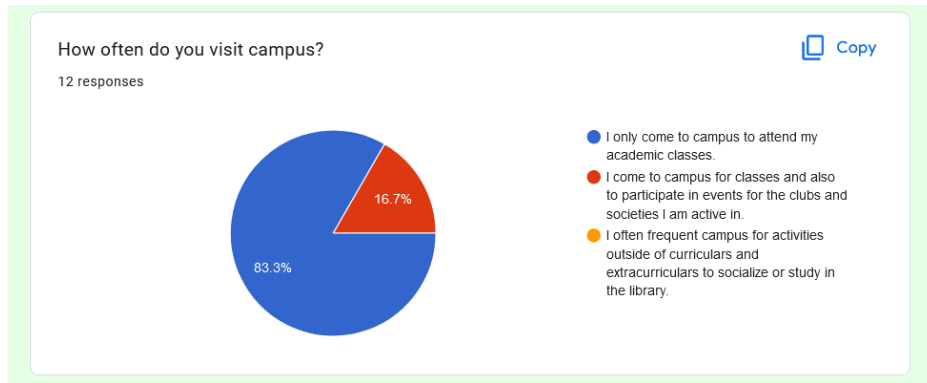


Figure 1.4.4c - Responses Screenshot - Section A (3/3)

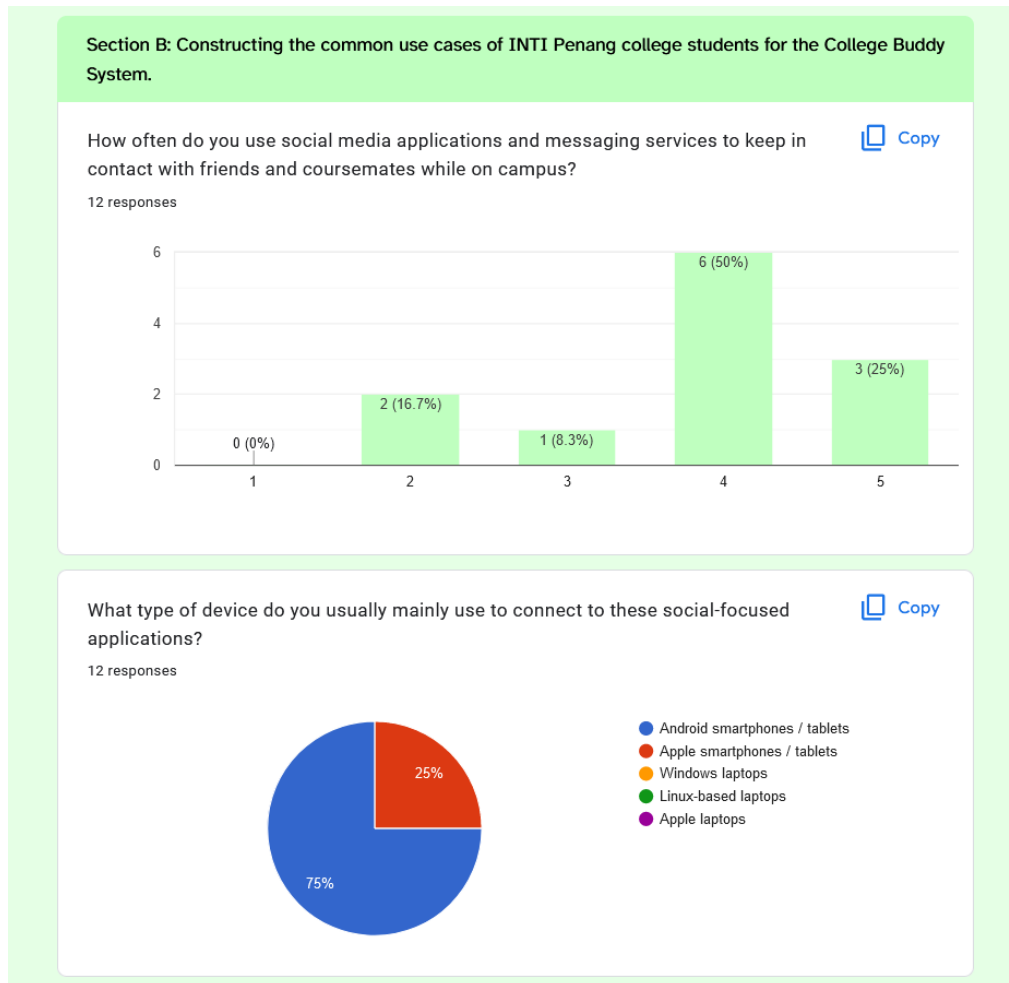
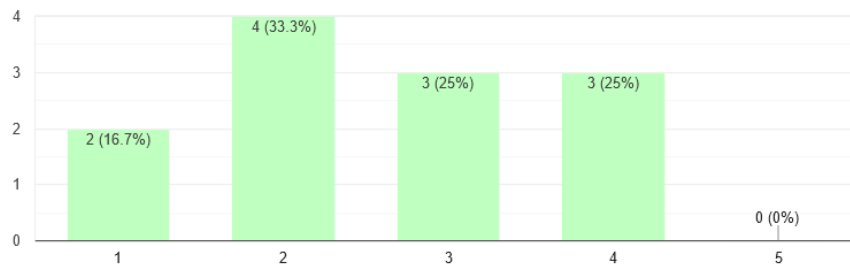


Figure 1.5.5a - Responses Screenshot - Section B - Q1, Q2 (1/6)

How would you rate the difficulty of socializing and making friends face-to-face compared to digital mediums?



12 responses



Now it is time to personalize your profile. Looking at the vibrant digital world in its current form, provide some details on how to create the perfect profile for you to help you find other like-minded people.

What information or additional tidbits do you think would be important to have in your profile to help you express yourself better?

12 responses

strengths and weaknesses

Hobbies/Interests

Hobbies/pastimes, class timetable

music playlist and hobby

hobby

upload profile picture, create about me

being able to have a nickname and have profile page to show off pictures

list of interests

upload customizable avatar

Figure 1.6.5b - Responses Screenshot - Section B – Q3, Q4 (2/6)

Now it is time to personalize your profile. Looking at the vibrant digital world in its current form, provide some details on how to create the perfect profile for you to help you find other like-minded people.

What information or additional tidbits do you think would be important to have in your profile to help you express yourself better?

12 responses

- music playlist and hobby
- hobby
- upload profile picture, create about me
- being able to have a nickname and have profile page to show off pictures
- list of interests
- upload customizable avatar
- Showcase my best friends in inti
- showing which days and hours i am available and which I am busy
- cann add each other as friend and then show who is my friends and all

Figure 1.7.5b - Responses Screenshot - Section B – Q4 (cont'd) (3/6)

After getting your profile set up, you can now use the Find-a-Buddy system. The system is the primary way of matchmaking in the system. It allows you to be able to filter and send buddy requests to other INTI Penang students. Firstly, what would be the main purposes of you wanting to find a buddy? Select all that apply.

12 responses

Purpose	Count	Percentage
Wanting a study buddy to bounce ideas off of and to grow...	9	75%
Wishing you had somebody who you could discuss mental health...	3	25%
Wanting to find somebody to get a part-time job together or for v...	2	16.7%
Finding a coursemate to help you on coursework and assign...	9	75%
Finding a friend to join a club or society in INTI Penang that you...	5	41.7%
Finding others with mutual interest to talk and hangout with...	1	8.3%

What kind of information would you like to be able sort, filter and choose a buddy by?

12 responses

- age
- grades, courses , interests (hobbies ..)
- Gender, field of study, class timetable
- gender and interest
- looking to join club or society
- personality type and class schedule
- by course
- gender, age, course, hobbies and favorite sports team
- Which society and club they are in

Figure 1.8.5c - Responses Screenshot - Section B – Q5, Q6 (4/6)

Which society and club they are in

relationship status

by hobbies and interest

You have successfully managed to use the Find-a-Buddy feature and found a buddy! Awesome!

As a college student what are some potential features that the College Buddy system could have to help you decide on meetup location or make meeting up easier? If you have no suggestions, don't worry, you make skip this question and the next

9 responses

-

maybe can add like pinpoint the location of a person when he/she wanted to. eg: someone in cafeteria and needed a buddy he/she can pinpoint the location

send confirmation to the guy so he can accept the details

can chat with the buddy

have chat system to help organize the meeting

view pictures of the place aiming to meet up at, include some info about the place

can choose to share contact information outside of college

chat system

have a chat system so we can send invitation for a main agenda + accept and decline

Figure 1.9.5c - Responses Screenshot - Section B – Q6 (cont'd) (5/6)

(OPTIONAL) What other features do you think could make the College Buddy System a hit with college students?

7 responses

minigames

linking with discord

connect with socmed

push notifications to remind about meetings

able to track meet up by date, and integrate with my phone's calendar

able to view contact information easily before meeting

back up messages remotely on cloud

Figure 1.10.5d - Responses Screenshot - Section B – Q7 (cont'd) (6/6)

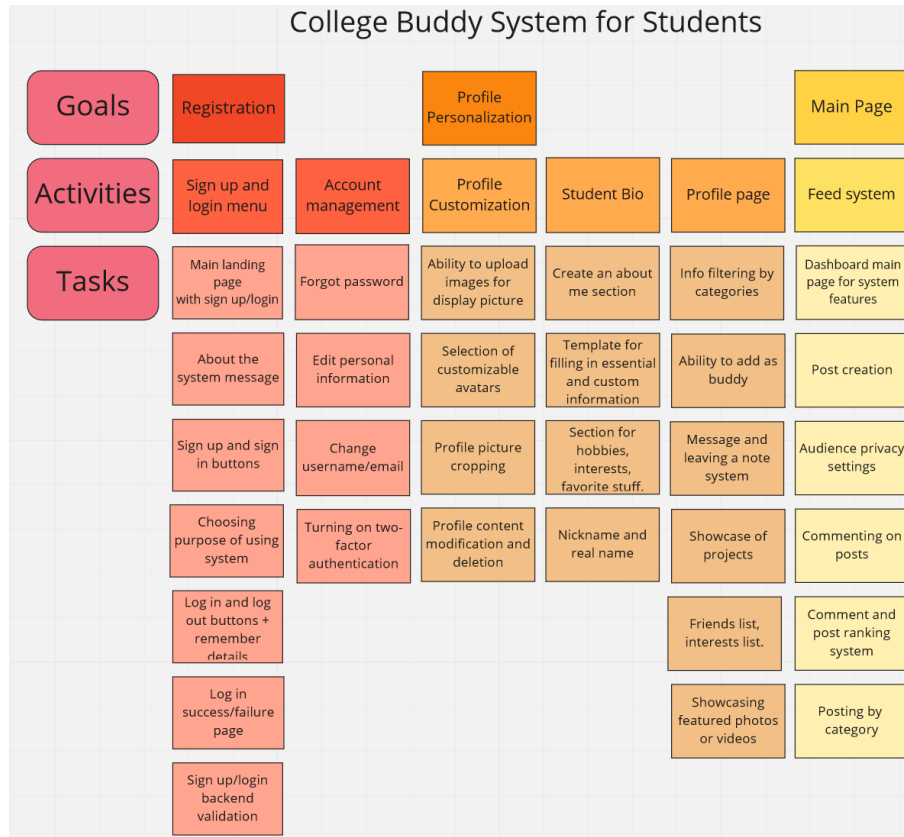


Figure 1.11.6a – Product Backlog for College Buddy System – (1/3)



Figure 1.12.6b – Product Backlog for College Buddy System – (2/3)

Meetup Organization					General Nice-to-Haves
Meetup Creation	Meetup sign-up	Meetup tracker			External Integrations
Meetup invitation	Confirmation of details	Sort options by date			Linking Discord
Choosing meetup session details	Meetup signing up preferences	Sort plans by category			Connection with other socmed platforms
Designation of category	Automatic opt-in	Push notifications			Backing up messages on cloud storage providers
Mutual approval of all parties	Validation of schedule	Event calendar			Changing preferred language
	Booking meeting rooms	Presentation of contact's information			System-wide theme preferences
	Setting reminder for meetup				

Figure 1.13.6c – Product Backlog for College Buddy System – (3/3)

1.3 – SUMMARY, ANALYSIS & REFLECTIONS

Overall, the process of visualizing and organizing work is fundamental to help understand the sets of feasible high-importance features to be created in the software development life cycle of the College Buddy System for Students. The creation of a product backlog aims to satisfy this process. The identifications of omissions in the original backlog made from collected user stories were carried out. This allows the fitting in of additional system components that will ultimately fully round out a robust system. The product backlog manages to pave the way for effective planning in terms of scheduling releases of valuable iterations.

In terms of analysis of the collected results, the questionnaire successfully let us profile the average archetype of a user, that is, in their goals, motivations and representative personal characteristics. After analysis, personas were able to be created. These personas consist of students the age of 20-22 years old, undergraduate students who seek to mainly find a friend to study with or acquire coursework and assignment help from.

In hindsight, a glaring improvement for this task is to incorporate more questions regarding specifications for the registration and login systems and main page. However commonly in software design, we often have to teeter on the balance of technical-completeness with ease of understanding by the user. In terms of target audience, college students are largely dispersed in their software technical know-how. Thus, it is important to take a few key lessons from the execution of the collection of data, including researching our market beforehand.

Marking Rubric for Continuous Assessment

	Marks Below 40%	Marks in the range 40 – 49%	Marks in the range 50 – 59%	Marks in the range 60 – 69%	Marks 70% and above
User Story Mapping (20 marks)	User Story Mapping not done or User Story copied/does not match the exact system.	User Story Mapping done at a minimum level and does not capture the important activities of the system.	User Story Mapping done and does capture several important activities of the system. The breakdown of the user story mapping can be improved.	User Story Mapping done and does capture several important activities of the system. The breakdown of the user story mapping is good and uses software that can assist that process (For example Miro compared to Ms. Word).	User Story Mapping done and does capture most important activities of the system. The breakdown of the user story mapping is excellent and uses software that can assist that process (For example Miro compared to Ms. Word).
Setting up a GitHub Repository (10 marks)	GitHub repository does not exist or cannot be accessed or the required files are not available at the time of access.	GitHub repository exist and some of the required files are not available at the time of access.	GitHub repository exist and most of the required files are available at the time of access. However the dates does not follow the required deadline.	GitHub repository exist and all of the required files are available at the time of access. However the dates for some files does not follow the required deadline.	GitHub repository exist and all of the required files are available at the time of access. The dates on the files follows the required deadline.
Creating a Class diagram and design pattern selection (30 marks)	The Class diagram does not represent the required solution (contains generic or non- related classes such as admin), the design pattern suggested is not suitable for the given	The Class diagram and design pattern represent the required solution but in a very general and incomplete way. Required classes in the design are not declared.	The Class diagram and design pattern represent the required solution in a partial way. A few required classes in the design are not declared.	The Class diagram and design pattern represent the required solution in a satisfactory way. Most required classes are declared.	The Class diagram and design pattern represent the required solution in an excellent way. All required classes are declared.

	problem.				
Creating a Prototype User Interface and Usability Testing (20 marks)	No prototype were available or the measurement for the usability testing is not clear.	The prototype cover minimalist and trivial design (such as login) and the measurements for the usability testing are not clear.	The prototype cover adequate design and several measurements for the usability testing are not clear.	The prototype cover good design and most measurements for the usability testing are clear.	The prototype cover excellent design and all measurements for the usability testing are clear.
Discuss the ethical issue related to the software (20 marks)	There is no discussion on the ethical issue or only the theories are pasted back for this component.	There is an attempt to discuss on the ethical issue but no critical analysis was done	There is an attempt to discuss on the ethical issue with some critical analysis was done	There is an attempt to discuss on the ethical issue with good critical analysis.	There is an attempt to discuss on the ethical issue with excellent critical analysis.