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:	
KEVIN GOH WING CHIEN	
CU Student ID Number:	
13446927	
Semester:	
1	
Session:	
August 2022	
Lecturer:	
Nadhrah Abdul Hadi (nadhrah.abdulhadi@newinti.edu.my)	
Module Code and Title:	
4067CEM Software Design	
Assignment No. / Title:	% of Module Mark:
Continuous Assessment	**50**
Hand out Date:	Due Date:
6th September 2022	**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): *KEVIN*

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 5 – Discuss the ethical issue related to the software (20 marks)

Discuss and do a critical analysis of your software in this areas, privacy concerns, intellectual property rights and effects on the society.

Output – A report in Word format, uploaded to GitHub.

Intro: As every convenience brings its own inconvenience along with it, the college buddy system is no exception. INTI students might face a trade-off between having to compromise their privacy and a more immersive experience of the application. There are four main concerns where the software might infringe upon and the students should be made aware of.

Personal Data Protection Act 2010 (PDPA)

PDPA refers to the act which regulates data processing related to commercial transactions. The purpose of this act is to protect the personal data of the data subject by mandating the data users to follow certain rules when processing such data. PDPA was passed in June 2010 and came into force on 15th of November in the year 2013. For regulated businesses such as the banking industry, PDPA is taken more seriously and a hefty fine will be levied for any breach in the law. Data users are to comply with the seven personal data principles under PDPA. Chiefly among them are the Disclosure Principle, General Principle and Security Principle. These principles require the data user to obtain the consent of the data subject in order to process the data as well as disclose the subject's data to another party. Data subjects are also urged to take any practical steps in order to safeguard their personal data from any loss and misuse.

One of the main concerns of the system is a breach in the student's privacy. As this software requires several personal information of the students,this could happen when a staff or administrator of the College Buddy System is collecting the student's data and selling it to a third party. As a consequence, pragmatic steps shall be taken to prevent such information leakage and misuse of personal information for all users of the application.

Nevertheless the possibility of the misuse of such data has been largely mitigated In Malaysia as the personal data of its citizens are protected by the Personal Data Protection Act 2010 (PDPA). Failure to comply with the seven principles is punishable by a fine of maximum RM300,000 and/or a maximum of two years of imprisonment. Undoubtedly selling personal data without the consent of data

users is unethical and this will build a strong mistrust in the society.

Penal Code

Despite not having a provision that is used to specifically address online identity theft, the Section 416 of Penal Code comes very close to it. Penal code is a law that codifies the majority of criminal offences in Malaysia. Section 416 of the penal code is specifically used to address the offence of identity theft. This refers to either impersonating as an imaginary person or pretending as someone else. In addition to that, Section 509 of the Penal Code also addresses the issue of online harassment. However this particular clause is more focused on defending the honour and modesty of woman from obscene insults or sexual harassment

With the advancement of technology, a steep increase in cyber crime can be observed especially during the pandemic. This particular software is most vulnerable to the crime of identity theft and happens when a person cheats by impersonating as someone else. Lawbreakers would typically gather the information of its victim and pose as the victim for the purpose of fraud or scams. If such issue were to be brushed aside, the software will be a den for fraudsters which will in turn increase the amount of cyber crimes in the society. As this software contains the information of the students, there may be a possibility for fraudsters to scam the families of the victim. Socializing always carries a risk of meeting creeps or perverts, and the software is no exception. The software also carries the possibility that creeps or perverts will use it to sexually harass woman

Section 416 of the Penal Code addresses the crime of identity theft where the assailant may be punished to a maximum of 7 years and/or a fine. It should also be noted that the penalty is not mutually exclusive and can also be held in conjunction with other acts such as the Communications and Multimedia Act 1998. The violation of Section 509 of Penal Code will require the offender to serve of a maximum of 5 year sentence and/or a hefty fine.

Communications and Multimedia Act 1998.

Communications and Multimedia Act 1998 was first enacted in 1997 as there was a need to regulate the increasingly convergent communications and multimedia industry. Besides the Section 416 of Penal Code discussed above, Section 232 and Section 236 of CMA

also prohibits users from the fraudulent use of network facilities and services. It should be noted that Section 233 of CMA criminalises online material which are menacing and offensive in character.

Cyber bullying and online harassment has also been on the rise in recent years. Cyber bullying refers to the use of electronic communications to insult or intimidate a person online. This software is susceptible to cyber bullying as the system was unable to determine who is a bully prior to any incident. This is the same case for people who will use it fraudulently. Fraudsters may take advantage of the College Buddy System to scam the innocent students out of their money. As such crime can only be curbed to a certain extent with monitoring and hence users should also be vigilant when using the software.

The punishments for violating Section 233 of CMA are a fine of RM50,000 and/or maximum of one year jail sentence. While that may deter some bullies from committing such crime, the college buddy system will also do its part in preventing cyber bullying from occuring in the software itself as it is detrimental to the society.

Copyright Act 1987

This law specifically addresses the copyright issue in Malaysia and came into force in 1987. The law has extended the types of literary works to include digital and multimedia works. This purpose of the enactment of this law is to encourage creativity. Imitating and copying other author's work is illegal and unethical because this will only discourage creative works in the community.

The college buddy system has exercised great caution in not violating the rules. This is due to there are many similar applications in the market, such as Facebook being the more complicated and general in the spectrum of the social networking software while Tinder and The Project being the more niche category.

The penalty for copyright infringement is a maximum of RM20,000 and/or imprisonment for a maximum term of 5 years. Source code for the college buddy system will be reviewed to ensure that there are no redundant codes which are similar to other counterpart software.

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 problem.	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.

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.