Proposal

For

Second Year Project

Bachelor of Science in Information Technology

Communication App

Submitted by

KINZANG DORJI (12190061)

Gyalpozhing College of Information Technology

Read carefully before filling the form.

1. Please do not alter the layout of the application form. Information must be filled in the spaces provided, under set format.

2. Guidance notes in various fields should not be deleted.

3. Required information should be duly filled in the specified fields.

4. Required heads/fields which are not relevant to the project should be marked **N/A** (Not Applicable) or left blank and should not be deleted.

Gyalpozhing College of Information Technology

Guidelines and Forms

Submission Procedure

Duly filled proposal forms completed in all respects should be submitted in form of soft copy and a hard copy to project guide and project coordinator. On receipt of the applications the proposals will be evaluated by reviewer panel and proposal would then be defended by student groups. The project group may need to revise the proposal in light of the evaluator's recommendations.

For further information, please contact:

Project Coordinator

Jigme Wangmo
jigmewangmo.gcit@rub.edu.bt

Tshering Lhamo
tsheringlhamo.gcit@rub.edu.bt

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Application for Final Year Project

1. Project Identification

<table>
<tr><td colspan="3">A. Reference Number:

(for office use only)</td></tr>
<tr><td colspan="3">B. Project Title: Communication App

</td></tr>
<tr><td colspan="3">C. Project Internal Guide:</td></tr>
<tr><td>Name:</td><td colspan="2">Ms. Sonam Wangmo</td></tr>
<tr><td>Designation:</td><td colspan="2">Lecturer</td></tr>
<tr><td>Organization:</td><td colspan="2">RUB</td></tr>
<tr><td>Mobile # :</td><td>Tel. # :</td></tr>
<tr><td>Email:</td><td colspan="2"></td></tr>
<tr><td colspan="3">C1. Project External Guide:</td></tr>
<tr><td>Name:</td><td colspan="2">NA</td></tr>
<tr><td>Designation:</td><td colspan="2"></td></tr>
<tr><td>Organization:</td><td colspan="2"></td></tr>
<tr><td>Mobile # :</td><td>Tel. # :</td></tr>
<tr><td>Email:</td><td colspan="2"></td></tr>
<tr><td colspan="3">C2. Student Group Lead:</td></tr>
<tr><td>Name:</td><td colspan="2">Kinzang Dorji</td></tr>
<tr><td>Roll No:</td><td colspan="2">12190061</td></tr>
<tr><td>Department:</td><td colspan="2">Bachelor of Science in Information Technology</td></tr>
<tr><td>Mobile # :</td><td>17904211</td><td>Tel. # :</td></tr>
<tr><td>Email:</td><td colspan="2">12190061.gcit@rub.edu.bt</td></tr>
</table>

D. **Organizations Involved in the Project:**

(Please identify all affiliated organizations collaborating in the project, and describe their role/contribution to the project.)

D1. **Industrial Organizations:**

#	Organization Name	Role / Contribution
	NA	

D2. **Academic Organizations:**

#	Organization Name	Role / Contribution
	Gyalpozhing College of Information Technology	Providing Guides and Resources

D3. **Funding Organizations:**

#	Organization Name	Role / Contribution
	NA	

E. **Key Words:**

(Please provide a maximum of 5 key words that describe the project. The key words will be incorporated in our database.)

1. Communication.
2. Information.
3. Application.
4. Android Application.
5. Mobile Application.

F. Research and Development Theme:

The accessibility to information has risen exponentially ever since the internet and gadgets have evolved. One had to travel few hours/minutes to reach the important information to be shared in the past. Whereas in this smartphone generation, all we need is a stable internet connection and a good interface in order to have a communication. Mobile applications provide the flexibility and portability in means of communication. So, with the help of this mobile application, it will help share information and communication will happen at any time.

G. Project Status:

(Please mark ☑)

☑   New   Modification to previous Project

Extension of existing project

H. Project Duration:

Expected Starting Date:	3 March, 2021
Planned Duration in months:	6 Months

2. Scope, Introduction and Background of the Project

A. Scope of the Project:

System Scope

1. **User Registration**
   User can register to access this application.

2. **User Profile**
   User can update their profile and information.

3. **Post**
   User can post the information that can be accessed by other person.

4. **Notification**
   This App will provide notification for new post and updates.

5. **Log Out**
   User can logout after using it.

User Scope

Gyalpozhing College of Information Technology.

B. Introduction (Project Background and Literature Review, Current State of the Art):

(Detailed summary of what all has been done internationally in the proposed area quoting references and bibliography. Please note that this section demonstrates the depth of knowledge of the project team and builds the confidence of the evaluators about capability of the team in achieving the stated objectives.)
(Please describe the current state of the art specific to this research topic.)

Introduction (Project Background)

The rise in application of mobile and computer technologies in daily life contributed to a fast development and changes in every aspect. The statistics estimates that global mobile data traffic will increase nearly sevenfold between 2017 and 2022. According to April 2019 data, the global mobile population amounted to 4 billion unique users. As of the first quarter of 2019, the two most popular app stores, google play and apple's App store, had a total number of 2.1 and 1.8 million available apps and the mobile apps are increasingly popular in everyday activities. From many other sectors affected by the new information and communication technologies, mobile apps are improving the education today. Communication is the activity of conveying information. The word communication has been derived from the Latin word 'communis', meaning to share. It basically involves a sender, a message and a receiver. And also communication is giving, receiving or exchanging ideas, data, information, signals or messages through appropriate media, enabling individuals or groups to persuade, to seek information, to give information or to express emotions.

Nowadays, mobile devices have become a way of life for learners especially in higher education. Computers are now replaced by compact smart phones that can be fit into pocket and can be carried anywhere. With development of Android applications, everyone chooses to have an effective way of communication through different types interfaces unlike ancient days.

Communication is usually a two-way process. It is not just giving information or signaling someone; it also involves the comprehension of the information or the signal by the receiver. When the act of giving information or sending message reaches the recipient and gets comprehended by him/her and the receiver sends feedback as desired by the sender, the process of communication is said to be complete. Communication, therefore, involves more than one person.

Therefore, communication is a continuous and dynamic process involving more than one person. It is a cyclic process denoting continuous flow of information. It essentially involves sender, message and recipient. The sender conceives ideas and encodes them into suitable medium (facts, figures, pictures), sends them through appropriate channel (email, phone, speech) to the recipient. The recipient decodes the message, understands it and encodes feedback and sends it to the sender. The process continues.

Literature Review:

Feasibility Study of Developing Chat Application in Bhutan

The online chat system is an efficient means of communication as it provides information that is convenient, easy and cheaper for the users. It helps in boosting online sales, ensures higher customer satisfaction and cost reduction. In today's world, smart phone is redefining the market place worldwide. Since 2010 volume of purchases of wireless device had taken place and many of the users do not visit website from laptop as their daily routine.

In this 21st century, mobile technology is the latest technology and in the past decade, the growth that it has received is tremendous both in terms of varieties of mobile devices and number of people using them. The main features of these mobile devices are it can be enabled to use a variety of communication technologies such as Wi-Fi, Bluetooth and third generation (3G) as well as fourth generation (4G). These features further enhance the users to shift from personal laptop to a wireless smartphone.

In Bhutan, since there is no chat app developed in our own country, chat apps from outside are very famous with WeChat leading the list due to its free and abundant services. But in the past few years issues about privacy and security have been increasingly raised. Many WeChat users' in our country have had their accounts hacked leading to threat to personal information. It is reported on social media sites that hackers breach into WeChat accounts and share obscene videos and photographs.

It is also free messaging and calling application with its server based in China. Since the servers for it is based outside the country, the usage of such application leaves the information of the user vulnerable to threats. Pema Dendup, an officer with the Bhutan Computer Incident Response Team said to BBS that "WeChat is hosted in China and they have totally different sets of cyber law. So we don't have much control over it".

As many people uses these apps even for official purposes, sharing of sensitive information via these apps can also lead to threat to the National security. According to kuensel it is claimed that many users have had their accounts hacked. Thus leading to rise in concern over how private and secure the app is. Thus, the need to have a chat app with its server located in our own country and with proper security and privacy has become very essential.

Therefore, this research paper concludes that chat applications are becoming a popular means of communication all around the globe. Thus there is a need to have a chat application developed in our own country. But before developing it is necessary to understand the market share willing and wanting to use the application that is a feasibility study must be carried out. Hence this paper describes the feasibility for developing a chat application in our own country.

C. Challenges:

(Please describe the challenges, specific to this research topic, currently being faced internationally.)

Some of the challenges that could face when developing the app are:
- Lack of Android Studio App development skills.
- Since my scope is limited within GCIT there will be less user.
- Reduced personal interaction.

D. Motivation and Need:

(Please describe the motivation and need for this work.)

Bhutan has seen its technological advancement in the past few decades while as of today, it is seen that various social media apps like WhatsApp, Telegram, Messenger, WeChat and Facebook are used to connect people living at different places. But one of the major drawbacks of these apps is that they entail a lot of distraction from other posts and messages. So there is a need of separate application to have an effective communication as well as to share important information. The main motive behind designing this communication app is to share the important agenda within people residing in Gyalpozhing. Through this app a user can post important and necessary information that can be viewed by another user.

3. Aim and Objectives of the Project

AIM: To develop an Android Application that provides a platform for both students and lecturer where they can have an effective communication.
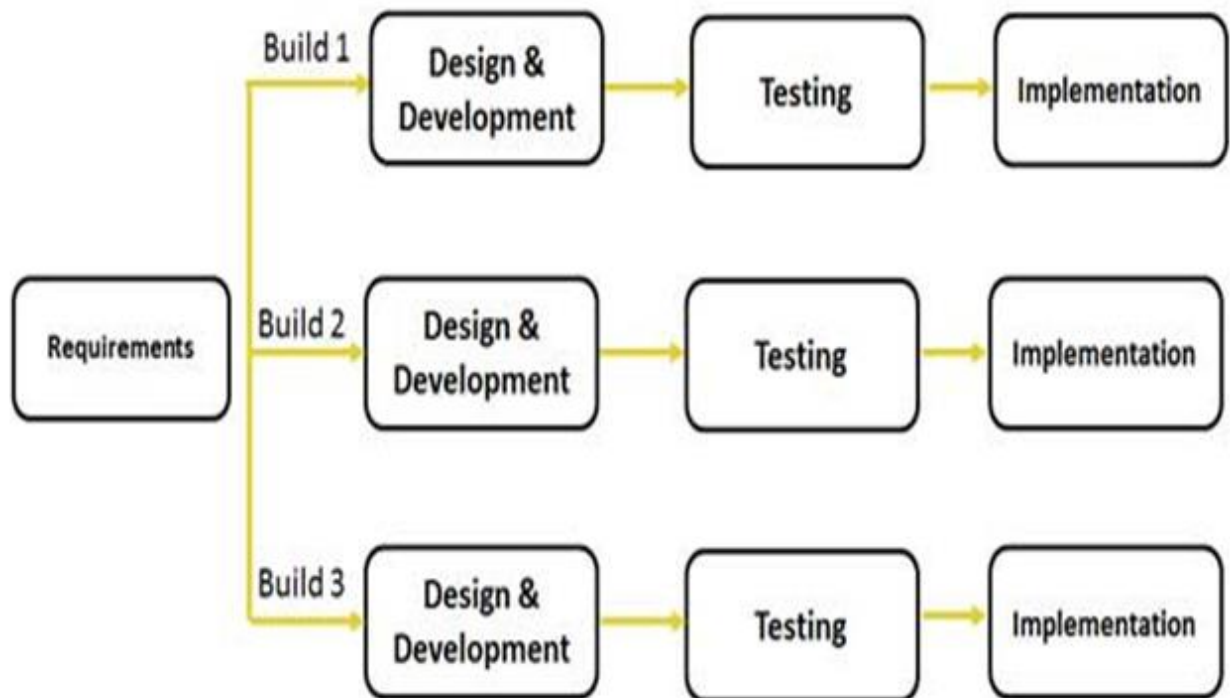
OBJECTIVES:
- Help both students and lecturer to have an effective communication.
- Allows to share important information within campus of Gyalpozhing College of Information Technology.
- It will connect the people residing within GCIT campus.

4. Methodology

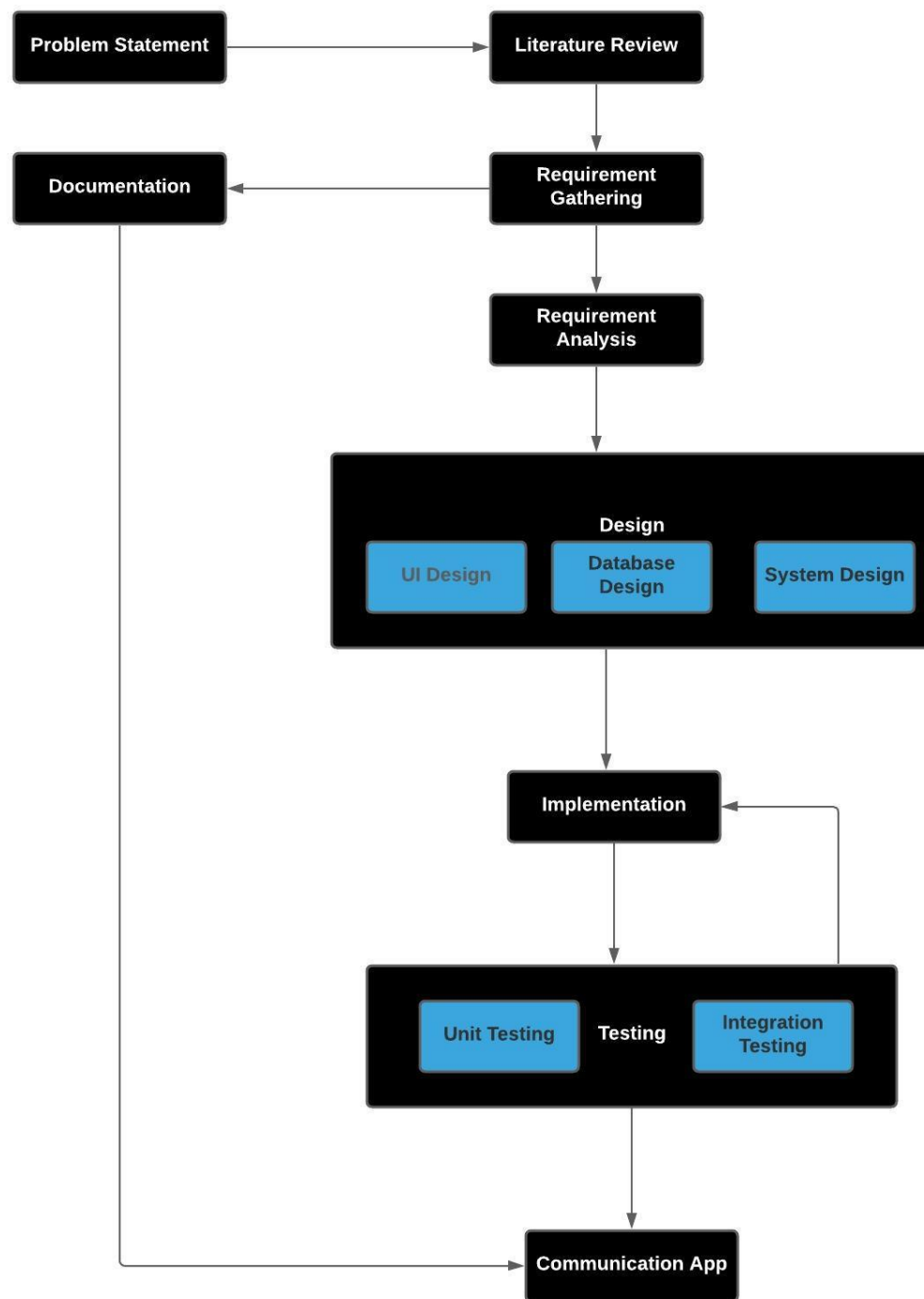### A. Development / Research / Test Methodology:

(Please describe the technical details and justification of your development and research plan and test plan and testing strategies. Identify specialized equipment, facilities and infrastructure which are required for the project and their utilization plan. The block diagrams, system flow charts, high level algorithm details etc. have to be provided in this section. Also, describe the overall methodology to be used for the particular research topic)

In the **Iterative model**, iterative process starts with a simple implementation of a small set of the software requirements and iteratively enhances the evolving versions until the complete system is implemented and ready to be deployed. An iterative model does not attempt to start with a full specification of requirements. Instead, development begins by specifying and implementing just part of the software, which is then reviewed to identify further requirements. This process is then repeated, producing a new version of the software at the end of each iteration of the model.

Iterative and Incremental development is a combination of both iterative design or iterative method and incremental build model for development. "During software development, more than one iteration of the software development cycle may be in progress at the same time." This process may be described as an "evolutionary acquisition" or "incremental build" approach."

In this incremental model, the whole requirement is divided into various builds. During each iteration, the development module goes through the requirements, design, implementation and testing phases. Each subsequent release of the module adds function to the previous release. The process continues till the complete system is ready as per the requirement.

The above diagram shows the overall method to be used in my project. Firstly, I have begun by gathering information of how this application can be used in a richer manner and identifying how students share the important information through this application other than other social media platforms.

Secondly, I started with a literature review where I reviewed the papers related to the issues, went through some research papers and currently implemented applications and projects to learn more about my topic. After reviewing the literature, I will gather data on how my system can operate and what features I can add to my application.

After analyzing the requirement gathering, I will proceed to the design stage where the database, app icon, user interface and system design will be designed. The next stage consists of the development of software, where different app features will be created. In order to ensure the functionality of each part, each feature will be checked through the testing process during development.

And in my application development, the creation of the app will be based on the method of iterative model for efficiency and effectiveness. Moreover, in testing phase I will use two testing methods that are: unit testing and integration testing, where unit testing for each phase and integration testing to ensure proper functioning of the application as a whole.

B. Project Team:

Title / Position	Number
Project Internal Guide	
Project External Guide	
Student Team Members	
Others (please specify)	
Add more rows if required	

C. **Project Activities:**

(Please list and describe the main project activities, including those associated with the transfer of the research results to customers/beneficiaries. The timing and duration of research activities are to be shown in the Gantt chart in Section 8.)

Following are the main activities for my project.

1) Literature Review.

2) Planning.

3) Do requirement gather and analysis.

4) Design.

5) Develop feature: User Registration and User Profile.

6) Develop feature: Post.

7) Develop feature: Notification.

8) Final Testing.

D. **Key Milestones and Deliverables:**

(Please list and describe the principal milestones and associated deliverables of the project. A key milestone is reached when a significant phase in the project is concluded, e.g. selection and simulation of algorithms, completion of architectural design and design documents, commissioning of equipment, completion of test, etc.) The timing of milestones is also to be shown in the Gantt chart in Section 8.

No.	Elapsed time from start (in months) of the project	Milestone	Deliverables
	-	*Commencement of the project*	
1.	14/2/2021	Topic Selection	Selection of individual android app development topic
2.	14/3/2021	Proposal Report/Submission	Individual proposal submission
3.	18/3/2021	Requirement gather and specification	Requirements should be gathered
4.	24/3/2021	Requirement Analysis	Analysis should be done
5.	29/3/2021	Design of UI	UI design
6.	2/4/2021	Feature development: User Registration	Second prototype
7.	17/4/2021	Feature development: User Profile	Third prototype
8.	28/4/2021	Feature development: Post	Forth prototype
9.	10/5/2021	Feature development: Notification	Fifth prototype
10.	22/5/2021	Feature development: Logout	Sixth prototype
11.	27/5/2021	Final testing	Seventh prototype
12.	1/6/2021	Final Documentation	Final Application

(Please add more rows if required.)

5. Benefits of the Project (Expected output/outcomes):

Benefits of the project are as follows:

Output/Outcomes
- Provide the knowledge to learn Android Application development.
- Provide a platform to have an effective communication.
- Enable to share information as per the will of the user.

6. Risk Analysis/Feasibility

A. Risks of the Project:

(Please describe the factors that may cause delays in, or prevent implementation of, the project as proposed above; estimate the degree of risk.)

(Please mark ☑ where applicable)	Low	Medium	High
Technical risk		☑	
Timing risk		☑	

Technical risk

- The continuous release of the newer android version may affect the compatibility of the users having older versions of android.
- Chances of losing the data on the project due to hardware or software failures of the systems of the team members.
- The app after successive addition of the features might fail during the testing.
- Developers tend to rush their design process in order to proceed to the next activity resulting in a less user friendly application.

Timing risk

- Not being able to achieve the milestone on the intended date due to college programs coinciding with the project schedules or due to medical reasons or personal reasons involving the team members.
- The estimated time for a particular activity may not be as planned requiring much more time and effort.

A1. Comments(Describe the risk):

Risk Mitigation

Technical risk

- The app should be developed with backwards compatibility which allows users with older versions of the android OS to use the app.
- The data on the project will be backed up and moreover all the team members will have the copy of the project source code and documents.
- It will undergo integration testing for correct functioning to prevent such occurrences.
- Only the core features that are mentioned will be developed avoiding unnecessary features.

Timing risk

- I will follow the time schedule very strictly without any interference.
- The activity requiring more time may affect the schedule but to prevent this from happening other activity with less priority will be done with a much shorter duration to fit in the schedule.

7. Project Approval Certificate

(Approval of Project Proposal by the Competent Authority (Department Chairman) and Project Review Team is mandatory before the start of project execution.)

Project Review Team:

SI #	Name	Signature

(Please add more rows if required.)

Project Coordinator

Name:

Designation:

Email:

Date: Signature:

Competent Authority – Head of Department

Name:

Designation:
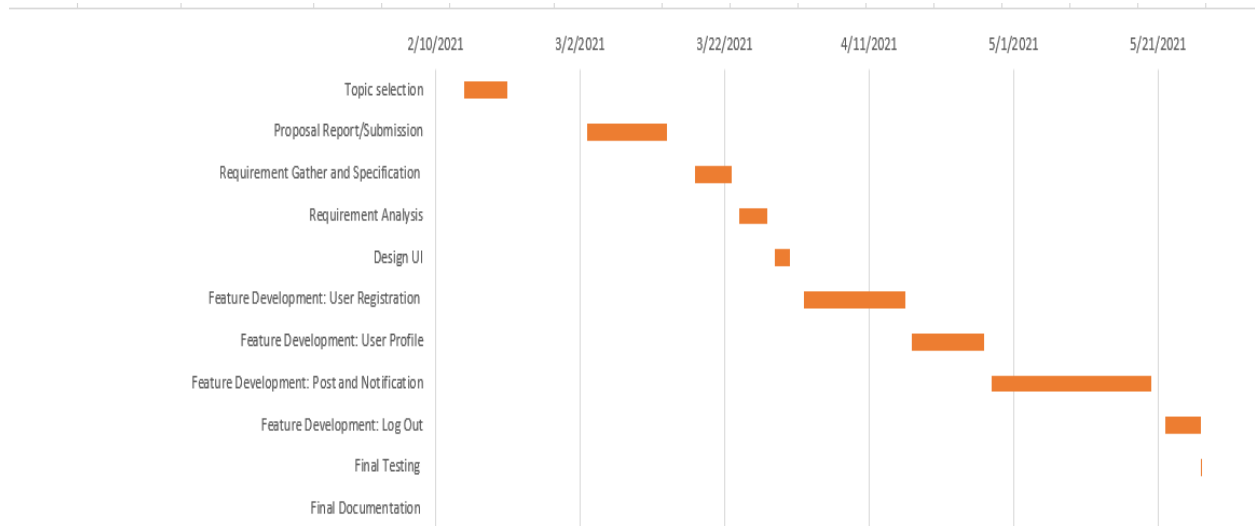
Email:

Date: Signature

& stamp:

8. Reviewers Panel Comments

10. Project Schedule / Milestone Chart /Work plan

(Project schedule using MS-Project (or similar tools) with all tasks, deliverables, milestones, clearly indicated are preferred. Task should be measured in terms of hours)

ID	Task Name	Start Date	Finished Date	Days To Complete
1	Topic selection	2/14/2021	2/20/2021	6
2	Proposal Report/Submission	3/3/2021	3/14/2021	11
4	Requirement Gather and Specification	3/18/2021	3/23/2021	5
5	Requirement Analysis	3/24/2021	3/28/2021	4
6	Design UI	3/29/2021	3/31/2021	2
7	Feature Development: User Registration	4/2/2021	4/16/2021	14
8	Feature Development: User Profile	4/17/2021	4/27/2021	10
9	Feature Development: Post and Notification	4/28/2021	5/20/2021	22
10	Feature Development: Log Out	5/22/2021	5/27/2021	5
11	Final Testing	5/27/2021	5/30/2021	3
12	Final Documentation	5/30/2021	6/3/2021	4

13. Report Writing Guidelines

(Project report will be written under the specified guidelines.)

Bibliography

Deki, S. (2018, March 03). *Feasibility Study of Developing Chat Application in Bhutan.*
Retrieved March 11, 2021, from
https://www.researchgate.net/publication/329317827_Feasibility_Study_of_Developing_C
hat_Application_in_Bhutan

Samten Dolka. (2017, June 24). *Some WeChat users raise privacy concerns.*
Retrieved august 17, 2017, from BBS:
http://www.bbs.bt/news/?p=74871
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