Proposal

For

Mini Project

Bachelor of Science in Information Technology

GCIT Note

Submitted by

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Gyalpozhing College of Information Technology

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.

Bachelors of Science in Information Technology

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
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Bachelors of Science in Information Technology

Gyalpozhing College of Information Technology

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Gyalpozhing College of Information Technology

Application for Final Year Project

1. Project Identification

A. Reference Number: (for office use only)	
B. Project Title: GCIT Note	

C. Project Internal Guide:

Name:	
Designation:	
Organization:	
Mobile # :	Tel. # :
Email:	

C1. Project External Guide:

Name:	**NA**
Designation:	
Organization:	
Mobile # :	Tel. # :
Email:	

C2. Student Group Lead:

Name:	

Roll No:	
Department:	
Mobile # :	Tel. # :
Email:	

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

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.)

Android Studio, IndexedDB, computerized and notes.

F. Research and Development Theme:

The theme of my project is to develop a platform where all the teachers and students can use my proposed application to access the notes of every semester. The proposed application would store each semester's note for future reference and for easy and fast access to the notes. This will ease the work of teachers and students as they don't have to visit vle or open their desktop to read the notes. They can simply turn their phones into an effective tool to refer the notes of every module. All the tutors and students will be able to access the notes of all the modules of each semester.

G. Project Status:

(Please mark ☑)

☑ New

☐ Modification to previous Project

☐ Extension of existing project

H. Project Duration:

Expected Starting Date:	20-02-2021
Planned Duration in months:	5 months

2. Scope, Introduction and Background of the Project

A. Scope of the Project:

User Scope

The scope of my project is limited to the students and tutors of Gyalpozhing College of Information Technology. Sometimes the students and staffs have to access the notes when there is no internet connection and when they want to access the notes of their previous semesters or notes of their upcoming semesters. Such problems have no proper solutions as of now. Therefore, this proposed application would transform the way the students and staffs of GCIT accesses the notes of all the semesters.

Limitations

- The proposed application does not include a larger scope which will make my application needed only inside GCIT.

- The proposed application includes only few features. The users cannot add note of their choice. The users would be able to access the notes which has been uploaded.

System Scope

The proposed application would be an android based application which will have the following features:

1. View - The users can view all the notes that are available in the system/application.

2. Favourites – Users can add the important notes or notes that need to be referred frequently in the favourites section.

3. Search – Users can search for the particular notes.

4. Category – the notes are stored based on different categories.

5. Rename – The users can rename the notes once it has been added to favourites section so that they won't be confused with the notes.

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.)

Background

According to data collected by statista: almost 4.66 billion people were active internet users as of October 2020, encompassing 59 percent (%) of the world population. The internet is one of the most transformative and fast growing technologies across the globe. With the development taking place across the globe, the number of internet and mobile users are increasing yearly in Bhutan. As with the increasing popularity of mobile among the people all around the world, the mobile application is also very popular field in which one wants to get themselves indulge. The business market for android is also a booming one with lots of opportunities. With a user base that continues growing every day, Android also has a built-in open marketplace for distributing new apps.

In this developing world everyone prefers to do any kind of work easily and smartly. The easiness and smartness of these things come along with invention of new digital technologies and its' applications. The digital technologies are mostly familiar with the young youths especially the university and school students.

In the universities, tutors provide notes in the form of PDF or Word. The students have to keep the notes provided by the tutors either in their desktops or they have to write it down in their notebook. This practice seems very old fashioned as it consumes time and money (for internet connection/pc). Students cannot access the notes of their seniors or juniors directly. They have to ask their seniors/juniors to get the notes. The tutors will not be able to access the notes of other tutors if they want to refer their notes.

The proposed application will eradicate this manual system of securing the notes for both students and tutors. The proposed application will be helpful for both the tutors and

students as they will be able to access all the notes even without internet connection. Therefore, it will be beneficial for all the students and tutors of Gyalpozhing College of Information Technology.

Literature Review:

Followings are some of the papers and applications that I referred as a reference:

1. E-Library Management System – It is a project report which was written by a group of students (Anindita Mridha, Dibyajyoti Paul, Jewel Dutta, Subhojyoti Mondal and Susmita Giri). The main aim of their project is to provide the students and tutors to easily access the books that are available in their Library.

Some of the features of their applications are:

I.   User Login.
II.   Registration of new users.
III.   Registration of new books.
IV.   Search Book

Some of the hardware and software used for their application are:

Windows 7 operating system, MYSQL database, Java and XML.

Their project went through two levels of testing; Unit testing and Integration testing. Their application provides a computerized platform that is beneficial for both the students and staffs.

2. EbookReader

This is an application which will allow the users to read their favorite books on the go. It has many features which makes this application more user friendly.

Some of the features in this application are:

1. Reading now – we can directly go to the page that we are reading right now.
2. All books – it enables the users to see all the books that are in the system.
3. Favorite – users can add book of their choice to favorite for future reference.
4. Recent read – users can see the recently read book.

5. Rating/feedback – users can give ratings/feedbacks to the application.

6. Search – users can search for the book of their choice.

This application is user friendly and it has been designed with attractive designs (UI). Users can directly access the books that are available without having to login to the system as it is offline based application.

Current State of Art

Currently there is no such computerized system in GCIT. Although there is VLE where tutors can upload the notes and students can either download to see the notes. To download and access the notes, there should be internet connection. Sometime it happens that students and tutors want to access the notes instantly but they cannot access it without internet connection. When the students want to access the notes of their previous semesters or when they want to access the notes of upcoming semesters, they have to either get it from their friends or tutors. These kind of problems has been faced most of the time by the students and tutors of GCIT. It is exhausting and time consuming for both the tutors and students of GCIT.

Therefore, the proposed application will focus on dealing with these problems. It will digitalize the way tutors and students access their notes. It will ease the work of both tutors and students as it will turn their phone into an effective tool where they can access notes of all semesters' modules. The proposed application will be beneficial for all the tutors and students of GCIT.

C. **Challenges:**

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

Followings are the challenges that I might face during the development of this application:

i.   Performance

It would be challenging for me to make the application responsive and smooth.

ii. Security

It will be tough for me to secure all the data including the source code.

iii. Compatibility

It would be challenging for me to develop an application that would run on any platform versions.

iv. System Failures

As I am going to develop an android based application, there is a high risk of our system getting crashed.

D. **Motivation and Need:**

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

In today's world, everyone uses modern technologies to do any kinds of work as it makes the work easier. Everyone is busy with their own work and people tend to find the easier way to complete their task. For now, the students and tutors have to visit VLE for the tutor's note which requires internet connection.

There is a need of such application in GCIT because we are not able to access all the notes of each semester which has been uploaded in the VLE by concerned tutor. Only the tutor who uploaded the note and students who studied that module can see these

notes. If other tutors or students want to refer the note, then they will have to do it manually or through VLE.

This existing system can be replaced by a computerized or digitalized platform where the users don't have to login or visit other people for notes. They can use my application to access the notes using your phone.

3. Aim and Objectives of the Project

(Please write the actual aim of your project. Also, describe the measurable objectives of the project and define the expected results. Use results-oriented wording with verbs such as 'to develop..', 'to implement..', 'to research..', 'to determine..', 'to identify..' The objectives should not be statements and should not include explanations and benefits. The objective should actually specify in simple words what the project team intends to achieve (something concrete and measurable/ deliverable). Fill only those objectives that are applicable to the proposed project.)

Aim: The main aim of my project is to develop an offline based application through which the tutors and students of Gyalpozhing College of Information Technology can access the notes of all the semesters' module. The note here includes only the notes that are provided by the concerned module tutor.

Objectives

Objectives of my project:

- To provide a platform for the users to access the notes of all the modules (all semesters' module) without having to connect to internet.

- To make it easier for the students and tutors to access the notes.

- These notes can be used as a reference for both the tutors and students.

- To transform the phone into an effective tool which can be used as your notebook.

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)

The general methodology that will be used to develop the proposed application is Agile Methodology.
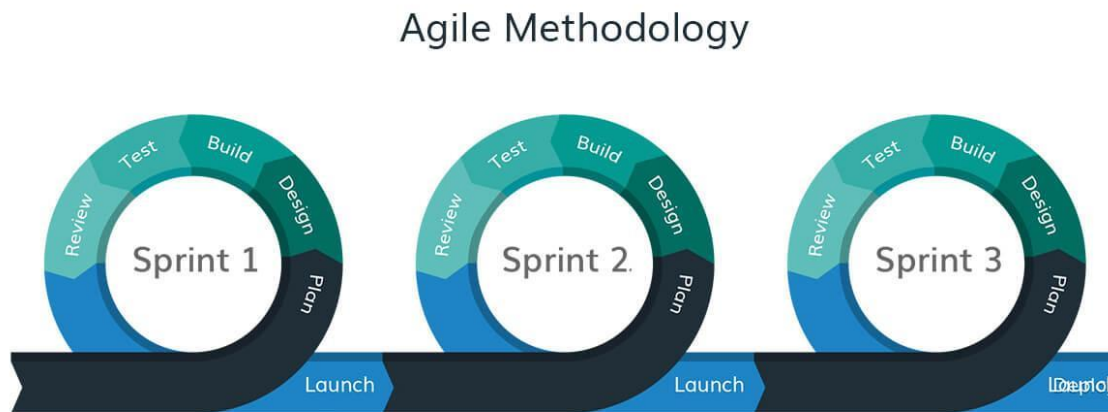
The Agile Software Development Life Cycle is similar to the Iterative incremental model. Each iteration acts as an input for next phase. The working software and supporting elements, such as documentation, are available for the customer until the software development is completed. Each iteration usually last two to four weeks and it has fixed completion of time. Multiple iterations will take place during the Agile software development lifecycle and each follows its own workflow. During an iteration, it is important that the customers and business stakeholders provide feedback to ensure that the features meet their needs.

A typical iteration process flow can be visualized as follows:

- **Requirements** - Define the requirements for the iteration based on the product backlog, sprint backlog, customer and stakeholder feedback.
- **Development** - Design and develop software based on defined requirements.

- **Testing** - QA (Quality Assurance) testing, internal and external training, documentation development.
- **Delivery** - Integrate and deliver the working iteration into production.
- **Feedback** - Accept customer and stakeholder feedback and work it into the requirements of the next iteration.

The following processes will be involved in developing this application:

i. Requirement gathering.

The requirements of the proposed project will be collected through some surveys and interviews. The requirement gathering includes all the relevant ideas and information of the project from the users, existing systems and other research papers.

ii. Requirement analysis.

Once the requirement gathering is done, I will work on understanding the project in details and analyzing the requirements that has been gathered. The SRS document will be prepared in this stage which will be an input for the design phase.

iii. System design.

In this phase the overall architecture of the system will be implemented with the help of the SRS document. This process will also include identifying the hardware and software requirement for the development purpose.

iv. Coding.

After successful system design the project will be divided into modules and actual coding will start. This is the longest phase software development life cycle.

v. Testing.

In this phase, the testing of the product will begin. Firstly, each unit of the system will be tested for its functionality. It will be followed be integration testing, system testing and acceptance testing.

vi. Final documentation. The final documentation will be produced at the end
of the project development.

System Workflow
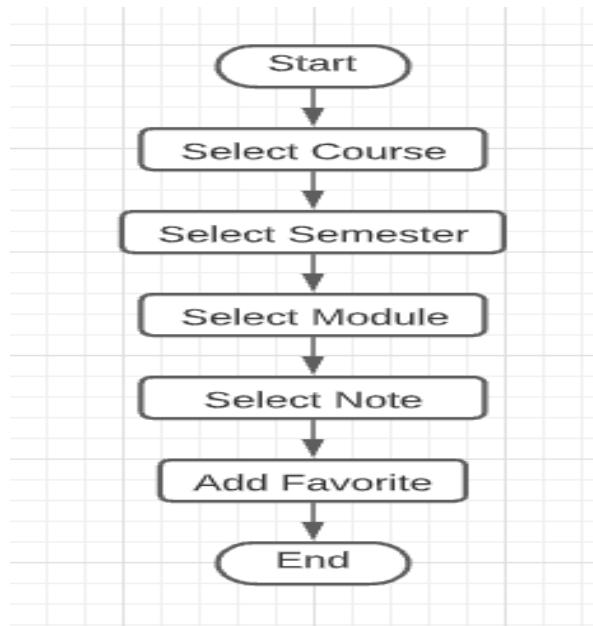
The above figure is a simple workflow of the system. The users can directly get into the
system without having to register and login. The users will be able to select course,
semester and module to access their notes. They can add any notes to the favourites
section so that it will be easier for them to access it later. The users can also search for
the notes using the search option available in the system.

A. **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.)*

1) Installing the required software and tools.

Installation of Android Studio – it is an Integrated Development Environment (IDE)
for the development of android applications.

Installation of Java Development Kit (JDK) – It allows the developers to create, execute and run java programs.

Installation of Flutter Framework –It is a UI toolkit which helps in building native applications for the web, mobile and desktop.

IndexedDB (database) is a low-level API for client-side storage of significant amounts of structured data, including files/blobs. This API uses indexes to enable high-performance searches of this data.

2) Gathering the required resources. The resources that we are going to use would be video tutorials, books and other online materials related to the android app development.

3) Design Phase. Designing of UI (User Interface) and database of the application. It also includes understanding the functionalities and flow of information.

4) Development Phase. It is a development phase of the application which includes coding by using android studio and flutter framework.

5) Testing Phase. In this phase, the application or the product will undergo several layers of testing to ensure that all the functions of the applications are working properly.

6) Final Documentation. After completion of all the phases, there will be a proper documentation of the project along with the project report

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.

Elapsed time from start (in months) of the project	*Milestone*	*Deliverables*
9/02/2021 - 20/02/2021	Topic Selection.	Topic selected
20/02/2021 – 14/03/2021	Brain storming, Feasibility and Survey.	Project proposal.
15/03/2021 – 20/03/2021	Requirement Gathering and Analysis.	SRS Document.
21/03/2021 – 25/03/2021	Software Installation.	Setting environment for development.
26/03/2021 – 2/04/2021	System Design.	ER diagram, Relational diagram, architecture design, database design, User interface design.
3/04/2021 – 10/05/2021	Development/coding.	Source code and functional features implementation.
11/05/2021 – 15/05/2021	Testing.	Test case.
16/05/2021 – 20/05/2021	Final Documentation.	Final report presentation.

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

Some of the benefits of my project would be:

➢ Students and tutors don't have to go through VLE which means they don't have to connect their devices to internet to access the notes. Students can use this application as their notebook.

➢ Notes can be easily accessible to all the users.

➢ Students can use this application as their notebook.

➢ Tutors can use the notes of other tutors as a reference.

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		☑	
Budget risk	☑		

A1. Comments(Describe the risk):

Technical Risk – There is high technical risk as I don't have required technology or hardware system for the development purpose.

Timing Risk – There is medium timing risk as I am not sure whether I will be able to complete the development of the project on time or not.

Budget Risk – There is no risk or low budget risk as we will be using only the free software that are available on the internet.

Feasibility Study

Since there is no offline based application for the tutors and students to refer the notes, my proposed application would be beneficial for all. Therefore my project is feasible.

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:

Sl #   Name   Signature

(Please add more rows if required.)

Project Coordinator

Name:

Designation:

Email:

Date: Signature:

Competent Authority – Head of Department
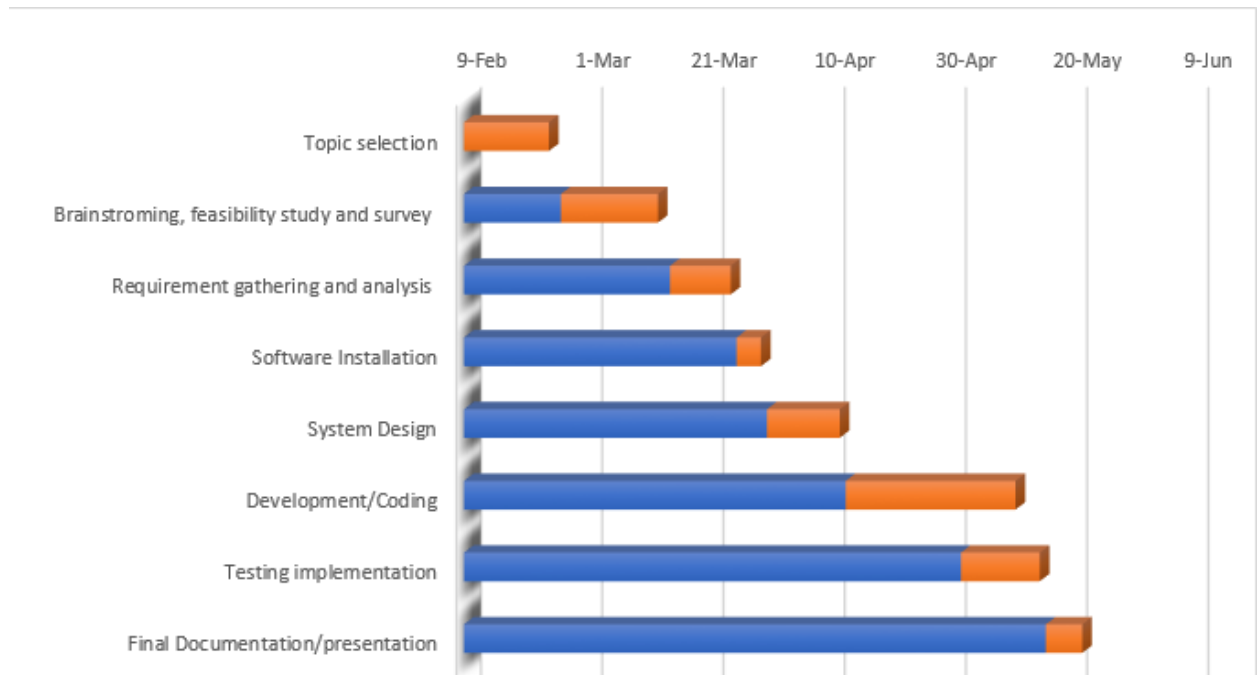
Name:

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)

13. Report Writing Guidelines

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

Bibliography

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