

# Digitization of Jigme Namgyel Engineering College (JNEC) Prayer Book: Android-Based Application

Passang Dorji

DIT

Jigme Namgyel Engineering College  
Dewathang  
05200228.jnec@rub.edu.bt

Dorji Lingdrel Wangchuk

DIT

Jigme Namgyel Engineering College  
Dewathang  
05200222.jnec@rub.edu.bt

Sonam Chokey

DIT

Jigme Namgyel Engineering College  
Dewathang  
05200237.jnec@rub.edu.bt

Sonam Wangmo

DIT

Jigme Namgyel Engineering College  
Dewathang  
sonamwangmo.jnec@rub.edu.bt

Jurmey Tshering

DHM

Jigme Namgyel Engineering College  
Dewathang  
jurmeytshering.jnec@rub.edu.bt

**Abstract—Abstract—Jigme Namgyel Engineering College (JNEC) prayer book is the android mobile app designed for all the users of the college in a digital format which is portable, accessible and convenient at any time. As of now, the college is using the printed prayer book. Even though the printed prayer book serves its function well, users find challenges in viewing and following the prayer in sequential order as the prayers are not in order and it is inconvenient to flip the pages of the prayer book in the middle of the prayer. In addition, the college doesn't have sufficient prayer books and every year, prayer books are printed which adds on to the college's expense. Therefore, android-based application 'JNEC Prayer App' is developed to overcome inconveniences of the printed prayer book. This application allows users to view the prayers that have been saved and also users will be able to choose which prayer to recite. Waterfall method is used in developing this application. It is designed with the prototype using Figma, and Android Studio is used for actual app development using dart language. This app can be upgraded with additional features such as audio features and calendar within app. It can be also made available to the iOS users in the future.**

**Keywords—Accessible, android-based, convenient, JNEC, Prayer book.**

## I. INTRODUCTION

Bhutanese people believe that singing the khathun on a daily basis helps them escape damage and calamities, fulfill their wishes, live longer and healthier lives, accrue merit for a better rebirth, and quickly attain enlightenment [1]. So, Buddhist prayer is about reminding ourselves to cultivate the characteristic we want. If we pray to a god, each god has a

specific attribute that we can pray for. Most of us sense the desire to pray, and even want to develop a better prayer life [2], some of them would recite the prayers from memory, however, there are many people who need to depend on prayer books in order to recite the prayers.

Similarly, in the existing praying system of JNEC, the management of a printed prayer book while praying and keeping the orders of the prayers for specific occasions is a difficult task and it's also time-consuming for both a person who leads the prayer and users using a printed prayer book. This existing practice doesn't provide smoothness and efficiency to the users and management as management has to print prayer copy when there is an update to be made which is wastage of resources and time consumption.

Therefore, considering all the aforementioned problems, it is a good solution and a nice idea to advance ourselves with trending technology and introduce prayer app service within the college. Therefore, the team aimed to develop an app that will allow users to use the prayer book in a digital format that is portable, accessible and convenient to use. In addition, to develop an app for convenience and ease of use and to reduce the wastage of resources by digitizing the prayers. A similar app has been developed by the students of College of Science and Technology (CST). The app does not show the prayers in sequential order and moreover, some of the prayers which are recited in JNEC are missing. Furthermore, having an app produced by a particular college with its name attached also makes the people and the citizens get to know more about the college which basically or indirectly helps in promoting the college.

Android application" JNEC Prayer App", is developed specifically to automates the existing prayer books printed by

the college management team, to provide user friendly app by presenting the prayers in sequence as per the occasion, to familiarize the prayer prayed in the college through app and to help users to recite prayers and mantras from the app. In this app, all the user will be able to view the prayers that have been saved and also users will be able to choose which prayer to recite. In addition, all the prayers in this app are arranged into proper order based on the specific occasion and the daily routine of the prayers. Moreover, it is portable, accessible and convenient at any time.

## II. LITERATURE REVIEW

“Culture defines the sovereignty and identification of Bhutan and its humans and the elaborate splendour and area of expertise of its conventional structure are recognized across the world. Cultural Background protection is one of the 4 pillars of Gross National Happiness, the guiding philosophy of Bhutan’s development. The Royal Government of Bhutan has made it a concern to maintain each tangible and intangible element of its lifestyle with devoted places of work near the Department of the lifestyle of the Ministry of Home and Cultural Affairs (MOHCA) which paintings intently with neighborhood governments. This painting is important as Bhutan’s monuments are vulnerable. The 2009 and 2011 earthquakes broke masses of ancient monasteries and fortresses called dzongs, such as the Lhuntse and Trashigang Dzongs (2009) and the Paro Ta Dzong (2011). The DCHS (Division for Conservation of Heritage Sites) with its companions is operating in any respect levels, starting from stock and documentation of vital background websites to hands-on protection works, studies work to enhance the expertise of the conduct of conventional buildings, and persevered ability constructing of artisans and its officers to decorate the resilience of those structures.” [3].

The Book of Sessions and Choechod contains a collection of popular prayers from many traditions. The Kagyu or Nyingma tradition of Vajrayana Buddhism is followed by the common thunpe or choechod. People usually say their prayers early in the morning and/or late at night. Bhutanese people believe that singing the khathun on a daily basis helps them escape damage and calamities, fulfill their wishes, live longer and healthier lives, accrue merit for a better rebirth, and quickly attain enlightenment. Many of them would recite the prayers from memory, and it is not rare to come across an illiterate traditional elder who is well-versed in a variety of khathuns [4].

Sincere Prayers Can Bring a Turnaround. Jehovah God said, “Then shall you call on Me, and you shall go and pray to Me, and I will listen to you”. God has clearly told us that as long as we genuinely call out to Him in prayer, He will help us through difficult times. There are many stories recorded in the Bible of situations turning around and problems being resolved through prayer. For example, when Joshua led the Israelites into war with the Amorites, he prayed to Jehovah God and God heard his prayer and fought for the Israelites.

Ultimately, the Amorites were defeated. And there were the Ninevites, who became corrupt and wicked to a point that offended God’s disposition, but when the prophet Jonah communicated God’s warning to them, they put on sackcloth and ashes, and fasted and prayed for 40 days, as well as fully gave up their evil ways within their hearts. When God saw the Ninevites truly repent, He showed them compassion and allowed them to continue to live. Another story takes place after the nation of Israel collapsed; Jews in foreign lands were framed by an evil nobleman and were in danger of being killed. In this crisis Esther guided her fellow Jewish people to fast and pray for three days and three nights and willingly risked death to go see the king. Jehovah heard their prayers and ultimately the evil man was put to death. The Jewish people avoided a major catastrophe. In that foreign land they also escaped becoming slaves and gained others’ respect and kindness. We can see from these events that when we genuinely look to God and offer up sincere prayers to Him, unimaginable things can occur [5].

Buddhist prayer app was created by cst students who incorporated the prayers that are recited in their college This app contains a collection of more than 100+ daily Buddhist Prayers. It would help users to pray anywhere anytime. It’s completely free with no Ads at all. It has an English translation feature [6]. Though it was a very handy app, it doesn’t have a page number or bookmark feature which is very difficult to locate once you lose the track (it happened to me quite a lot while pressing the back button unintentionally) [7]. In the JNEC prayer app, there is no way of losing track as the prayers are going to be in sequential order as per the occasion which doesn’t require page numbers on every page.

Since July 2002, Menjong Chothun Tshogpa, currently a nationwide non-profit organization in Bhutan, has been formed by Truku Jigme Chodrag Rinpoche 70th Kyabje Dorjechang, known as the Supreme Dharma King or His Holiness of Bhutan, mainly to preserve the indigenous Buddha’s Teachings as their age-old culture and tradition (Rinpoche). So, with the help of JNEC Prayer App, all the pray reciters are able to pray which indirectly helps to support the purpose of the Menjong Chothun Tshogpa [8].

Businesses these days need to make critical choices on their selection of mobile technologies. The challenge is that cross-platform development can be problematic. In several cases, despite a developer’s best efforts, the user experience lags behind that of actual native apps. In recent years we’ve seen the emergence of various mobile frameworks like React Native, Xamarin and AngularJS that help make it easier to produce these digital experiences. Recently we’ve seen a new player enter the game — Google’s Flutter. At its heart, Flutter might look like a hodgepodge of various Google technologies and concepts, however these results in an improbably powerful mobile framework. It’s based on Dart, Google’s in-house programming language, which gives Flutter access to the Skia graphics library — which is what Chrome uses. Additionally, Flutter works closely with Google’s Material

Design specifications; most famous for the “card motifs” that Android users have come to know [9].

### III. METHODOLOGY

The android-based application was developed using a ‘Waterfall model’. The development is shown in the figure.

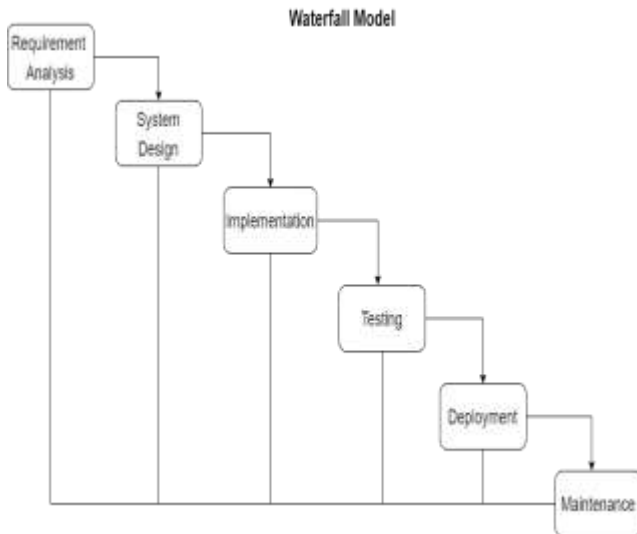


Figure 1: Methodology

#### A. Requirement Gathering and analysis

After knowing the scenario of existing system, the team proceeded with requirement gathering. It is very important to define precise requirements before the design phase. Requirements are gathered through interview with college prayer coordinator, discussion with project guide, brain storming of team members, and team meeting where each member shared what they have known and understood from literature review and study of existing system.

#### B. System Design

Design phase includes context diagram design and user interface design. Context Diagram Context Diagram is a basic dataflow diagram that focus on how external entities such as user, JNEC Prayer Book App and admin interact within the system. The interaction within these three entities is admin can put prayers in the JNEC prayer Book App. JNEC Prayer Book App will display the prayers to the users. Users can view the prayers that is contain inside an app. Context diagram is considered one of the most important steps in design phase. It includes designing of prototype for the proposed Prayer app. A prototype is an early sample, model, or release of a product built to test a concept or process or to act as a thing to be replicated or learned from. A prototype is designed using Figma (prototyping tool).

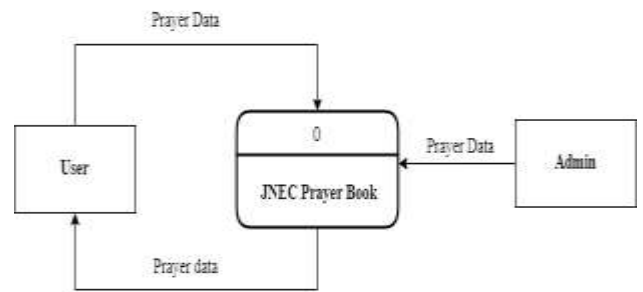


Figure 2: Context Diagram

Other graphical designs are designed using draw.io which is an online platform for designing the graphical representations. The Fig.3 shows the prototyping of home/menu page.

#### Flow Chart

To select the desired prayer and to recite, select the prayer items from the menu. If the desired prayer is selected from the menu, it will let you enter into the new page which contains the list of prayers. Even if you selected the menu but with mistakes, it will carry you to the new page that contains the list of prayers. But it has options to go back to menu and reselect the prayer of your choice.

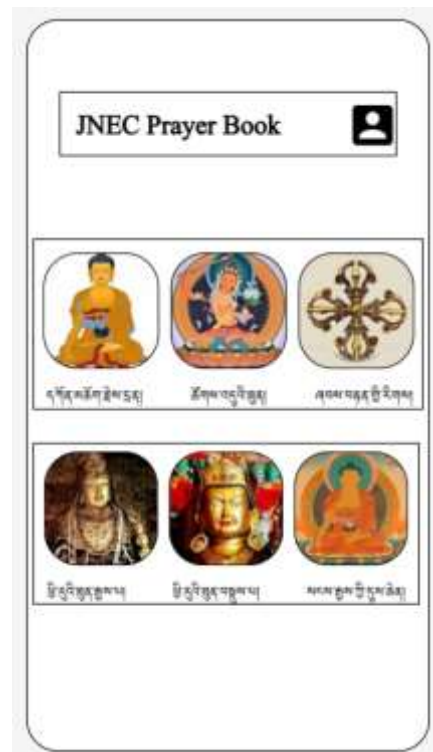


Figure 3: Home Page

The Fig.4 shows the prototyping of content page.

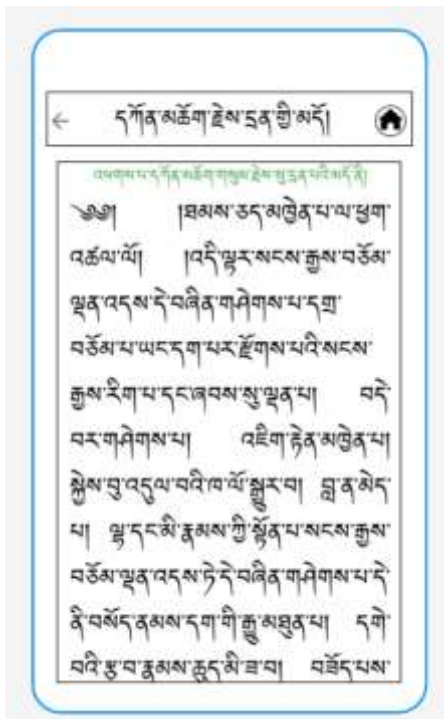


Figure 4: Content Page

#### IV. RESULT

As the app is launched the welcome screen appears (splash screen), further leading to the home page and the home page provides the users with the prayer menus where they select the required prayers. This splash screen will be displayed as soon as the app is opened as shown in the Fig.4.

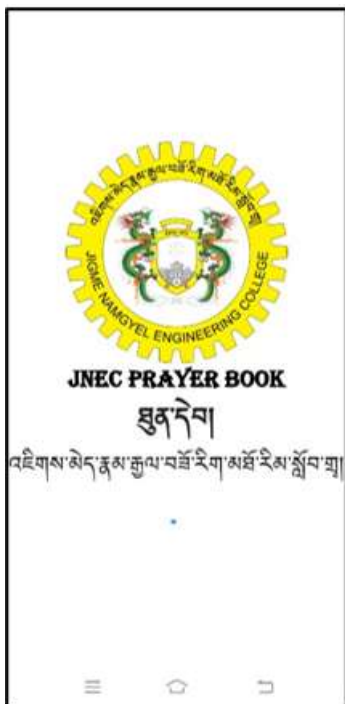


Figure 5: Splash Screen

This home page will be displayed as soon as the splash screen gets closed automatically where we can view all the list of prayer menus as shown in the Fig. 5.

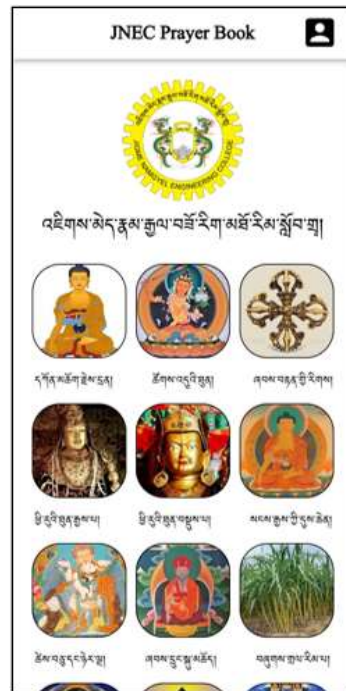


Figure 6: Home Page

This is the About Us page where it displays the name of the developers, guides and the brief descriptions about the app and the prayer as a general as shown in Fig. 6.

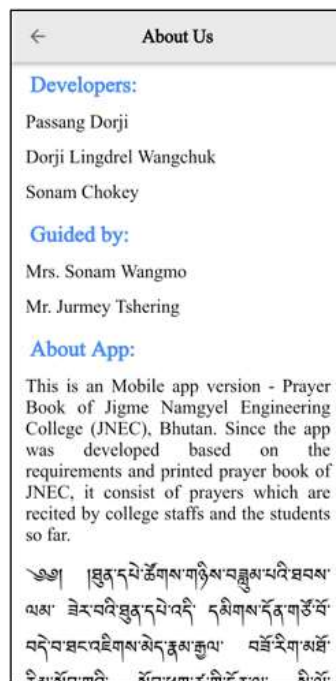


Figure 7: About Us page

Navigation to about us page is shown in Fig.8.

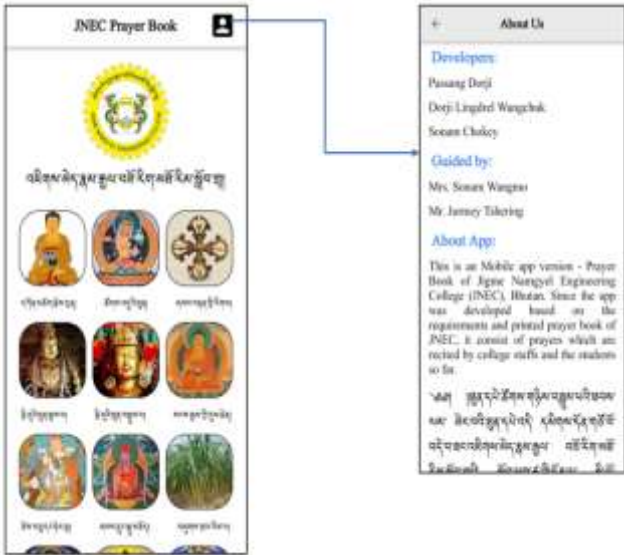


Figure 8: Navigation to About Us Page

Navigation to each content prayer page from the menu/home page are shown in figures (Fig.8, Fig.9, Fig.10, Fig.11).

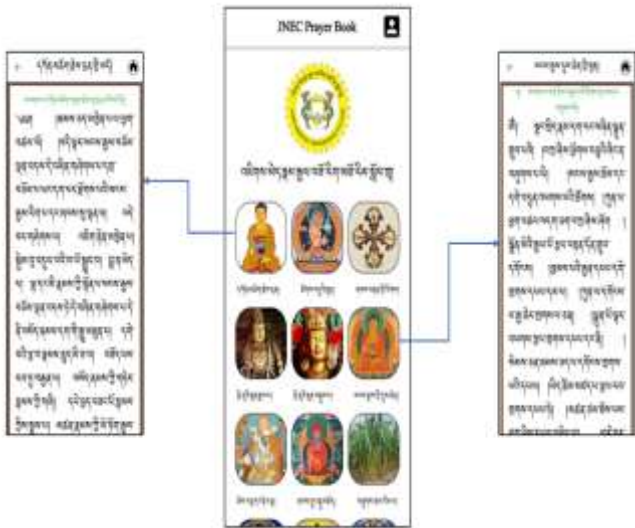


Figure 9: Content Page

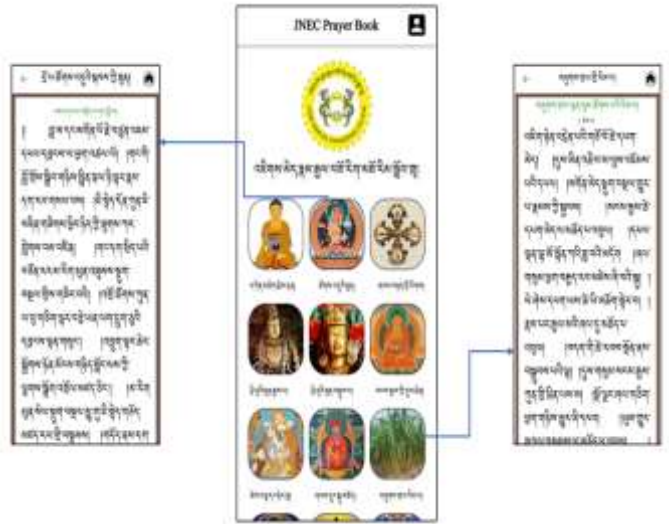


Figure 10: Content Page

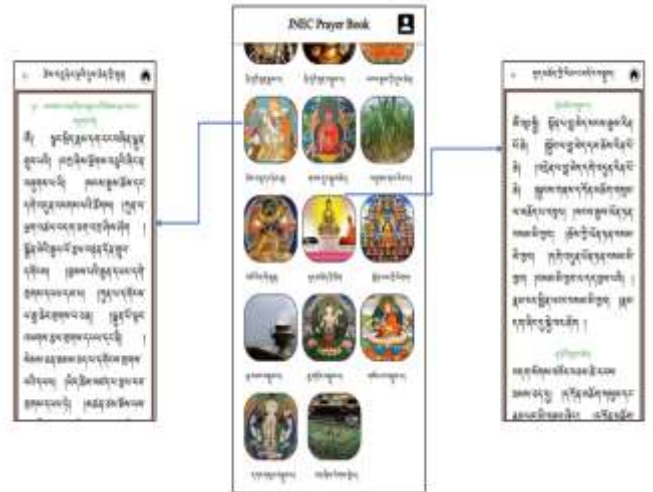


Figure 11: Content Page

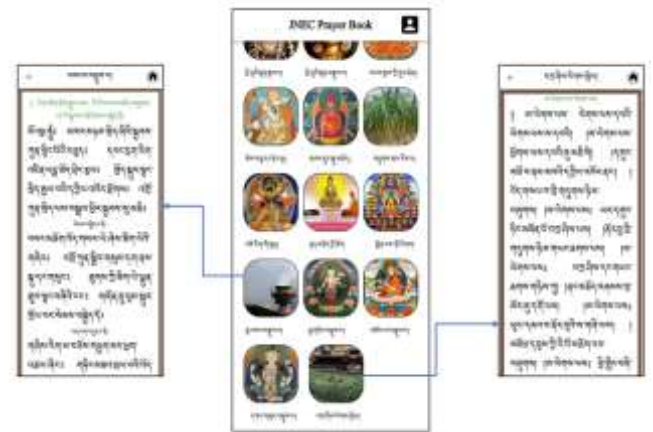


Figure 12: Content Page



**Figure 13: Content Page**

## V. CONCLUSION

The application 'JNEC Prayer App' is specially designed to be used by the staffs and students of the Jigme Namgyel Engineering College. This will help the users to recite the prayers from the mobile app which is portable, accessible and convenient at any time. The users will be able to view the prayers of different types which are recited all over the Bhutan and mostly which are recited by the college staffs and the students till now.

The android-based application was developed mainly to give user-friendly interface, easy to use features, reliable and to have a portable version of prayer book. With this mobile Application (JNEC Prayer App) every user can view the prayers that have been saved and also users will be able to choose which prayer to recite. Moreover, all the prayers in this app are arranged into proper order based on the specific occasion and the daily routine of the prayers.

With advanced technology, everyone knows how to use all the mobile phones and the applications within it so it is no big deal with using our app. These technologies can be used for the betterment of our lives such as easing the lives of people by giving them the platform to recite prayers from their mobile phones. Therefore, with this mobile application everyone will have an easy way to recite prayers and get the knowledge of various prayers. The app contains all the prayers which are recited in the JNEC. There is no need for the users to create an account to use this app.

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