

**“BANGLA PROGRAMMING” - AN ANDROID BASED MOBILE
APPLICATION**

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This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Computer Science and Engineering

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DHAKA, BANGLADESH

AUGUST 2018

APPROVAL

This Project titled “**Bangla Programming – an android based mobile application**”, submitted by MD MOIN HOSSAIN BHUIYAN, ID: 143-15-4499 and FIROJ HOSSAIN ID: 143-15-4498 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering (BSc) and approved as to its style and contents. The presentation has been held on 25 November.

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We hereby declare that, this project has been done by us under the supervision of **Md. Sadekur Rahman, Assistant Professor, Department of CSE**, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ACKNOWLEDGEMENT

We express our heartiest thanks and gratefulness to almighty Allah as His divine blessing makes us possible to complete the final year project successfully. We felt grateful to and wish our profound our indebtedness to **Md. Sadekur Rahman, Assistant Professor**, Department of Computer Science and Engineering, Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of Mobile Apps development (android based) influenced us to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior draft and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to **Dr. Syed Akhter Hossain, Professor and Head**, Department of Computer Science and Engineering, for his kind help to finish our project and also to other faculty member and the staff of Computer Science and Engineering department of Daffodil International University.

We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, we must acknowledge with due respect the constant support and patience of our parents.

ABSTRACT

Bangla Programming is an android application which aims to help the programmers. This whole project is for easing programming. There is no any authentication in my application. A few Bangla programming applications in play store. My application is needed for beginner level students. If any user enters my app, first see there are no any login page. Then he/she see the homepage and 4 modules in home page. Chapter, question bank, test and compiler. So these the plus point for a user. He/she fully complete this whole course then he/she write code and solve basic problem. Bangla programming application is really useful for beginner level students.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Today's world is technology based and every technology is going ahead. Computer programming which is most popular in today's technology. Nowadays Programming is available in everywhere. Before today's world everything such as every tool were rare. Now everybody gets easily every tool which is really helpful for them. In this technological era there are many programming languages like C, C++, Java etc. In programming there is a popular thing which is problem solving. By solving problems logically site will increase. So, programming language is very important in this era. Java and C and C++ are the most popular [1].

1.2 Motivation

We are motivated by our daily life research that people of any age basically young people are like to do programming. Nowadays we see that in our country people who love programming are searching many kinds of programming tutorial by their own language. Considering in this situation we try to develop a beneficial for the people of our country. So, they can easily understand.

From the beginning of programming we are very afraid but day by day we realized that it is to interesting thing.

1.3 Objectives

Objectives of our mobile application are mentioned below:

- To provide a platform for user that they can easily understand from any local region inside our country.
- To provide a platform to the user that they can learning many kinds of programming language in one platform.

- To facilitate users by providing Compiler, so they can easily run a program.
- To provide an opportunity to the users to test their progress by using this.
- To provide section by section language for users so they can easily find which they want.

1.4 Expected Outcome

This application is an android based programming language App. In many app stores we found only one Bengali programing app. So, we decide that create a unique concept like many programing languages in Bengali in one platform. We expect that people of Bangladesh, they can easily understand. In our app there are a Test section so they can test them by using this section. Everyone wants small device for reading it's also portable and easy to carry. So, the major concept in our application. We use a software for Bangla font and that's called Avro.

We try our level best to improve this and this application is beneficial for all Bengali student. Working process of this application is too easy.

1.5 Report Layout

In chapter -1 of the report, we introduce to our project application and discussed about its motivation, objectives and also about its expected outcomes.

In chapter -2 of the report, we discuss about the background circumstances of our project. We also talk about the related work, the scope and challenges of the project and the comparison to many other candidate systems.

In the chapter-3, we specified the requirement of the project. In this section we defined the data flow diagram use case, ER diagram and design requirements. We also discussed about the requirement collection and analysis process.

In the chapter -4, we specified the front end and the back-end design of the project.

In the chapter-5, we exhibited the implementation of the whole project and we tested every section of the project weather the application is working as expected.

In the chapter-6, we discussed about conclusion and the scope for further development of the project.

At last of the report, we give the related reference to ensure that the information in the report are must be correct.

CHAPTER 2

BACKGROUND

2.1 Introduction

Firstly, if anybody want to write a code so what he/she have to do? We know that if anyone want to do anything firstly, they have to wish to do this that means passion. Wishing is the most powerful weapon to do any work. Below the wishing program. Today's every people or nation is going ahead by using technology. So, this is the main part in any country. Today's programming is the fundamental weapon in technology .C, C++,Java are the most popular programing language today.

2.2 Related Work

Now a days, there are many organization and developer are working on the android section. When we decide to make the app "Bangla Programing "we search on many stores and we don't find any Bangla programing app like this. We found such app that has one or two programing language features. This is the main difference between our app and other programing related apps. We try our level best to improve something which is helpful for Bengali users. We think this app will help the weak or poor-quality student to easily understanding. In our app we use static not dynamic and we don't use any database in our app. We working on most popular Programing language like C,C++,Java PHP [2].

2.3 Comparative Studies

When we are interested to know or want to study of any programing language, firstly we visit the popular website about programing language. Bengali Students who are weak to understanding they search their expected programing language in Bengali. But most of the website didn't get their expected information. To visiting in a many different website is a lengthy and slowly process. This era people of new generation are attracted to the mobile applications. Today's smartphone is the most popular and useful electronic device. Peoples use mobile application to get information easily and which is save their valuable time. Hats why we build this mobile application. In programming convention is too much important

[3]. But most of the mobile application about Bangla programming are provide only specific one or two feature. In their app there is no way to know more than five or six programming language.

On the other hand, in social media there are many posts about programming language. But there are less groups or post about programming language in Bengali. Sometimes we found only one or two language in one group and to know about other language then go to others post or groups. In below we try to compare among the current competitors with a table:

Table 2.1: Comparison Table

	Does it provide contents in both Bengali and English?	Is there enough explanation?
Websites	Yes	Yes= 7 No=13
Mobile app	Yes	Yes= 7 No=13
Social media	No	Yes=10 No=10

2.4 Scope of the Project

Our app “Bangla programming” is basically based on programming language and the whole concept is written in Bengali. We hope reader will be satisfied after using this. Because we try to easily touch the all concept. We also keep a compiler which help to user to improve them by solving the problem. Anyone Practice the problem here and solve. So, we think this app will be best for Bengali users.

2.5 Challenges

When we try to perform any different activity, we must face some challenges and obstacles. There is no activity can completely be smooth. As like this we have facing some problems

during developing our project. Our project is about programming language in Bengali. This era is technological era, where people are busy with social media like Facebook, Instagram.

We focusing to giving valid information to the user. Fake information is very harmful for users. If we face a problem that our button doesn't work properly then we trying to solve the problem as soon as possible. After completing the project all about application is challenging for us.

CHAPTER 3

REQUIREMENT SPECIFICATIONS

3.1 Business Process Model

Business process modeling (BPM) is a process of representing the process the workflow of a system. IN this diagram we try to describe our project as business model. Business model is familiar way to describe the process, purpose and policies. Basically, the diagram is used to describe how the data is processed to the system. Normally, Data Flow Diagram [4] describes form google and how data flow is processed through a system or project.

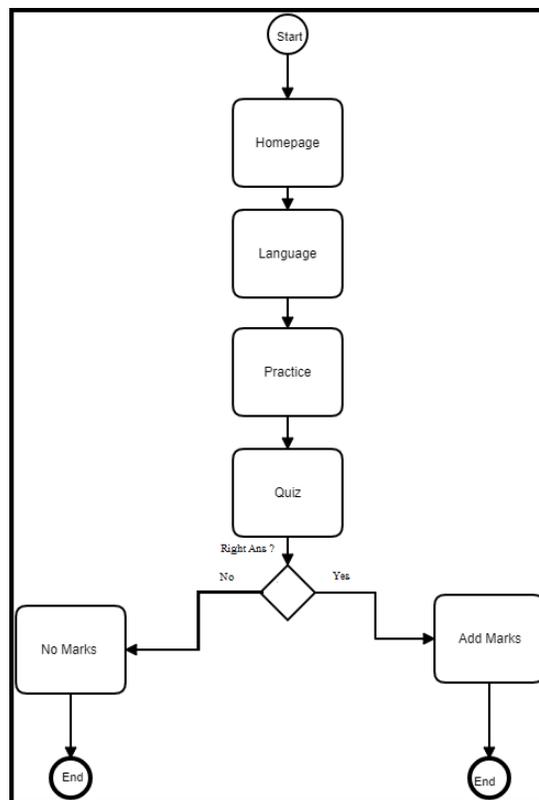


Figure 1.1: The Business Process model of Bangla Programming

3.2 Requirement Analysis

Requirement analysis is known as requirement engineering which is the primary condition of application development. For the project development there are two types of requirement. One of this are functional requirement and other is non-functional requirement. The activities that is an application software can perform is known as functional requirement. On the other hand, Nonfunctional requirements define the personality of an application, as like the application is how much efficient, performance issue of the application

3.3 Functional Requirement

Functional requirement is those which are related to the technical functional of the system as like application software can perform. From the point of view of our system, the application has many functional requirements as like maintaining database and maintaining server where only admin section person can access. There is some build in function.

3.4 Non-functional Requirement

Non-functional requirements is specific criteria which can measure the operation system of any some conditions. On-functional requirements help to being more efficient; optimize performance, memory consuming, smoother operation, and load on quickly as possible to our application. Application UI should be user friendly and gorgeous for excellent user experience. Non-functional many build in function also use in here.

3.5 Use Case

A use case is a list of actions or event steps typically defining the interactions between a role and a system to achieve a goal. Use-case always use for user understanding and we try our level best for efficiency.

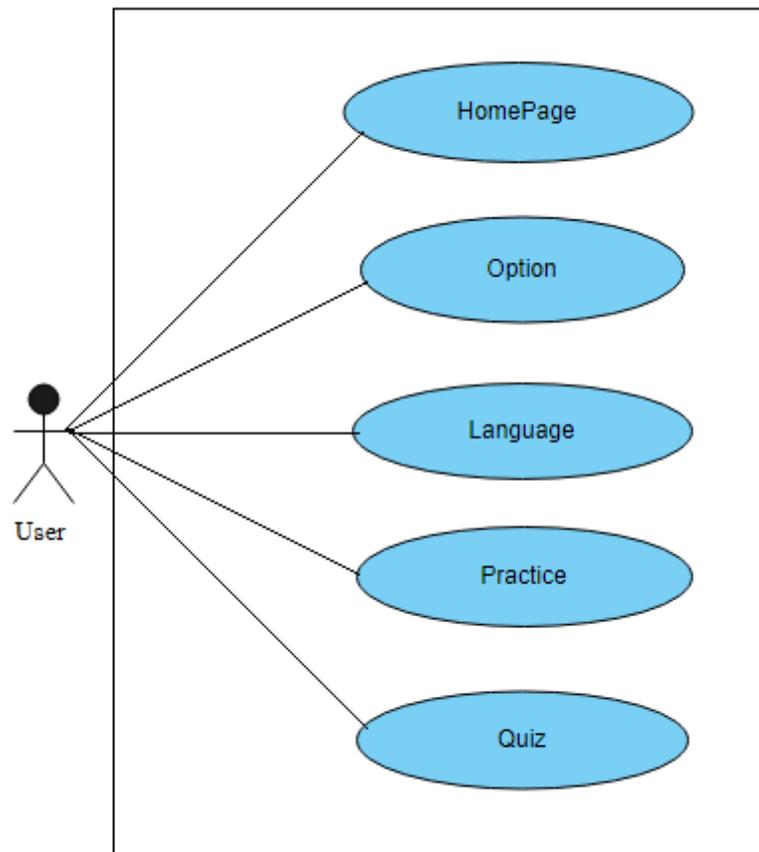


Figure 1.2: Use-case modeling of Bangla Programming [5]

Here in figure 1.2 we show how to use this application when user open the then app appear first homepage and then all. In this app Option is a part and all button include in there. If user tries to enter any option, then they press any button which he/she want. Basically, use case is the process to how use this project

3.6 Logical Data Model

Logical data model [6] describes data those are stored in database as deep as possible. It includes all entities and relationship among them. Logical data model mainly consisted of few elements like, data entities, attributes and keys and relationship between the entities. In our project we use object oriented as a Back-end and for font-end we use XML. In Bangla Programing application we don't use any database section SQL as database server. This application is descriptive so we don't use any database.

3.7 Design Requirements

The design requirement of our application is different from the many other applications. We think about the user requirement. We design our project for specific user. We try to include all necessary things which are necessary for user. In our application, we haven't used any authentication for our user because of this app is a public app. should provide the scope of authentication.

2. In our app we don't design profile which means there is no registration part [7].
3. In our application we designing a compiler system. API is not available so we design compiler system is just download compiler from link.
4. In our Bangla Programing app we designing all description option in Bengali font. We include all important code for all languages.
5. In our app we design every language in section by section, so user can easily find which he/she want. First language is C, we design it also section wise. If user enter on C then they can see there is some option like Basic, variable, function etc.
6. In Our project we don't use any dynamic data we use only static data.
8. In Bangla Programing app we design our description things in Bangla font. For Bangla font we use Avro.

We try to build our app as user friendly. We don't find any Bangla programing app in app store as far we know. There is some specific language in Bengali.so we design our app using Bangla font for Bengali users.

CHAPTER 4

DESIGN SPECIFICATION

In this Design Specification we try to show the Back-end design and front end design of our app. We also discuss about other tools and things which we use to develop our project

4.1 Front-end Design.

The important thing in designing is Front-end designing. When user open the app then, What user see? User see a homepage. this is Front End designing. This section is much important, cause if user don't like the front-end design they dislike the whole app. So we tries to build our project as simple designing that user can easily access. But the development of this project is not too easy.

The front-end design of our project is as follows:



Figure 4.0: A Screenshot of Front-end Design of Bangla Programming (Mobile Application)

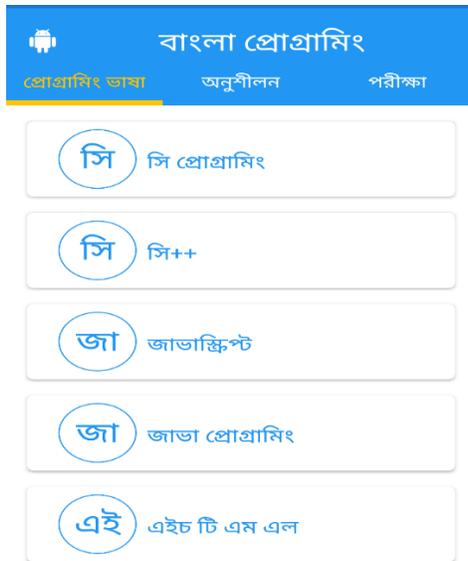


Figure 4.1: A Screenshot of Language option of Bangla Programming (Mobile Application)

Figure 4.1 display the front page of our application. When user open the app then the app display this font. We design our app font as simple. We just tries to make the app user friendly. But this is not too easy with more facilities.

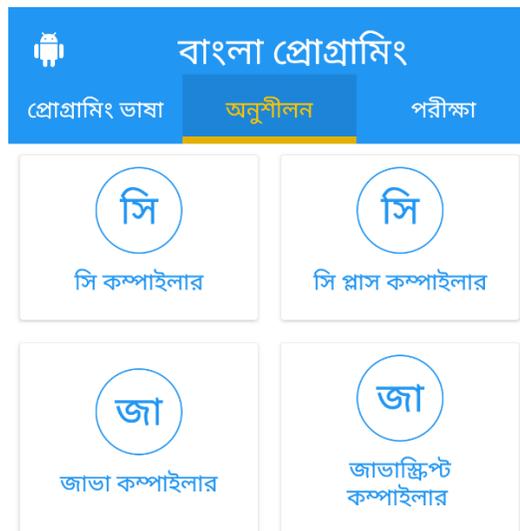


Figure 4.2: A Screenshot of Practice/Compiler of Bangla Programming

Figure 4.2 shows the practice option and we think all buttons users like most. If user want to compile a code in c then he needs to press on C Compiler. Same as C++ and Java compiler works.

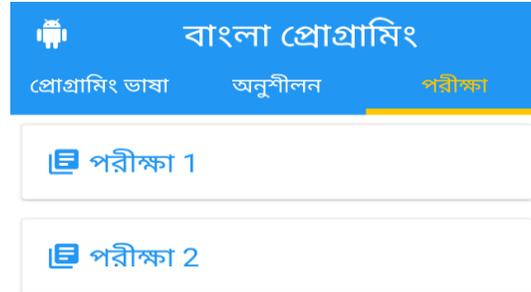


Figure 4.3: A Screenshot of Exam/Quiz option of Bangla Programming

Figure 4.3 show us, the exam portion of our app. anyone can participate on this exam. People can get idea from our language option and can practice with compiler. We recommended to user that he/she participate in exam after carefully reading our languages.

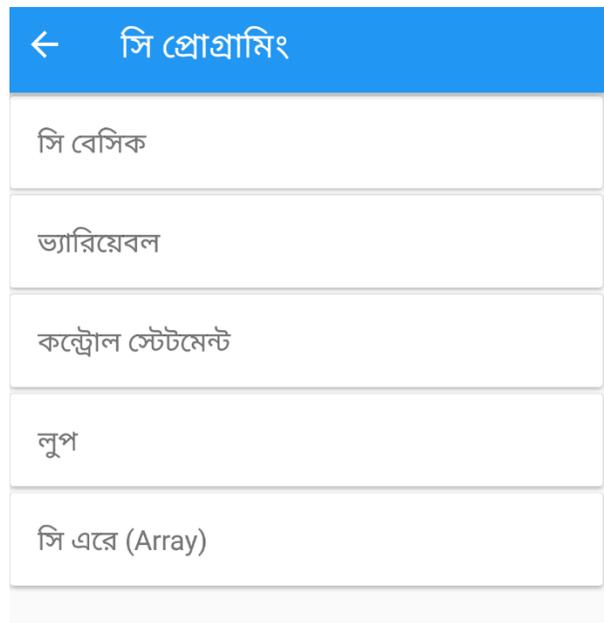


Figure 4.4: A Screenshot of C programming option of Bangla Programming

Figure 4.4 show this is the menu option for C programing. User can select C variable function and loop.

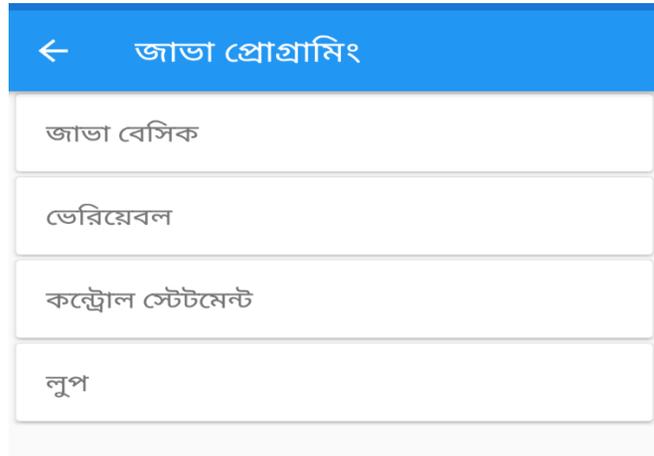


Figure 4.5: A Screenshot of Java Programing option of Bangla Programing

Figure 4.5 shows the java programing content option. User can can select java variable or which he/she want.

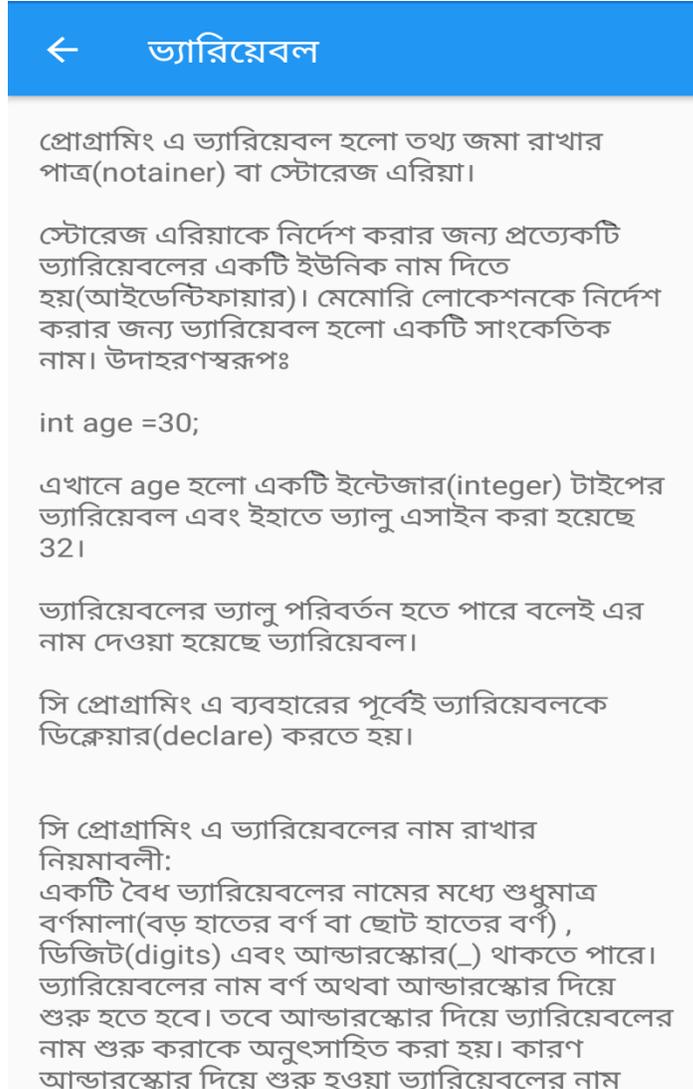


Figure 4.6: A Screenshot of C programing variable.

Figure 4.6 show us, the variable content of C programing in Bengali language. We design every Content for every language in Bengali for user friendly.

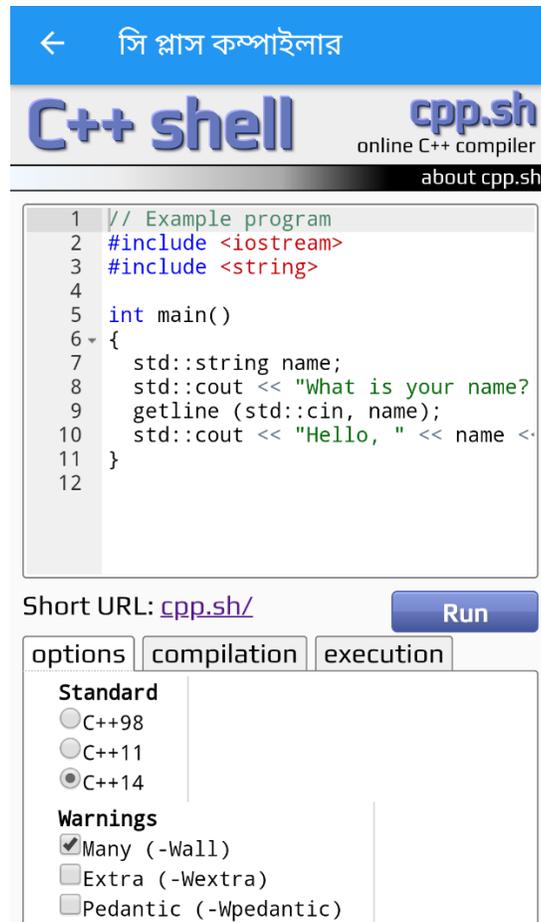


Figure 4.7: A Screenshot of Compiler of Bangla Programming

Figure 4.7 shows the compiler activity when user input any code on compiler. User can write any code here. This compiler is online based and most efficient for users

4.2 Back-end Design

Back-end design means the side design of project. User cannot see this. This is the process of controlling the behavior of project action. Front-end is important but Back-end is the most important part of any project. Back-end does everything that's happens on the behind the application. Back-end design is more difficult for android application rather than the web application cause android devices have very limited components. Back-end design has three parts application, database and server. In our app we don't use database part. This application is a descriptive application. This is the reason that we don't connect to database.

Our application has no any authentication part so that's why there are no any login panel or registration part.

4.3 Implementation Requirement

To build our Bangla Programming application, we use different types of implementation tools, attributes and platforms. In its implementation requirement portion we will discuss about all tools and platforms. Making this application easily accessible and useful to people has become possible with the help of these tools. In our application we implement the core code that's means the Java and XML code. The contents in our application is written by Bengali that means Bangla font.

4.3.1 Android Studio

Android studio [8] is the official integrated development environment (IDE) for Android operating system. Android studio provides the fastest and easiest tools for code debugging, editing, performance tooling, a flexible build system. Android SDK for developing any android application and also testing android application when users need to run.

4.3.2 Android Overview

Android provide a complete set of software of stack for mobile devices. Android deliver a complete set of tools framework to developing mobile applications very easily and quickly. We design our project with Extensible Markup Language (XML), and connecting the server using Java Language in android studio. Android studio is an open source application platform where developer can easily make their own user interface. So, developer can build different types of application for users.

4.3.3 Android SDK

Android SDK is very important for developing android application. Android SDK [9] is a comprehensive things or platform that means Android SDK is a complete set of software stack for mobile device. Android Developer use android studio together to build and run

all of the android applications. Developer use android SDK for store content, audio, video and many other essential things. Using google cloud on the server provide same result.

4.3.4 The Emulator

Android Virtual Device (AVD) [10] is an Emulator. This emulator provides an android device where developer can emulate any android apps and project. This is used for run and test the android apps. Run a project to android emulator is not mandatory. We can run it on our mobile device. But emulator provide an instant working process of developer's applications.

4.3.5 Android Version

Android version has been developed since 2009. Android release a confectionery-themed code name and displayed in alphabetical order. Version is start from 1.0 but version 1.0 and 1.1 were not any specific code name.

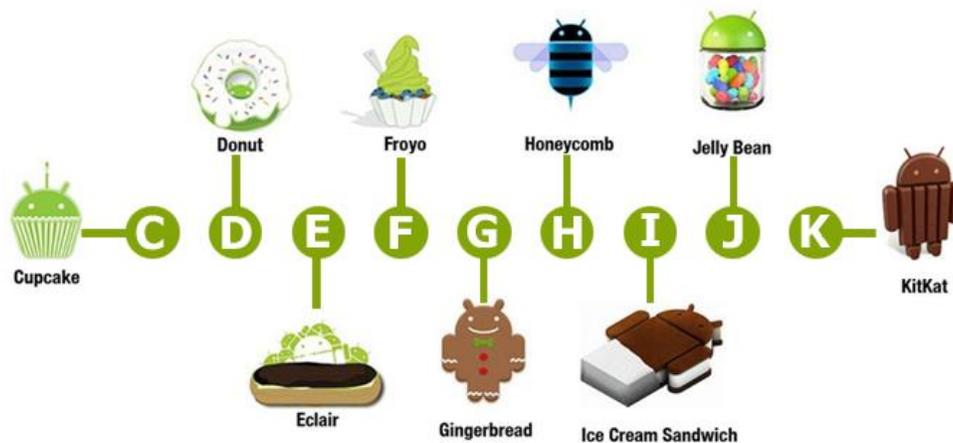


Figure 4.8: Android Version

Figure 4.8 shows the android mobile application version [11] with their codenames. All the time version number will be changed. Sometimes because of sometimes the API have changed.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation

In our app we don't use any database because we have only descriptive part. We implement the description of C one by one function. When open the app then page appear all programming language. After that when press the button C Programming then it open and run smoothly. In homepage show all language and after entering any language than we see variable of function of c any many others option.

5.2 Testing

Testing is an important part in any app or any software. First of all, make an app and build the app. Build the app and then for testing any developer can debug and after debugging a developer can find the bug. After making any app or software have to test and for this have a tester in every company.

5.3 Implementation of Front-end Design

Android devices is a smaller size device so the designing is good challenge to developer. Really it is tough challenge to developing a gorgeous front-end design to attract users. It is very difficult to balance the designing with android smaller display size. UI designing is attracting the users. The most difficult challenge is device independent, there are many types of smartphone that are android based among of these devices some have very weak hardware.in a little bit pressure device will be crash. So, we have to ensure that first. We design our app that can support all kind of smartphone android version and can't made extra pressure on devices.

That our android application is secure and will not create any extra pressure on devices. We attached our application front-end implemented design. This is the home page and clicking this any button enter the function.



Figure 4.9: A screenshot of Front-end design

5.4 Testing Implementation

Table 5.6: Test Case for Project on Bangla Programming

Test Case	Test Input	Expected Output	Actual Output	Result	Tested On
1.Install Application	Tested on Various – <ol style="list-style-type: none"> 1. Jelly Bean (4,1-4.3.1) 2. Kit Kat (4.4-4.4.4) 3. Lollipop (5.5-5.0.2) 4. Marshmallow (6.0) 5. Nougat (7.0-7.1) 	Successfully install all those versions.	Install successful	Passed	30/10/2018
2.Event Create	Create new event with proper information.	Create new event and show in list.	Show the created event successfully.	Passed	30/10/2018
Compile	Compile successfully all code.	Show the actual result.	Actual output.	Passed	30/10/2018

5.5 Test Results and Reports

Test report is needed to reflect the result of testing the application in a formal way, which gives an opportunity to estimate the result of testing quickly. It is a document that records data obtained from a determine experiment in an organization manner, describe the environment and operating system and shows the comparison of test result with objectives, which are so important for any types of application. In table 5.5, we shown test case, test input, expected output, actual output and finally we find our expected result for our application. The test result is quietly successful. The user satisfies to use our application. Our expectation will be that user can easily use and understand our application. Our expectation will be that user can easily use and understand our application as a better user interface.

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Conclusion

Our android based mobile application Bangla Programing has been successfully implemented. We tested the app in many difference types of smartphome, and we see that the application work properly in every device, it also gives the same output which we implement there. We made this app for especially Bengali students. Authentication is not needed for this application. We search in apps store but we don't find any apps like ours. Every user can learn from our app because we combine all language in Bengali.in apps store there are single app like only C, C++ or only java programing app in Bengali. So, we think this app will be the best app for Bengali users

The designing of the apps is very user friendly. User interface is so simple and not looking like as a complex view. User can easily use our application. We tried our best to complete all requirement for our application. We hope that people will use our application and get proper service.

6.2 Limitations of our Application

As like as all work or project every application has some limitation. So our app has also some limitation.

We will overcome those problem in future. In below we mention some limitations of our app:

1. Using Avro for Bangla font there are some mistake.
2. Avro software is not giving output properly.

6.3 Future Scope

We try our best for developing our application in present time. If we find any scope for developing in future, we want to develop and change something of our application. Our future developments scopes are given below:

1. In future, we will try to develop offline and online both types of Android application.
2. We try to develop this application for all types of mobile device operating systems.
3. We try to develop this application for all operating system like windows mac.
4. In future, we will try to dynamic this. Right now this is static that means data is not changeable.
5. Right now has some Bangla font problem, in future we will try our best to resolve this.
6. This application will be the best application for any user.

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