

**Android Based Application Skill Book**

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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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## **APPROVAL**

This Project titled “**Skill Book**”, submitted by **Md. Aminul Islam Emran** and **Tamanna Islam** 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<sup>th</sup> November, 2018.

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## DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Moushumi Zaman Bonny, Senior Lecturer, Department of Computer Science and Engineering**, 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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## **ABSTRACT**

In our daily life the importance of smart phone has changed the definition of mobile phone. Smart phone is not only just a communication device, but also as an essential part of our everyday life automation. The title of this project is “Skill Book”. It is an android based project. This report is intended as a guide for teachers and students when conducting research is part of course-work requirements. The proposed system is developed to mainly build a platform for the people from where they can get skilled about various programming language. It will decrease the level of confusion of the students about their learning method. It can change the opinion of students and decrease their fear about programming language. There are various programming languages in this application like SQL, C, C++, and Java. In this application we have two steps. One is basic level and other one is advance level. Each language have multiple chapters. Once the user finished one chapter they have to give an exam. If user can get minimum score in the exam then he will be able to go to the next chapter. There are two ways of examining online and offline in this application. This app is also very helpful for the beginners.

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# **CHAPTER 1**

## **Introduction**

### **1.1 Introduction**

The application named as Skill Book which is developed for the final defense is a skill based application for the beginners through which they can develop their programming skills through online with the help of smartphone or any other devices. It is an offline based application for the learners, but in the near future the application can be run through online with the help of internet.

There are 4 chapters inside the application which includes four different programming languages for the learners. The detailed application has been described in the following chapters below.

The application is developed on android platform and is applicable to run in any android devices for now on. But in the near future it can be used in any IOS devices too. The theme of Skill Book application is thoroughly available at the google play store but the main difference between the applications available there and between the applications of ours is the learners. We have been focusing on the learners from the beginner level to the semi advanced level which can help the major learning population of the country who uses smartphone and who is technologically savvy.

## **1.2 Motivation**

Beginners or new students who want to learn programming language are confused because they do not know how we can learn any programming language easily. They try to find out a way to learn programming language but they can't because lack of resource.

Maybe they can find out a way to learn programming language but the resources are not in a place together. It is difficult to learn from different resources.

After learning programming language they can't judge them self how much they learn. If there is a feature of online & offline exam, then they know who skilled they earned.

So, I want to make an android application where learning resources are arrange together for easy learning the programming language.

## **1.3 Objectives**

All resource are available in a place so that anyone can easily find out any resource. This will help a beginners to gain skill easily. Every possible examples are attached with every resources. Those examples are help the beginners to better understanding the programming language.

They are will be also an option for online exam as well as offline exam for those students who can judge them self how much they can learn. It will increase a student's confident and interest to learn more & more.

Initially I've plan to make this app with a single language. I want to start it with C/Java language.

With a single language, it is not possible to make it outstanding project. So, in future I've plan to make it for different language and make it outstanding.

## **1.4 Expected Outcome**

Outcome is the changes, benefits, learning or other effects that happen as a result of our work [1]. It will decrease the level of confusion of the students about their learning method. It can change the opinion of students and decrease their fear about programming language. Student feel proud because from this application can increase their interest and learn more and more. Exam can remove their doubt about their learning from this application.

## **1.5 Report Layout**

Rest of our project report, we have organized as follows: In the chapter 2, we introduced to the background circumstances of our project. We also briefed about the related work, the scope and challenges of the project and we compared 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, E-R diagram and design requirement. We also discussed about the requirement collection and analysis process. We specified the front end and the back end design of the project in the chapter 4. 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 5 and chapter 6, we discussed about conclusion and the scope for further development of the project. At last of all report we give the related reference to ensure that the information in the report are must be correct.

## **CHAPTER 2**

### **Background**

#### **2.1 Introduction**

The application which is developed named as Skill Book is an android based application. The application has been developed in android studio under the android platform. The version between which it is application is from Jellybean to Oreo. The full background process including the UI design through the XML has been done in a raw format without any drag and drop. The full application is developed with few instances. This is a user friendly application with a decorative logo at the front which brings in the user more connective to the application. Inside the application the user will be receiving few language such as SQL, C, JAVA, and C++, which might help him to grow his knowledge smoothly. A slider used at the second page of the application which includes all the attractive logos of the available programming languages might encourage the user as this is user friendly. This full rundown format of the background has been developed using the android studio, including the attractive user interface design.

```

public class MainActivity extends AppCompatActivity implements View.OnClickListener {

    private Button capter1, capter2, capter3, capter4;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        capter1= findViewById(R.id.capter1);
        capter2= findViewById(R.id.capter2);
        capter3= findViewById(R.id.capter3);
        capter4= findViewById(R.id.capter4);

        capter1.setOnClickListener(this);
        capter2.setOnClickListener(this);
        capter3.setOnClickListener(this);
        capter4.setOnClickListener(this);
    }

    @Override
    public void onClick(View view) {

        Intent i= new Intent(getApplicationContext(), ShowActivity.class);

        switch (view.getId()){
            case R.id.capter1:
                startActivity(i);
                break;
        }
    }
}

```

Figure 2.1: Android Studio

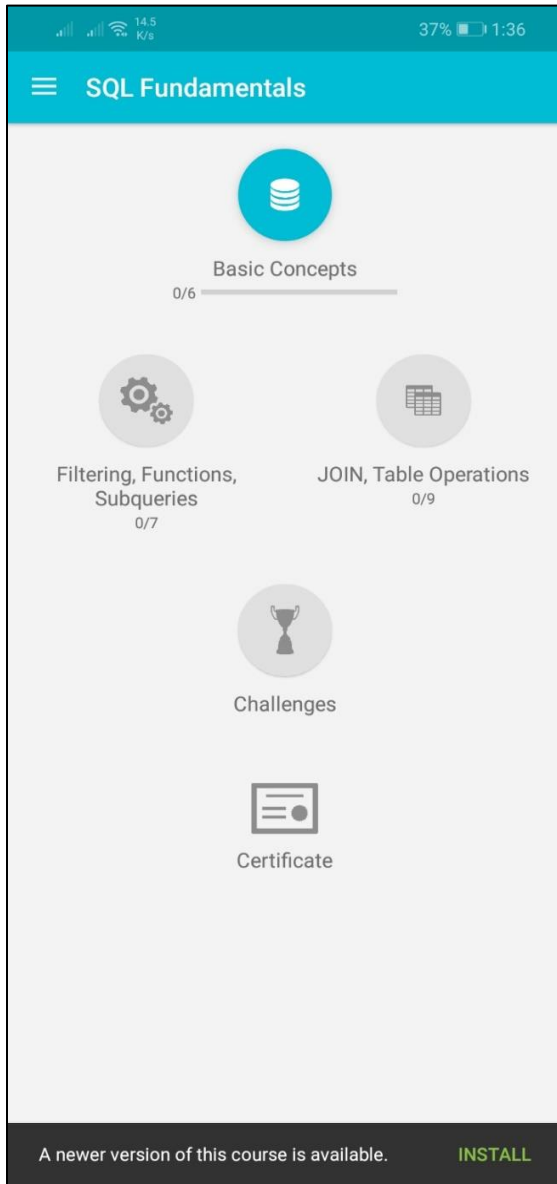
## 2.2 Related Works

There are different applications available at the google play store which are termed as the learning applications for different learners. The name of some of the applications are given below:

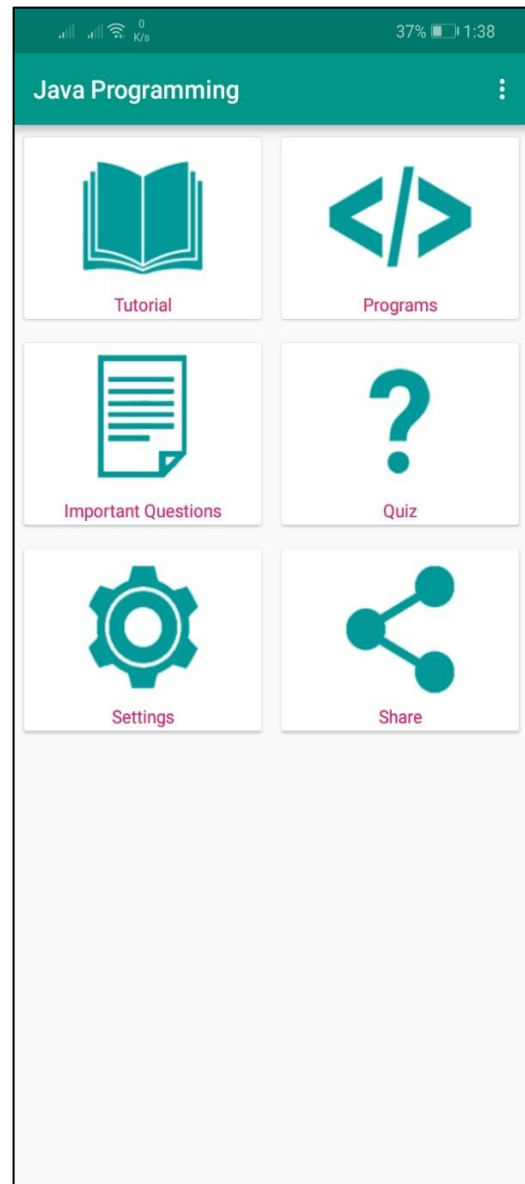
1. Learn C
2. Learn C++
3. Learn Java
4. Learn SQL

Apart from this four applications which are mentioned above, there are such so many applications which are available at the online platform for the learning purposes. The application named as Skill Book which is developed is nevertheless almost the same as the given applications. These above mentioned applications helps the user to learn the programming languages and test them their knowledge through different question and answers which are loaded before inside the application. Some of those applications which are available online are paid. So, for most of the users who uses the internet, it is not that easy for them to buy an application from online to study, except for those who can effort those. In spite of those paid applications, there are few un paid or free applications also available which enriches the users and motivate them to download them and learn the users desired language and help them to grow.





(a)



(b)

Figure 2.2: (a) and (b) Related App

## 2.3 Comparative Studies

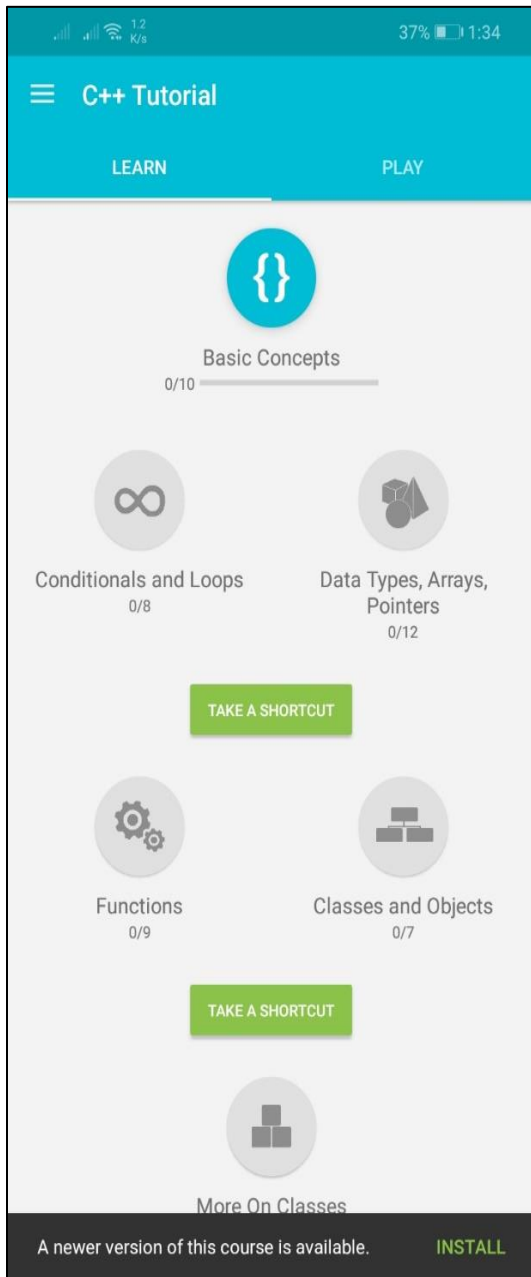
As it is already mentioned in the previous lesson that a huge number of application is already available in the google play store which matches with the criteria of the application which has been developed by us for the final defense. The name of some of the applications which are available at the online are already mentioned in the previous lesson.

In case of comparison with the applications which are available online and with the application that we have developed; the basic things which reflects in our eyes or in the user eyes are mentioned below.

Let us compare the whole process with an application named as Learn C++;

Table 2.1: Compare with Learn C++ and Skill Book

<b>Learn C++</b>	<b>Skill Book</b>
Paid Application	Free Application
Not User Friendly	User Friendly Application
Only One language available	Maximum 4 languages available (for now)



(a)



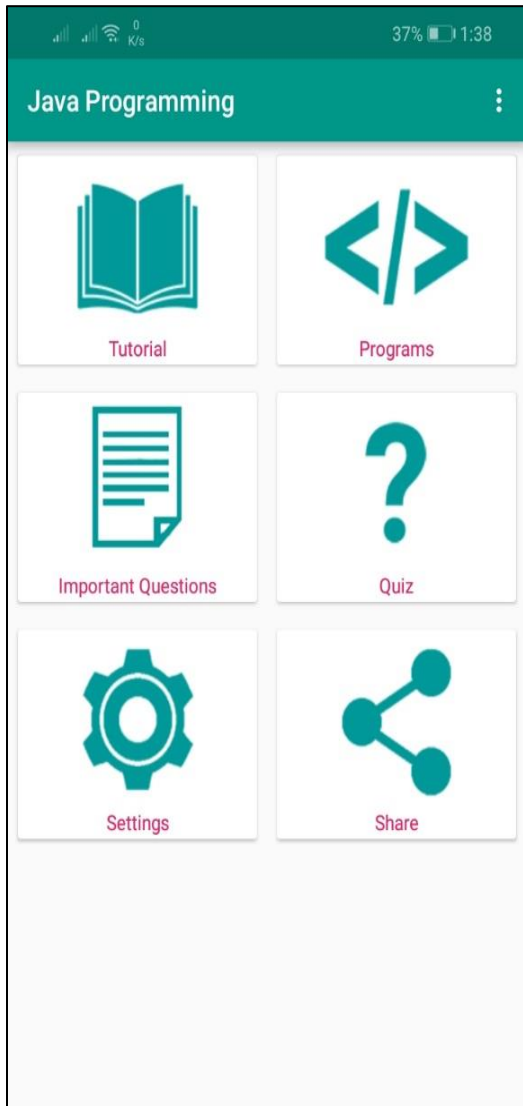
(b)

Figure 2.3: (a) Learn C++ and (b) Skill Book

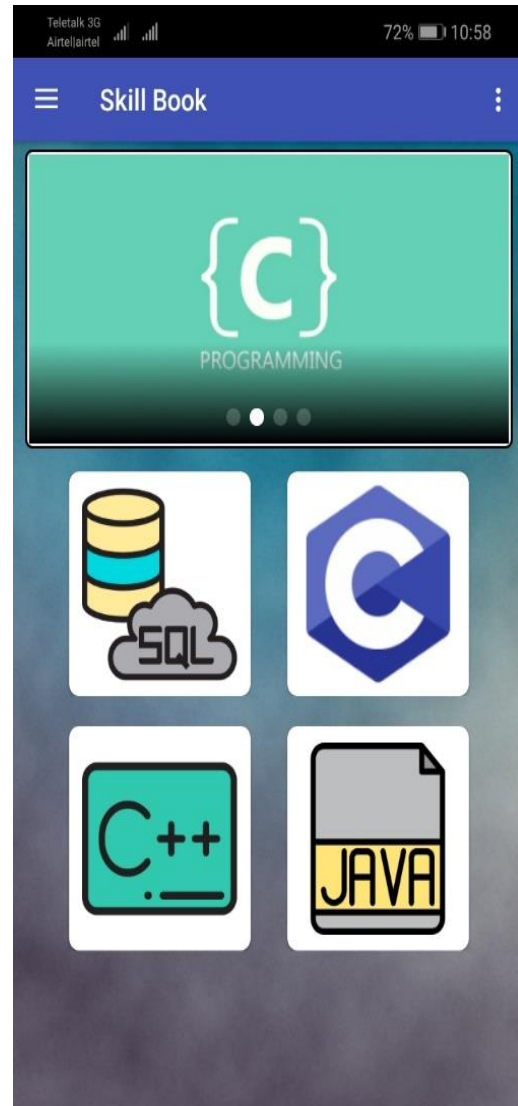
## **2.4 Scope of the Problem**

The developed application named as Skill Book which has been developed under the android platform summarizes the programming languages which can help any user to learn it thoroughly from online. Apart from the book study, which we regularly do, it can be a very appropriate platform for the user to learn different languages as the whole online portal is now a days open for all.

The basic problem that might arise after developing the application, is distributing it to the majority of the user who are their waiting to learn. As the application is fully developed in android and has been uploaded in the google play store, it has become a bit challenging for the developers to market their applications and deliver their applications to the users who are already waiting in the platform to learn. Similarly, the biggest scope of the problem for our application is the same. The marketing of the application can be a problem or a major issue for us as it has just been developed. But considering the facts of the user friendly nature of the application as well as the number of languages present inside the application, it can be a way easier than other application to reach the user in a small amount of time which might help the user to get attached to the system and start learning all the things from our application named as Skill Book.



(a)



(b)

Figure 2.4: (a) Java learning App vs (b) Skill Book App

## **2.5 Challenges**

The first and foremost challenges that has been faced during the development of the application named as Skill Book, has been adding different languages inside a same platform. The languages which are available inside the Skill Book application are SQL, JAVA, C++ and C. There are already many applications available in the online which includes different languages. But in the application named as Skill Book, the user can avail 4 languages at a time to learn and develop themselves in the context of this global arena.

As the number of language availability is higher, the number of challenges is also higher in this context. The basic challenge of adding all the details about these languages was the basic challenge which required a perfect coding in the android studio as well as practical sense of all the languages that are available inside the application. Apart from this challenge, the whole application was developed so smoothly with the help of a perfect team and is already available in the google platform which enriches the possibility of this application to grow higher in the near future.

# CHAPTER 3

## Requirement Specification

### 3.1 Business Process Modeling

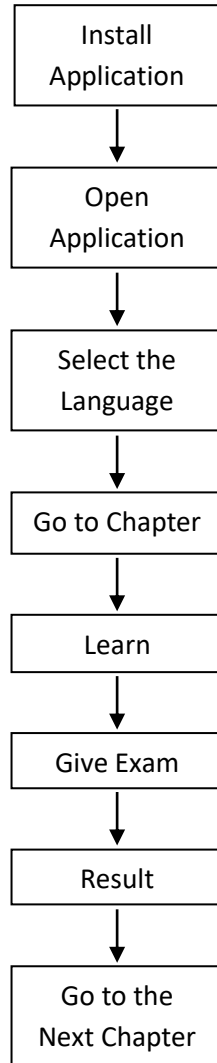


Figure 3.1: Context Data Flow Diagram

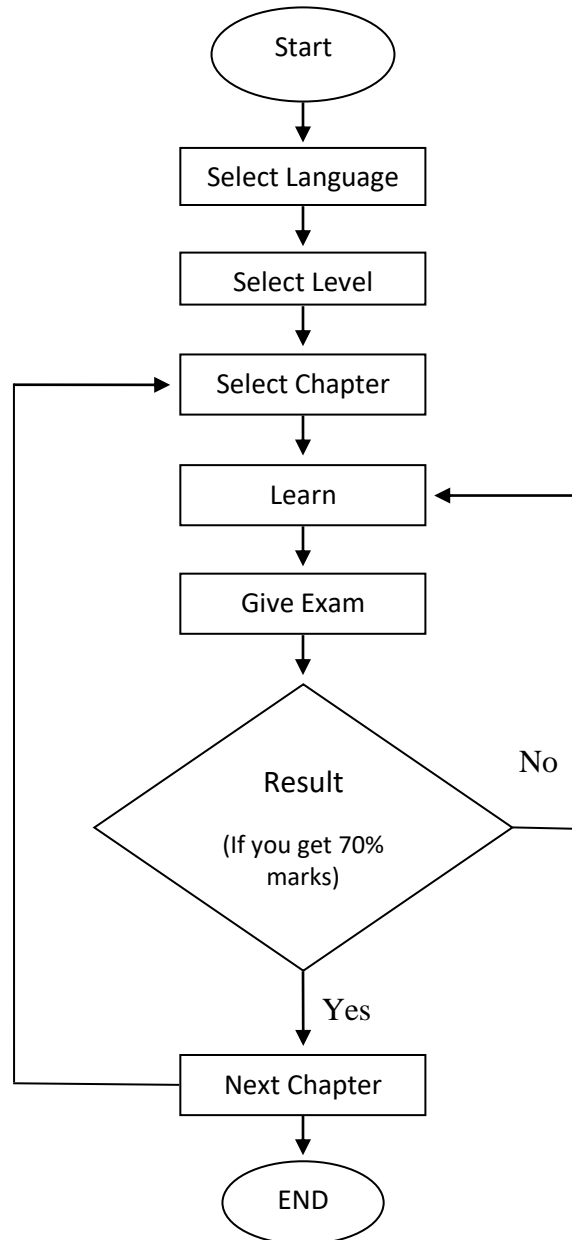


Figure 3.2: Level Data Flow Diagram

There are different business process model that are available to follow. Out of all those, we have followed Waterfall Process Model for our Skill Book application. The usage of the Waterfall model have made it much easier for the development of the application. DFD illustrates how data is processed by a system in terms of inputs and outputs [2]. The steps of the Waterfall model on the Skill Book application has been charted above.



## **3.2 Requirement Collection and Analysis**

Requirement collection and analysis is one of the primary phases of application development. For development, there are two type of requirement, one functional requirement and two non-functional requirement [3]. Functional requirement is the functionalities that, application software can perform [4]. On the other side, non-functional requirement defines the characteristics of an application that, the application is smoothie or not, performance issue of the application etc. [5].

In our application functional requirement is the logics we write in the code, like if we have to read a topic for a chapter you must have to complete the previous chapter and have to pass the exam. And if you want to read the advance topic you must have to complete or pass an exam then the part will be open. There are some other functional logics and requirements.

Non-functional requirements like GUI design, exam questions, chapter documents etc. There are no functionality in those thing and logics. We just collect data and input them as our content.

### 3.3 Use Case Modeling and Description

A use case is a description of how a user will use the system to be to accomplish business goals. Use cases are named with verb or verb + noun phrase [6], [7]. The two main components of a use case diagram are use cases and actor. Actor in a use case diagram is any entity that performs a role in one given system [8]. We can see a figure of use case and actor as follows:

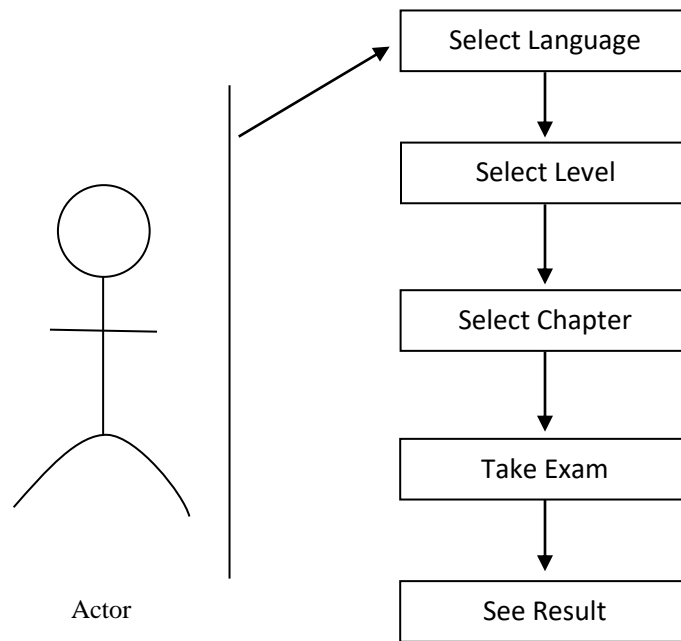


Figure 3.3: Use Case Diagram

### **3.4 Logical Data Model**

A logical data model describes the data in as much details as possible, without regard to how they will be physical implemented in the database. It includes all entities and relationship among them [9]. Actually Logical data model and physical data model both are present in Class Diagram. In Class diagram all attributes for each entity are specified. The primary class for each entity is specified. Modal key is specified and also specified all attributes type [10].

In Figure 3.4 Shown the projects Class diagram.



Figure 3.4: Class Diagram

### **3.5 Design Requirement**

Our project design requirement will differ from the other projects, because our project will be working on our specific problem statement and the application experience that we are designing. We try to provide all things to our application that are necessary for a user to operate our application easily. To run our application you must have Jellybean to Oreo series operating system in your android phone. We used the 27.0 version SDK as all users can use our application and face no problem. We try to make our app as simple as can and every user can understand our application.

## CHAPTER 4

### Design Specification

#### 4.1 Front-End Design



Figure 4.1: First portion of the front end design

The first portion of the front end design consists of the opening page of the application which includes a lucrative logo which might grow interest to the users to open the application more and avail its advantages. The color combination of the first page along with the logo creation has held a proper effect to the other pages of the applications.



Figure 4.2: Second portion of the front end design

The second page of the application shows the overall languages which are available at the application. There are four different languages which are available at the application through which the user can learn and acquire knowledge. All these languages are pointed and added in the slider.

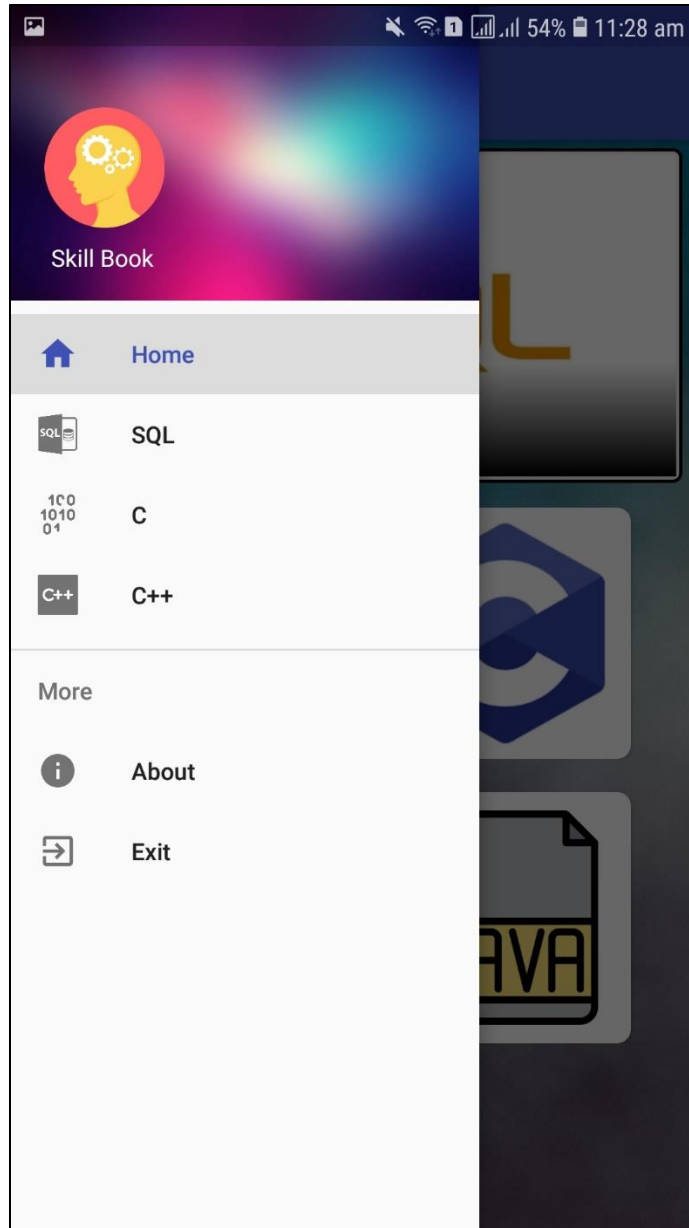


Figure 4.3: Third portion of the front end design

The third consecutive page includes the menu bar on the mobile view. The menu bar of the application includes the Home page followed by the three different language menu bar. At the lower part of the menu bar, there exists a share and a save button through which the user who is using the application can share the application and save the require data or learning that he has undergone.



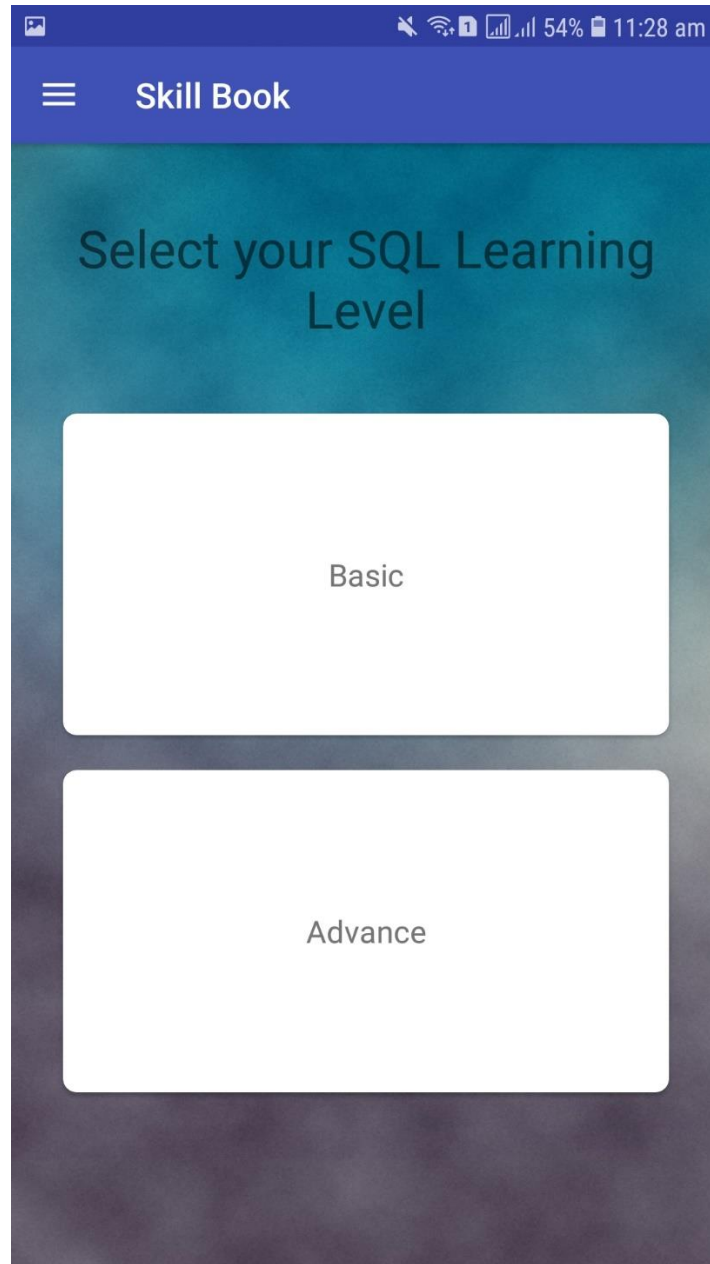


Figure 4.4: Fourth portion of the front end design

The fourth available page includes the division or the criteria of the available programming language. Suppose, if a user wants to learn the SQL language; after clicking on the desired language, the user will undergo a different page which will ask the user with an option of learning about the Basic or about the Advance level of that specific language which will go further upon the choice of the user.

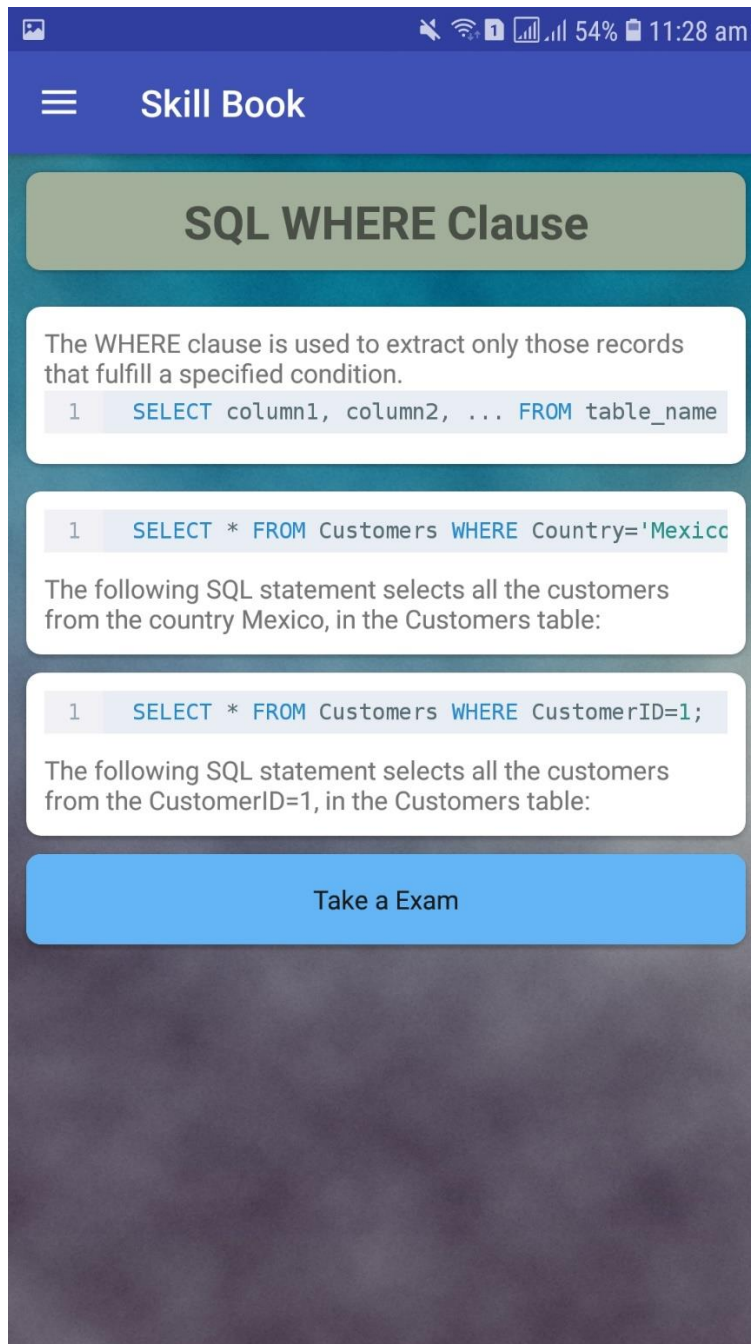


Figure 4.5: Fifth portion of the front end design

The next interface includes the available questions of the required language which will help the user to learn and improve their skills on the specific language. After answering and learning these questions the user will be giving an exam which will enroll the user to the next steps.

## 4.2 Back-End Design

```
public class MainActivity extends AppCompatActivity implements View.OnClickListener {

    private Button capter1, capter2, capter3, capter4;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        capter1= findViewById(R.id.capter1);
        capter2= findViewById(R.id.capter2);
        capter3= findViewById(R.id.capter3);
        capter4= findViewById(R.id.capter4);

        capter1.setOnClickListener(this);
        capter2.setOnClickListener(this);
        capter3.setOnClickListener(this);
        capter4.setOnClickListener(this);
    }

    @Override
    public void onClick(View view) {

        Intent i= new Intent(getApplicationContext(), ShowActivity.class);

        switch (view.getId()){
            case R.id.capter1:
                startActivity(i);
                break;
        }
    }
}
```

Figure- 4.6: Back end design

The back end design is fully designed on the android studio. The version of the android studio is already mentioned on the top of the report. Apart from this the UI design has been done by using the XML of the android studio which has somehow improved the overall interface of the application.

## 4.3 Android Overview

Android delivers a complete set of software for mobile devices an operating system middleware and key mobile application [11].

### 4.3.1 Basic Android Overview

Android is championed by Google and owned by Open Handset Alliance. Android is a comprehensive platform, which means it is a complete software stack for a mobile device. It provides all the tools frameworks for developing mobile app applications quickly and easily. Android is also open source platform, which means it is most of the stack from low-level native, Dalvik virtual machine, application framework and standard application all are totally open [12].

### 4.3.2 Android Version

Since April 2009, Android version have been developed under a confectionery- themed code name and released in alphabetical order; the exceptions are version 1.0 and 1.1 as they were not released under specific code name [13]:

Alpha (1.0)

Beta (1.1)

Cupcake (1.5)

Donut (1.6)

Éclair (2.0-2.1)

Froyo (2.2-2.2.3)

Gingerbread (2.3-2.3.7)

Honeycomb (3.0-3.2.6)

Ice Cream Sandwich (4.0-4.0.4)

Jelly Bean (4.1-4.3.1)

Kitkat (4.4-4.4.4)

Lollipop (5.0-5.0.2)

Marshmallow (6.0)

Noughat (7.0-7.1)

Oreo (8.0-Present)

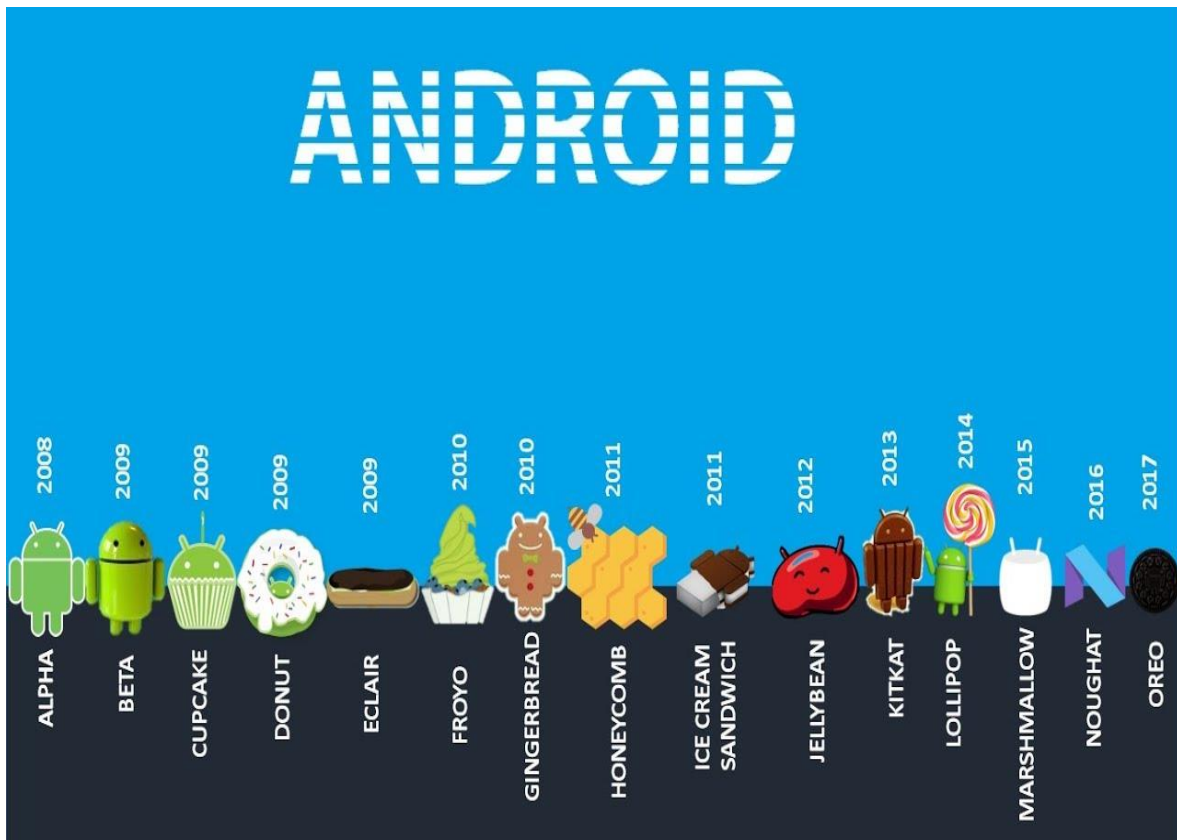


Figure 4.7: Android versions

Figure 4.7 is the Android version with codenames. The android version number itself partly tells the story of the software platform's major and minor releases. The most important thing is the API level. Version number change all the time, sometimes the APIs have changed, and other times because of minor bug fixes of performance improvements [14].

### 4.3.3 Android SDK [V27.0.1]

To develop Android application, Android SDK is the essential tool. This SDK is very adds support for legacy multidex for test APKs. We use Android Studio together to run and develop all the Android application [15], [16].

## CHAPTER 5

### System Testing

#### 5.1 System Overview

As we all already know that the overall system has been developed on android studio under the platform android. So, the overall system has to be tested on the android platform too. For the testing purpose of the application we have used an android device named as HUAWEI NOVA 3i. The device completely matches with the specifications which is required to run the application named as Skill Book. The android version of the device also matches with the overall specifications of the application. Few screenshots of the applications that has been ran on that specific testing device are given below:

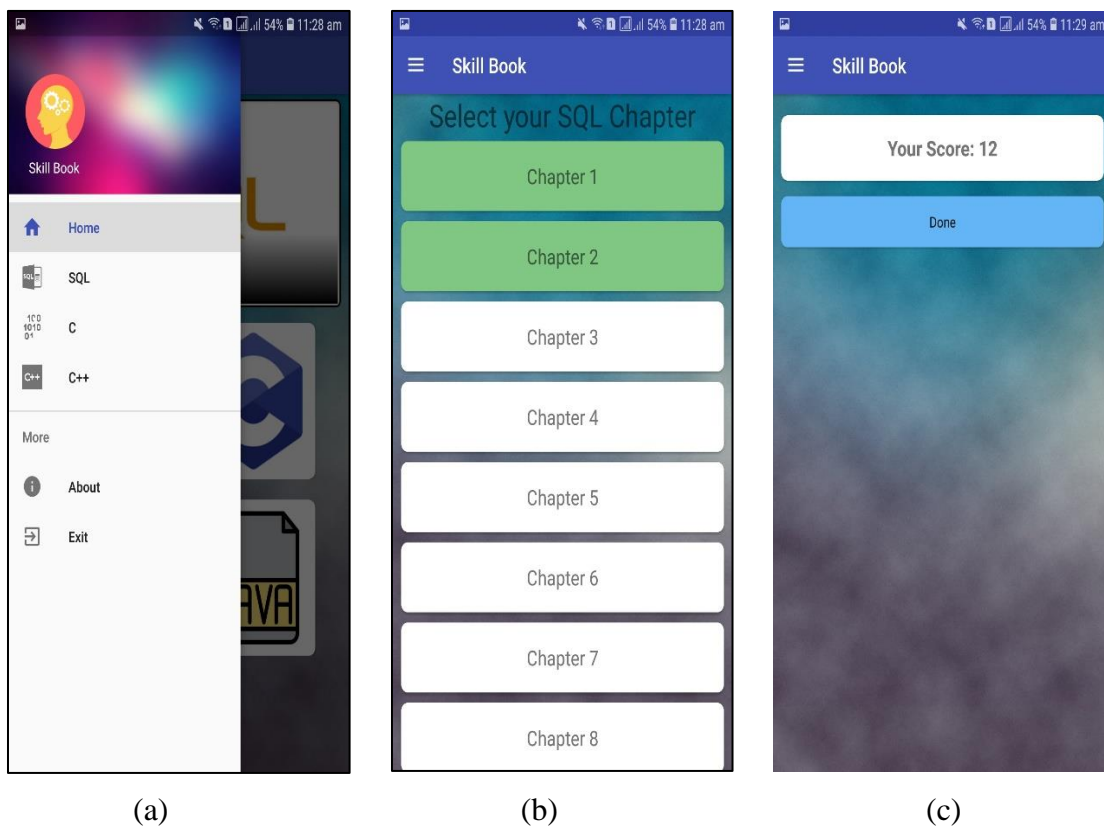


Figure 5.1: (a), (b) and (c) Application system testing

The above mentioned screenshots strongly proves the testing part of the application which has run smoothly as a test on the following device.

## 5.2 System Steps

The steps in this app are given in the sub points. How the app is working step by step and the basic works are given.

### 5.2.1 Application Home page

When you open the app this page will open and it appears with some sub buttons.



Figure 5.2: Application Home

## 5.2.2 Navigation drawer

There is a navigation drawer in this application. From where you can select button or language or exit.

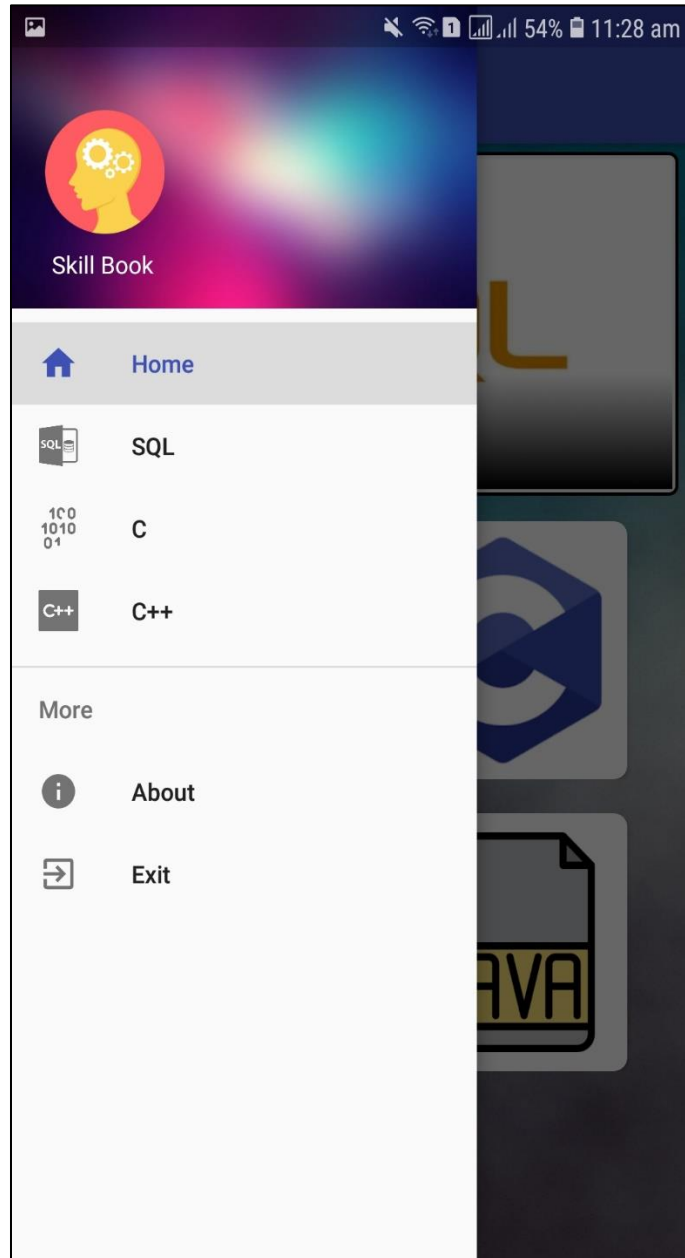


Figure 5.3: Navigation Drawer



### 5.2.3 Chapter List

When you select any language then chapter selecting option will appear. This page can be included multiple chapters. But there is a condition you must have to complete the chapter ascending order. If do not passed in the previous chapter you can't able to go to the next chapter.

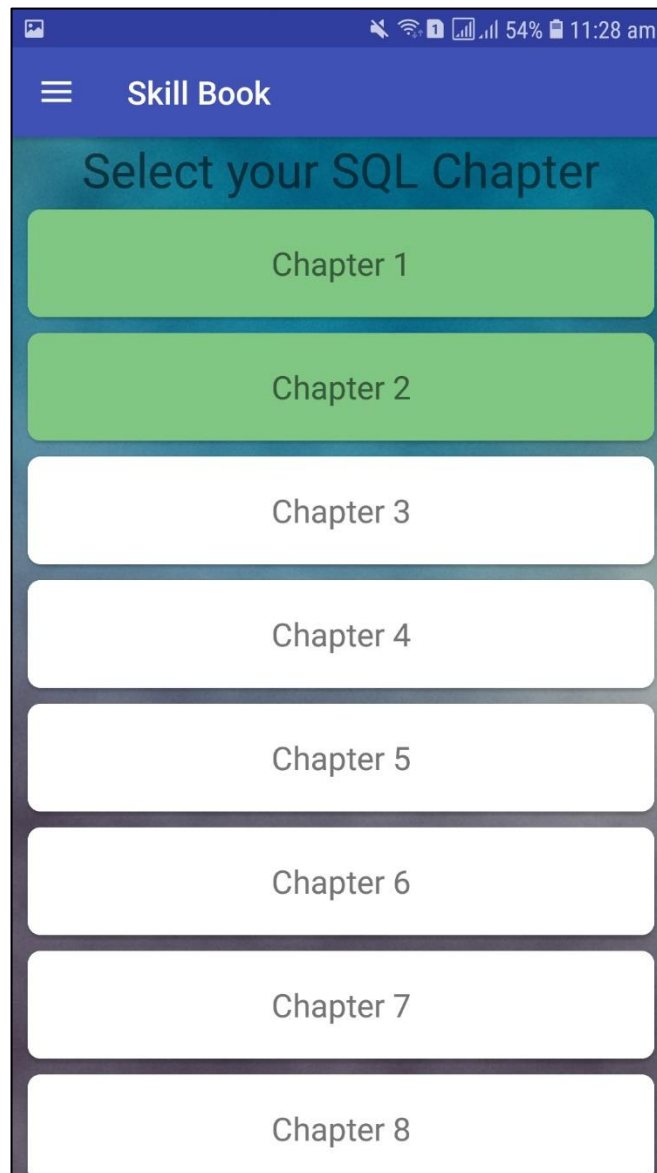


Figure 5.4: Chapter List

## 5.2.4 Attending exam

By clicking the exam button this exam questions will appear with MCQ options with finishing button.

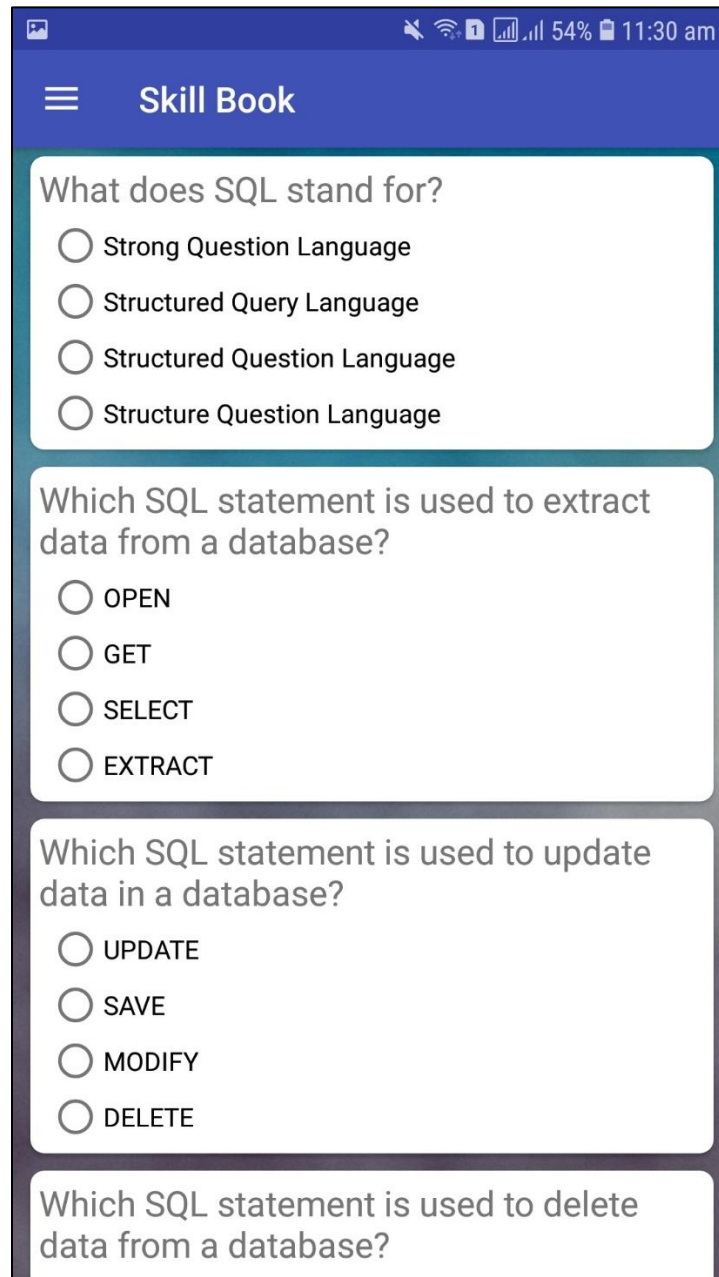


Figure 5.5: Attending Exam

### 5.2.5 Result

This page shows you the result of your exam and the correct answers. There is a button named done. If you press this it will redirect to the home page.

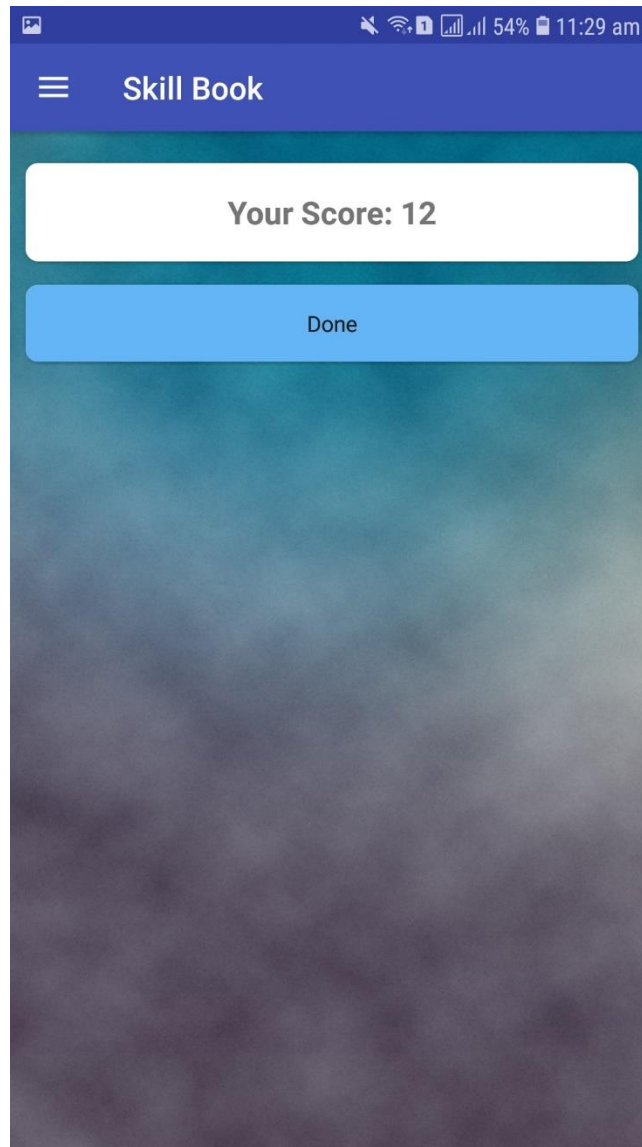


Figure 5.6: Result

All the languages are in those steps and same process. Those are the basic steps and process of our application.

## **Chapter 6**

### **Conclusion and Future Work**

#### **6.1 Conclusion**

The application named as Skill Book has been developed as a course project for the final defense, yet this project can be used in massive population by spreading it in online by uploading it in the google play store and making it easy for the overall user to download the application and learn the basics of programming languages and built themselves strongly for this technological world.

Apart from this, this application will be highly in use to the self-development of the maker of the application. As this modern world is growing so fast on the context of its technological development, this application can be a role model in creating a huge vibe on the learners who can and who is interested to grow up their career in a technological field. This application will help them to build their basic on different programming language which they can use in different aspects of their career and in any other field.

The future plan surely consists of bringing this application in the top 5 downloadable application in the play store. As this application has been already added on the play store, so we will be hoping and working hard to bring this application in the top 5 position in the play store search.

## **6.2 Limitations**

There are some limitations in this application. User generally used three platform Android, IOS, and Windows. The limitations is that application support only android platform. Another key limitations is that application is not support multiple language.

## **6.3 Future Work**

Our objective is to extend the market of this application all around the world. To achieve this objective we need to develop our application IOS supported. We also gradually add other language like Bengali, Hindi etc. We'll make this application for online based. This application will include video tutorial for every chapter and every language.

## REFERENCES

- [1] “C. Sally, E. Jean. “Understanding outcomes”, available at: <<<http://www.hcvs.org.uk/resources/yourprojectanditsoutcomes-139-146.pdf>>>, last accessed on 03-20-2018.
- [2] “Data Flow Diagram”, available at: <<<http://www.smartdraw.com/data-flow-diagram/>>>, last accessed on 09-21-2018.
- [3] “Requirement Collection”, available at: <<[http://en.wikipedia.org/wiki/Requirements\\_analysis/](http://en.wikipedia.org/wiki/Requirements_analysis/)>>, last accessed on 09-22-2018.
- [4] “Functional requirement”, available at:<<[https://www.tutorialspoint.com/software\\_testing\\_dictionary/functional\\_requirements.htm](https://www.tutorialspoint.com/software_testing_dictionary/functional_requirements.htm)>>, last accessed on 11-21-2018.
- [5] “Non-functional requirement”, available at: <<<http://users.cse.calpoly.edu/~jdalbey/SWE/QA/nonfunctional.html>>>, last accessed on 09-22-2018.
- [6] “Writing Effective Use Case”, available at: <<<http://www.visual-paradiagn.com/tutorials/writingeffectiveusecase.jsp>>> last accessed on 09-24-2018.
- [7] “Use Case Model”, available at: <<[http://sce.uhcl.edu/helm/RationalUnifiedProcess/process/modguide/md\\_ucmod.html](http://sce.uhcl.edu/helm/RationalUnifiedProcess/process/modguide/md_ucmod.html)>>, last accessed on 09-24-2018.
- [8] “Use Case Model”, available at: << [http://epf.eclipse.org/wikis/openup/core.tech.common.extendsupp/guidances/concepts/usecasemodel\\_CD178AF9.html](http://epf.eclipse.org/wikis/openup/core.tech.common.extendsupp/guidances/concepts/usecasemodel_CD178AF9.html) >> last accessed on 09-24-2018.
- [9] “Logical Data Model”, available at: <<<http://www.1keydata.com/datawarehousing/logical-datamodel.html>>>, last accessed on 09-24-2018.
- [10] “Class Diagram”, available at: <<http://smartdraw.com/entity-relationshipdiagram/>>>, last accessed on 09-24-2018.
- [11] “Android Overview”, available at: <<[https://www.tutorialspoint.com/android/android\\_overview.htm](https://www.tutorialspoint.com/android/android_overview.htm)>>, last accessed on 11-21-2018.

[12] “Basic Android Overview”, available at: <<<http://www.safaribooksonline.com/library/view/learning-android2nd/9781449336226/ch01.html>>>, last accessed on 09-25-2018.

[13] “The Android Story”, available at: <<<http://www.android.com/history>>>, last accessed on 09-25-2018.

[14] “API Level”, available at: <<<http://www.dre.vanderbilt.edu/~schmidt/android/android-4.0/out/target/common/docs/doc-comment-check/guide/appendix/api-levels.html>>>, last accessed on 11-21-2018

[15] “Android SDK”, available at: <<<https://developer.android.com/studio/releases/build-tools>>>, last accessed on 09-11-2018.

[16] “Android SDK”, available at: <<<https://www.techopedia.com/definition/4220/android-sdk>>>, last accessed on 11-21-2018.

## APPENDICES

### Appendix A: Some Source Code

Tools and technologies

- ❖ Java
- ❖ SQL query
- ❖ Android
  - i. Android Studio
  - ii. Android SDK
  - iii. Activity
  - iv. SQLite
  - v. JSON

Here is some back end source code using JAVA.

#### For Home Activity:

```
public class HomeActivity extends NavigationActivity {  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        LayoutInflater inflater = (LayoutInflater)  
        this.getSystemService(Context.LAYOUT_INFLATER_SERVICE);  
        View contentView = inflater.inflate(R.layout.activity_home, null, false);  
        drawer.addView(contentView, 0);  
        navigationView.setCheckedItem(R.id.nav_home);  
    }  
    @Override  
    public void onBackPressed() {  
        drawer = findViewById(R.id.drawer_layout);
```



```

if (drawer.isDrawerOpen(GravityCompat.START)) {
    drawer.closeDrawer(GravityCompat.START);
} else {
    if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.JELLY_BEAN) {
        finishAffinity();
    } else {
        super.onBackPressed();
    } } } }

```

### For Navigation Activity:

```

implements NavigationView.OnNavigationItemSelectedListener {
    Toolbar toolbar;
    DrawerLayout drawer;
    NavigationView navigationView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_navigation);

        toolbar = findViewById(R.id.toolbar);
        setSupportActionBar(toolbar);
        drawer = findViewById(R.id.drawer_layout);
        ActionBarDrawerToggle toggle = new ActionBarDrawerToggle(
            this, drawer, toolbar, R.string.navigation_drawer_open,
            R.string.navigation_drawer_close);
        drawer.addDrawerListener(toggle);
        toggle.syncState();
        navigationView = findViewById(R.id.nav_view);
        navigationView.setNavigationItemSelectedListener(this); }
    @Override

```

```

public void onBackPressed() {
    drawer = findViewById(R.id.drawer_layout);
    if (drawer.isDrawerOpen(GravityCompat.START)) {
        drawer.closeDrawer(GravityCompat.START);
    } else {
        super.onBackPressed();    } }
@Override
public boolean onCreateOptionsMenu(Menu menu) {
    getMenuInflater().inflate(R.menu.navigation, menu);
    return true; }
@Override
public boolean onOptionsItemSelected(MenuItem item) {
    int id = item.getItemId();
    if (id == R.id.action_settings) {
        return true;
    }
    return super.onOptionsItemSelected(item);
}
@SuppressWarnings("StatementWithEmptyBody")
@Override
public boolean onNavigationItemSelected(MenuItem item) {
    Intent intent= new Intent(getApplicationContext(), LevelActivity.class);
    switch (item.getItemId()){
        case R.id.nav_home:
            intent = new Intent(getApplicationContext(), HomeActivity.class);
            startActivity(intent);
            break;
        case R.id.nav_sql:
            startActivity(intent);
            break;
        case R.id.nav_c:

```

```

        startActivity(intent);
        break;
    case R.id.nav_cpp:
        startActivity(intent);
        break;    }
    drawer = findViewById(R.id.drawer_layout);
    drawer.closeDrawer(GravityCompat.START);
    return true;    } }

```

### For Main Activity:

```

implements View.OnClickListener {
    private Button capter1, capter2, capter3, capter4;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        capter1= findViewById(R.id.capter1);
        capter2= findViewById(R.id.capter2);
        capter3= findViewById(R.id.capter3);
        capter4= findViewById(R.id.capter4);
        capter1.setOnClickListener(this);
        capter2.setOnClickListener(this);
        capter3.setOnClickListener(this);
        capter4.setOnClickListener(this);
    }
    @Override
    public void onClick(View view) {
        Intent i= new Intent(getApplicationContext(), ShowActivity.class);
        switch (view.getId()){
            case R.id.capter1:

```

```

        startActivity(i);
        break;
    case R.id.capter2:
        break; } } }

```

### For My Json Object Adapter:

```

public MyJsonObjectAdapter(Context context, List<ModelExample>
modelExamples) {
    super(context, R.layout.listitem, modelExamples);
    this.context = context;
    this.modelExamples = modelExamples;
}
@NonNull
@Override
public View getView(final int position, @Nullable View convertView, @NonNull
ViewGroup parent) {
    LayoutInflater inflater=(LayoutInflater)
context.getSystemService(Context.LAYOUT_INFLATER_SERVICE);
    View v=inflater.inflate(R.layout.listitem,parent,false);

    TextView example_syntax= v.findViewById(R.id.example_syntax);
    TextView example_description= v.findViewById(R.id.example_description);
    example_syntax.setText(modelExamples.get(position).geteSyntex());
    example_description.setText(modelExamples.get(position).geteDiscription());
    return v; } }

```

# PLAGIARISM

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