

About Reverie Language Technologies Pvt. Ltd

Reverie Technologies, founded in late 2006, is the brainchild of like-minded people driven by passion to make life much simpler and exciting through technologies. Consider being able to send SMS through your mobile phone vernacular language or any language of your choice. Consider watching TV on your mobile phone. Consider your mobile phone replacing all the credit/debit/smart cards that you carry. Be it mobile computing, linguistic solution, or other technology Reverie is designing, *“innovation for simplicity and excitement”* is the driving force behind the company. That is the reason why Reverie Language Technology is selected as the Qualcomm’s Q prize winner in the year 2011.

At Reverie, the people focuses on creating futuristic technologies and solutions for communications which are innovative, open-standards based that can be easily integrated on most global platforms. Their competence is in combining technology and understanding of human needs to give a human touch to their products and technologies. This underlying fact can be found in all their products and solutions offering. They continue to offer innovative products and quality services to their customer’s ever-growing requirements

Reverie develops technologies to enable use of multiple languages within applications by using the reverie tools in the applications. The tools are provided through libraries offered by Reverie for various platforms. **“The Mobile SDK Licensing manager”** is a tool to be able to validate and track the license of an application that uses the Reverie SDK.

The SDK i.e. Software Development Kit is a programming package that enables a programmer to develop applications for a specific platform. Typically an SDK includes one or more APIs, programming tools, and documentation. Reverie Language Technologies Pvt. Ltd develops such SDKs for application development and delivers to its customers. Our tool “The Mobile SDK Licensing manager” is basically required for tracking the license of such applications that are using Reverie SDK.

The components involved in the above process are following:

1. The License Management Server
2. The Mobile Handset with Application that requires license validation
3. The Android broker which acts as an SMS gateway

1.1 Project Profile

1.1.1 Project Title

Development of The Mobile SDK Licensing Manager tool.

1.1.2 Problem Statement

To develop a tool to verify and track the applications using Reverie SDK.

1.1.3 Undertaken By

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MCA 6th Semester,
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1.1.4 Guided By

Internal Guide :
Assistant Prof. **Mr. S. Ibotombi Singh**
Department of Computer Science and Engineering.
Tezpur University.

External Guide :
Mr. Vivekananda Pani
CTO
Reverie Language Technologies Pvt. Ltd, Bangalore

1.1.5 Organisation

Reverie Language Technologies Pvt. Ltd
www.reverie.co.in

1.1.6 Location

Bangalore.

1.1.7 Environment

Platform : Windows.
Programming Language : PHP, Java, Ajax, Java Script, Android Java.
IDE : Eclipse, Notepad++.

1.2 Objectives

The project has the following objectives:

1. Development of an environment where customers can register themselves for SDK request.
2. Providing unique SDK IDs to the customers.
3. Providing SDK license validation and checking the usages of the application that is using Reverie SDK on the basis of the message received from the handset having that application installed.

1.3 Deliverables

1. The Mobile SDK Licensing Manager tool.
2. Documentation of the project.

When we were given the topic to work upon by Reverie Language Technologies, it was our first concern to know about the area as we hardly had any knowledge about the SDK management and mobile domain. Initially we started studying about SDK and Android. We studied the fundamental concepts about Android, about how various applications are developed using Android. So in the coming section we would give a brief detail about SDK and Android in the project report.

2.1 About SDK

An SDK that is Software Development Kit is basically a software development tool that allows for the creation of applications for a software package, hardware platform or similar development platform. It may be something as simple as an application programming interface (API) in the form of some files to interface to a particular programming language or include sophisticated hardware to communicate with a certain embedded system. SDKs also frequently include sample code and supporting technical notes or other supporting documentation to help clarify points from the primary reference material. SDKs may have attached licenses that make them unsuitable for building software intended to be developed under an incompatible license. SDK can be downloaded directly via the Internet. Many SDKs are provided for free to encourage developers to use the system or language. Sometimes this is used as a marketing tool.

2.2 About Android

2.2.1 Android Fundamentals

Android is a software stack for mobile devices that includes an operating system, middleware and key applications. Android applications are written in the Java programming language. The Android SDK tools compile the code along with any data and resource files into an *Android package*, an archive file with an .apk suffix. All the code in a single .apk file is considered to be one application and is the file that Android-powered devices use to install the application.

Once installed on a device, each Android application lives in its own security sandbox:

1. The Android operating system is a multi-user Linux system in which each application is a different user.

2. By default, the system assigns each application a unique Linux user ID (the ID is used only by the system and is unknown to the application). The system sets permissions for all the files in an application so that only the user ID assigned to that application can access them.
3. Each process has its own virtual machine (VM), so an application's code runs in isolation from other applications.
4. By default, every application runs in its own Linux process. Android starts the process when any of the application's components need to be executed, then shuts down the process when it's no longer needed or when the system must recover memory for other applications.

3.1 Problem Definition

To develop a tool called “The Mobile SDK Licensing Manager” to validate and track license of an application that uses the Reverie SDK.

3.2 The Proposed System

It has been proposed to automate the SDK requests of the customers and track the license of the SDKs of the application that is using Reverie SDK.

The following are the steps in order to implement the proposed system:

1. Building an interface where the customers can register for SDK requests.
2. The registered customers can request for required SDKs in which they will be provided with unique SDK ID.
3. After the SDK is delivered and the application is developed, and installed in a handset a message will be sent to an android broker, which acts as a SMS gateway, which will be further forwarded to the server using HTTP post.
4. Based on the incoming binary message the server checks the usage of the SDK and responds to the handset.

3.3 Scope of the System

The first part of the proposed tool “The Mobile SDK Licensing Manager” is build using PHP,using which the customers can register with Reverie website anywhere and can requests for SDKs. Moreover the Android Broker is developed using Eclipse and it can track all the messages that arrives to it and forwards to the Server as soon as it receives a binary message using HTTP post.

3.4 Context Diagram:

The Context Diagram is the most abstract data flow representation of a system. It represents the entire system as a single bubble. The bubble is labeled according to the main function of the system. The various external entities with which the system interacts and the data flows occurring between the systems external entities are also represented. The context diagram is also called level 0 DFD.

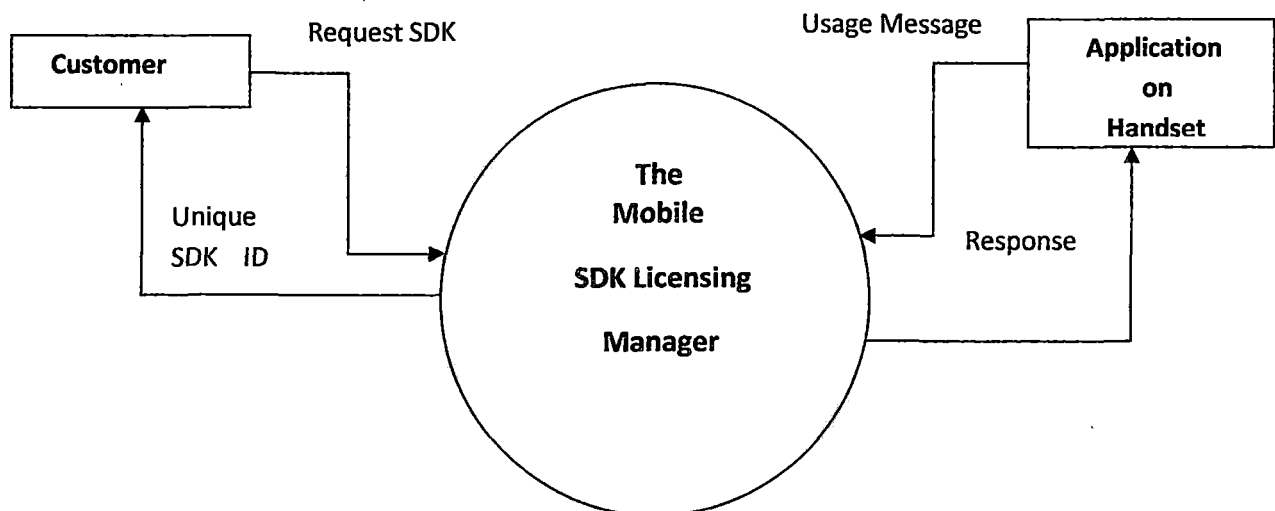


Fig. Level 0 DFD of “Mobile SDK Licensing Manager”

3.5 Scope of this Project

This project has been done in the sixth semester of Master of Computer Application (MCA) course of “Tezpur University”. The period of work is roughly five months and within this period we have achieved the following part of the proposed system

1. Creating an user interface for registration and request for Reverie SDKs.
2. After successful request provide the user with unique SDK Ids.

3. After successful installation of the application developed using the reverie SDK track the SMS by an Android Broker, for validation of the license of the SDK, and send it to the server.
4. Read the SMS in the server and get the information encoded in it and responds back to the handset.

3.6 System Development Approach

As we know that every branch of engineering has its own method of application development. Here for developing our proposed application we have followed the software engineering approach. Given below are several stages of software development life cycle.

FEASIBILITY TEST: From every point of view such as technical, financial, environmental, our proposed system is feasible to develop. We would not face any problem while developing the proposed application.

APPLICATION REQUIREMENT ANALYSIS: Since our proposed application is self explanatory. By studying already available document we were able to find out the requirement for the application. However regular contact with our guide sharpened our understanding about the application which was to be developed.

SYSTEM DESIGN: Regarding our project, this phase takes more effort to realize the system.

Architecturally we have broken the whole application into the following conceptual parts below.

1. Development of an interface for customer registration and customer requests for SDKs.
2. Development of an android application that receives a message from a handset and further posts it to the server, which gets stored in the server database.
3. Implementation to extract the information from the message received in the server to check the usage of the license of the SDK ,used in development of the application.

SYSTEM IMPLEMENTATION: To implement the system, PHP, Javascript, AJAX, MySql, Java and Android Java were used.

SYSTEM TESTING: System Testing was conducted with different test data during as well as after the development of the system.

SYSTEM INTERPRETATION: Results or outputs of the system were interpreted using web browser Mozilla Browser and Eclipse application.

A feasibility study is test of system proposal to its workability, impact on organization, ability to meets the user needs, an effective use of the resources. After the initial investigation the next step is to expected performance.

The feasibility study is the feasibility report directed to the management, it evaluates the changes on the areas in question. The feasibility study outlines-

- 1) Analysis of system
- 2) *The way to do jobs better that will benefit the user*
- 3) The cost and benefits of the alternatives
- 4) Determine the main output requirements

There are three key consideration involved in the feasibility analysis:

4.1 Economical Feasibility

Economical Feasibility looks at the financial aspects of the project. It is most frequently used technique for evaluating the effectiveness of proposed system.

4.2 Technical Feasibility

Technical Feasibility determines whether the technology needs by proposed system is available and how this technology needs by proposed system is available and how this technology can be integrated within the organization.

4.3 Behavioral Feasibility

It is mainly related to human, organization and political aspects. Proposed project are beneficial only if they can be turned into information systems that will meet the operating requirements of the organization.

Since our proposed application is simply feasible, technically this system is feasible because whatever technology is needed is known to us and to clear out the confusion we meet our guide and other members of the organisation.

Financially this application is feasible. The main resource we required was My Eclipse 6.0, emulator, a database server.

4.4 Conclusion

From the above observation made in feasibility study described above it was recommended that the proposed system is feasible and justified that the feasibility followed by the system analysis and the system design phase.

System study is a detailed study of various operations performed by a system and their relationships within and outside the system. It is a systematic technique that refines its goals and objectives. The goal of the system development is to deliver the system in line with the user's requirement, analysis in the heart of the process.

Our proposed system is self explanatory. We could easily understand the basic requirement. However for more deep knowledge and for better understanding about the application we used to consult regularly with our project guide Mr. Vivekananda Pani and we have gained knowledge also from the documents available. With our best knowledge we assume that there will be no chance of inconsistency while fulfilling the requirement.

5.1 Project Specification:

Briefly stated the process of SDK request, SDK license validation request and usage check process:

1. When a customer (an application developer) has to build an application, the developer needs SDK for application developing.
2. To access our system a customer has to register himself first to our system.
3. The developer who is already registered to our web service then requests us for required SDK by providing their requirements.
4. On getting their request our system has to provide the customer a unique SDK id, which is packed in a specific size of byte array.
5. Later the Administrator of Reverie looks at the request and delivers the SDK to the customer.
6. Then the customer builds the application using that SDK. Such SDKs are of two types, one is the Trial version and the other is Developer version of specific period.
7. After the application has been built and installed on a phone that phone sends messages for checking the usages of the different languages that were used on that application periodically.
8. Such messages are sent to the server from which our system extracts the usage information of a specific period.

This section of the report is well known as SRS document. The SRS document is actual multi user document, this is meant for several kind of persons involved in this project. The SRS actually is the result of the requirement analysis.

6.1 General Description :

6.1.1 Product Perspective

Our application “The Mobile SDK Licensing Manager” is an application that automates the SDK requests of the customers which provides enhanced features with lesser number of errors. The application is built using Php and Eclipse with Android which makes it to run in flexible way.

6.1.2 Product Function

The main function of our “The Mobile SDK Licensing Manager” is to provide an interface to the customers to register with Reverie Language Technologies and to place their requests for SDKs. After successful registration the customer will be provided with a unique ID so that he/she can further login to Reverie with that ID. Moreover the Android application acts as a broker or sms gateway to post the message that it receives from the handset where the application is being installed message to the server. Thus the job of the server is minimised.

6.1.3 User Characteristics

The end users of the application is mainly targeted to the people who wants to requests SDKs from Reverie remotely. Our system provides the interface where the end users can select their desired SDKs remotely and place their orders there. Based on their requests the administrator delivers the SDKs to the customers. Moreover the Android application forwards the message to the server for SDK license validation, that comes from the application when the application is successfully installed.

6.2 Functional Requirements

- Two levels of access should be there i.e., Customers and administrator. The customers should not be allowed to do data entry, update or delete records from the database. Administrator should have the right to keep track of the records in the database.
- The user should be given the option to select any SDK related records which is in the database.

6.3 Non Functional requirements

- There may be requirement to query the database in a different way in the future. So the interface should be designed such a way to handle such future requirements.
- Addition of new feature to the software should be simpler and should not require wholesale change to the software.

Structured analysis is a set of techniques and graphical tools that allow the analyst to develop a new kind of system specifications that are easily understandable to the user. The analysis consists of interpreting the system concept into data and control terminology that is into data flow diagrams. The flow of structured analysis considers new goals and structured tools for analysis.

In structured analysis, the following basic tools are used

- Data Flow Diagram
- Data Dictionary
- Class Diagram

7.1 Data Flow Diagram (DFD)

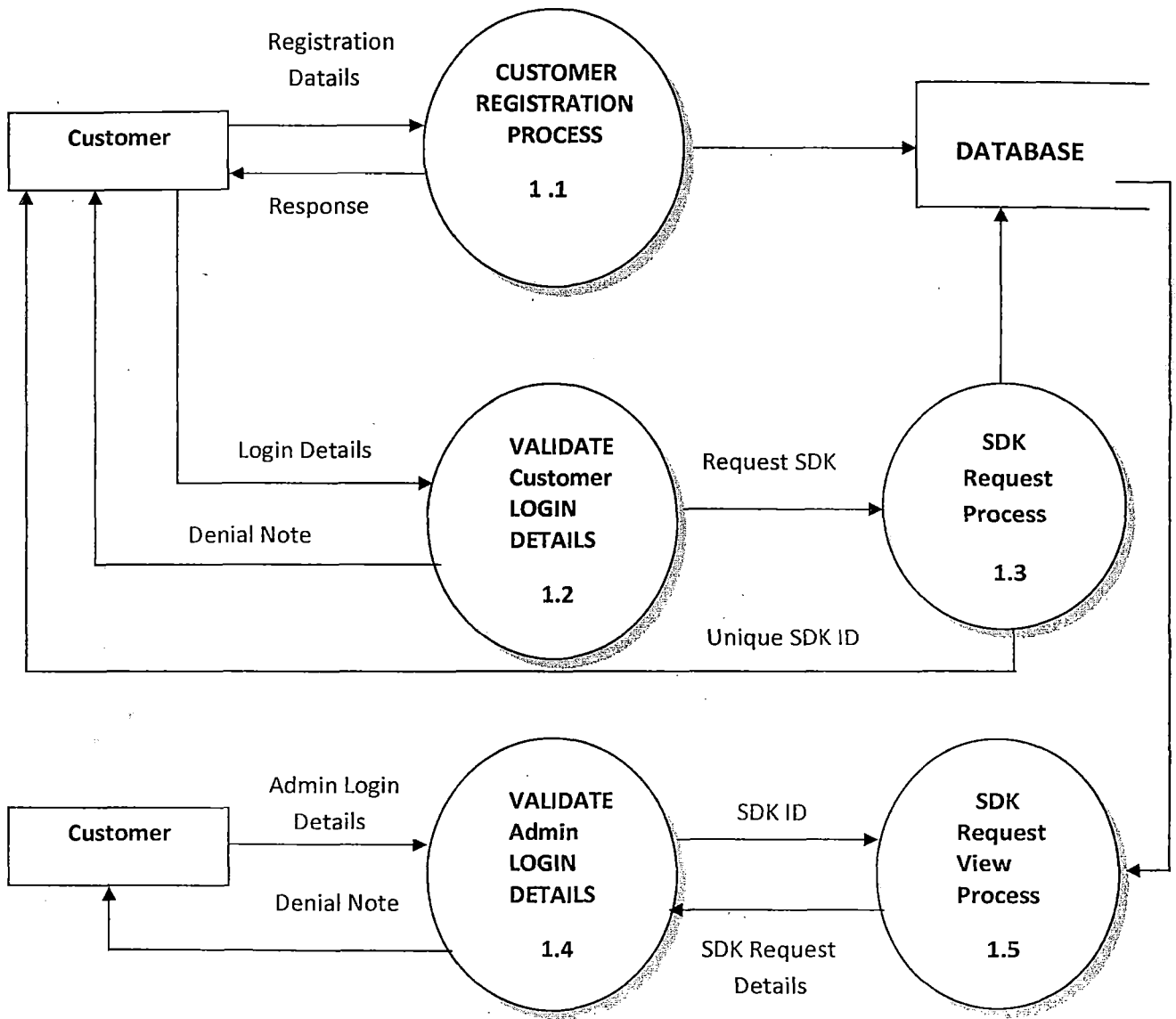


Fig. Level 1 DFD of “Mobile SDK Licensing

7.2 Data Dictionary:

Register

<u>C_id</u>	varchar	auto generated unique id for a particular customer
C_name	varchar	name of the customer company
C_address	varchar	address of the customer company
C_city	integer	current city of the customer company
C_state	integer	current state of the customer company
C_pin	integer	pin number of the customer company city
C_url	integer	website address of the customer company
Cperson_name	varchar	name of the person to whom to contact with
C_mail	varchar	email id of the person to be contacted
C_phone	varchar	phone number of the customer company
C_logname	varchar	login name for the customer
C_logpass	varchar	login password for the customer
confirmed	integer	flag to see if registration is confirmed or not

Request

<u>id</u>	varchar	auto generated unique id for a particular customer
customer	varchar	auto generated unique id for the customer
platform	varchar	platform for the sdk
version	varchar	version of the chosen platform

language	vvarchar	languages for that are to be supported by the sdk
feature	vvarchar	features that should contained in the sdk
subfeature	vvarchar	sub-features that should contained in the sdk
app_type	vvarchar	type of the application
license	vvarchar	type of the license
app_name	vvarchar	<i>name of the application to be developed by the customer</i>
description	vvarchar	brief description of the application to be developed

Platform

P_name	vvarchar	auto incremented unique id
Plat_name	vvarchar	name of the platform

Platform Version

<u>P_id</u>	vvarchar	unique id for the platform version
Plat_ver	vvarchar	name of the platform version
Pl_name	vvarchar	name of the platform to which the version belongs

Language

region	vvarchar	region to which the language belongs
region_code	vvarchar	code for the region
langu	vvarchar	name of the language
code	vvarchar	code for the language
<u>langu_value</u>	vvarchar	value for the language

Features

<u>Feature_id</u>	vvarchar	unique id to identify a feature
Feature_name	vvarchar	name of the feature

Subfeatures

<u>S_id</u>	vvarchar	unique id to identify a sub-feature
S_name	vvarchar	name of the sub-feature
F_name	vvarchar	name of the feature to which the sub-feature belongs

Application

<u>App_id</u>	vvarchar	unique id to identify a application type
App_name	vvarchar	name of the application type

License Type

<u>L_id</u>	vvarchar	unique id to identify a license type
L_name	vvarchar	name of the license type

SDK

<u>S_id</u>	integer	auto generated unique id for the SDK
Msg_version	vvarchar	version of the message
Sversion	vvarchar	version of the SDK
Scustomer	vvarchar	unique customer id
Splatform	vvarchar	platforms supported by the SDK
Slicense	vvarchar	type of license of the SDK
Slanguage	vvarchar	languages supported by the SDK

Sfeature	varchar	features of the SDK
Ssubfeature	varchar	sub-features of the SDK
App_id	varchar	count for the requests of a particular customer
Side_load	varchar	reserved
Reserved	varchar	reserved for future use
Sdkid	varchar	the uniquely generated SDK id

Device

Device_name	varchar	name of the device
Device_code	varchar	code for the device
<u>Device_id</u>	integer	unique id to identify a device

Admin

Id	varchar	login id for Administrator
password	varchar	login password for Administrator

Msg

<u>Id</u>	integer	auto incremented unique id for the message
Message	varchar	the message that comes from the handset

7.3 Class Diagram:

Class diagrams can be said as the “building blocks” used in a system. Class Diagrams help us specify the structural relationships between parts of the system. Class diagrams also show the relationships between the classes of the system. It is an important first step in defining the system’s structure.

Before designing the class diagram we need to identify the classes that are needed to build our system by analyzing the requirements document. After the classes have been identified we have eventually described these classes using UML class diagrams and then implemented these classes in Java.

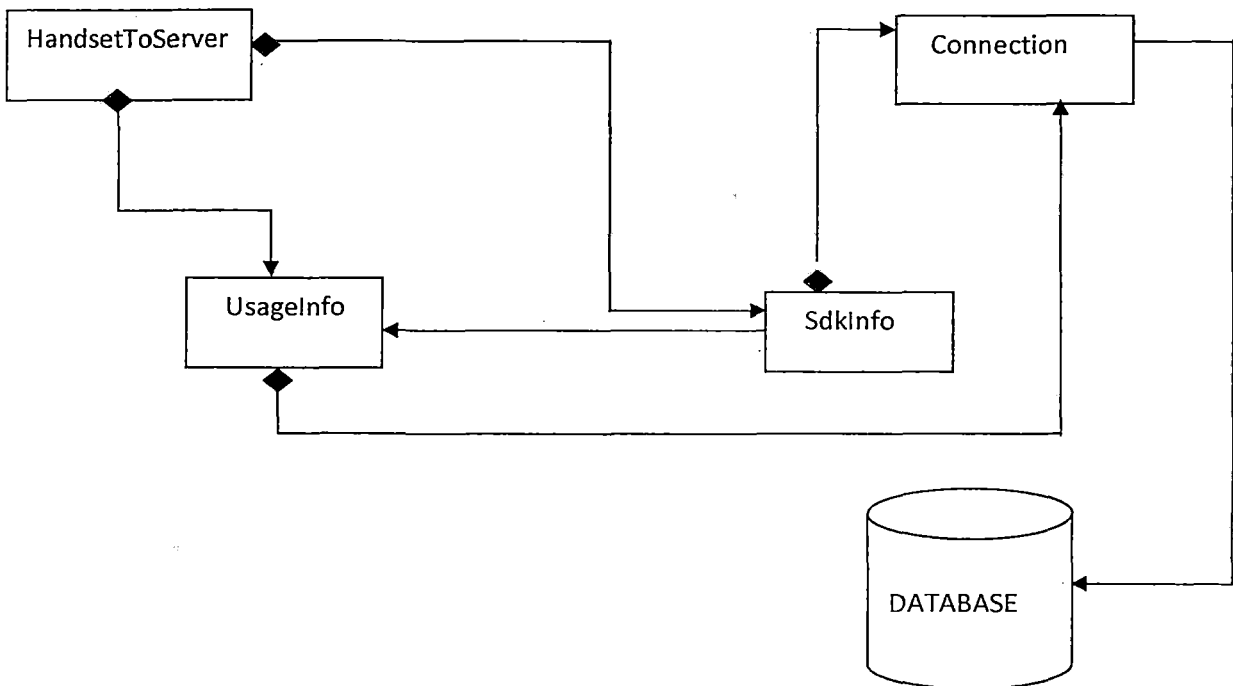


Fig. Class Diagram “Mobile SDK Licensing

System design is a way that helps us to create a new important phase composed of several steps. It facilitates the understandings and procedural details necessary for implementing the system recommended in the feasibility study. Emphasis is on translating the performance requirements into design specifications. The simple architecture of the system can be explained using the following diagram.

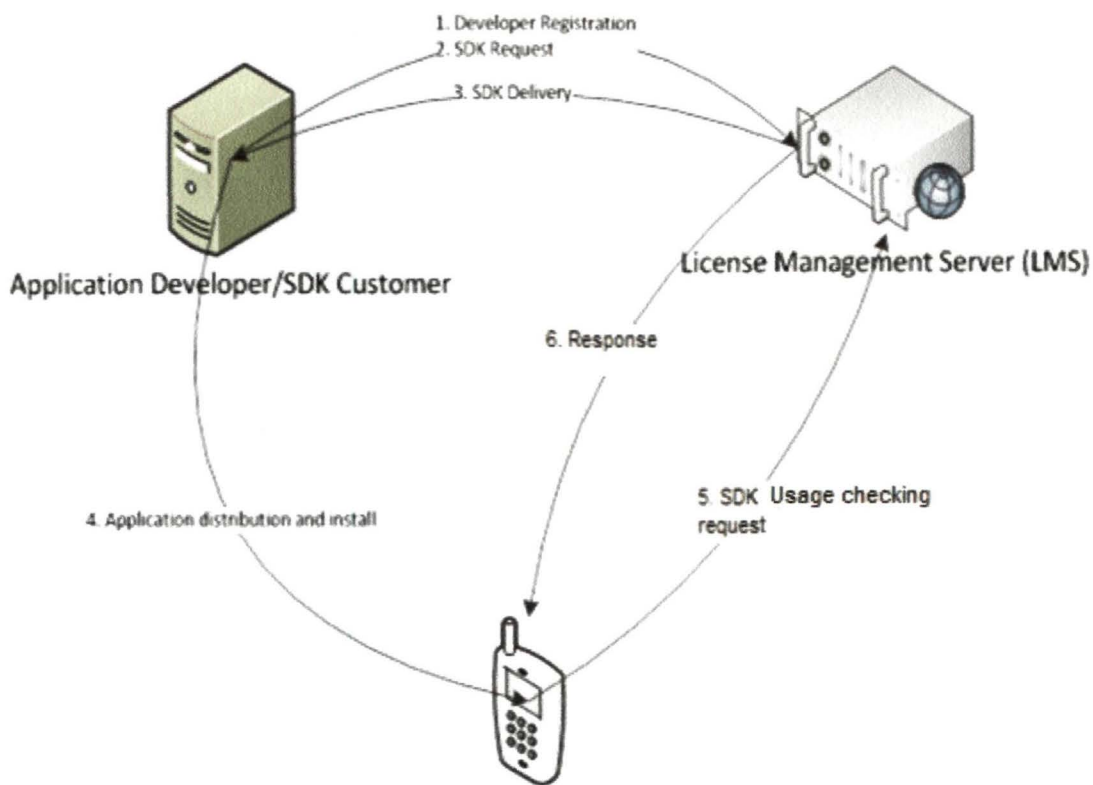


Fig: Simple architecture of the system

8.1 Logical Design:

The data flow diagram shows the logical flow of a system and defines the boundaries of the system. When a system is designed logically, it should specify the user's needs at a level of detail that virtually determines the information flow in and out of the system and the volumes and frequencies. Logical design reviews the present physical system. It specifies input, output, files, screen and report layout. Input and output specifications are nothing but composition of screen layout and input, output layout. These input screens have been logically designed so that the user feels comfortable and pleasant with the data entry.

8.1.1 Entity Relationship Diagram

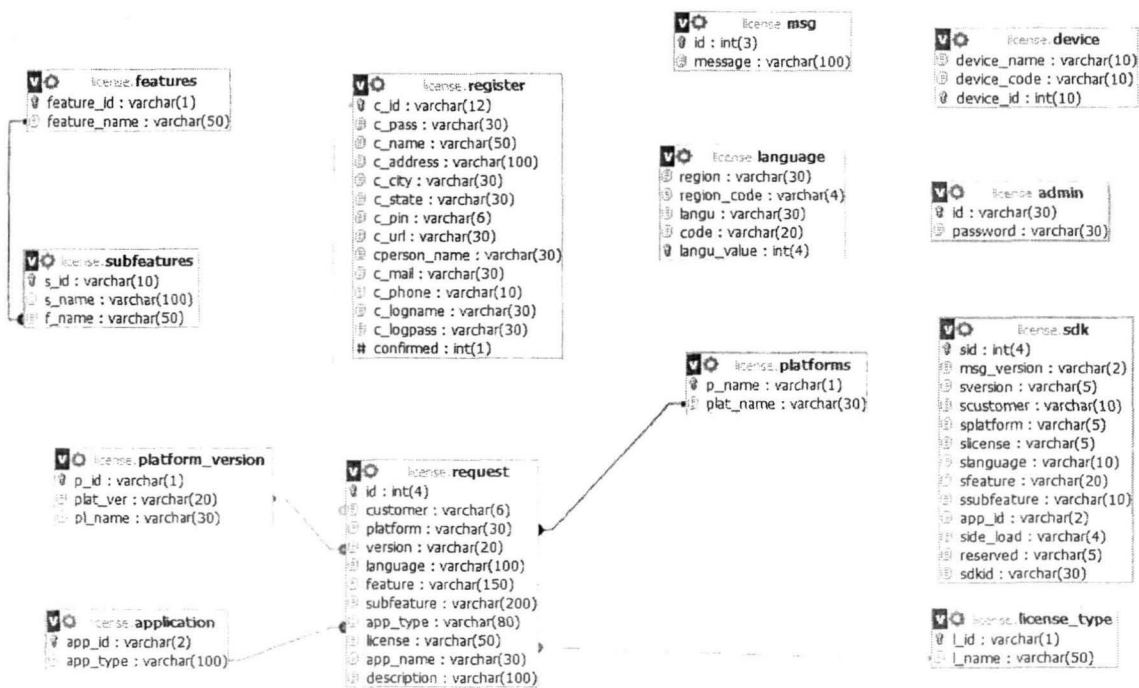


Fig: ER Diagram for The Mobile SDK Licensing Manager

8.1.2 Database Design

A collection of inter related data is referred to as database. The database contains information about one particular enterprise. Database design is the process of producing a detailed data model of a database. This logical data model contains all the needed logical and physical design choices and physical design parameters needed to generate a design choices and physical design parameters needed to generate a design in a Data Definition Language which can then be used to create a database.

8.1.2.1 Table Structure

Table name: admin

FIELD NAME	DATA TYPE	NULLABLE
id	VARCHAR	NO
password	VARCHAR	NO

Primary key (ID)

Table name: application

FIELD NAME	DATA TYPE	NULLABLE
app_id	VARCHAR	NO
app_type	VARCHAR	NO

Primary key (app_id)

Table name: device

FIELD NAME	DATA TYPE	NULLABLE
device_name	VARCHAR	NO
device_code	VARCHAR	NO
device_id	INT	NO

Primary key (device_id)

Table name: features

FIELD NAME	DATA TYPE	NULLABLE
feature_id	VARCHAR	NO
feature_name	VARCHAR	NO

Primary key (feature_id)

Table name: language

FIELD NAME	DATA TYPE	NULLABLE
region	VARCHAR	NO
region_code	VARCHAR	NO
langu	VARCHAR	NO
code	VARCHAR	NO
Langu_code	INT	NO

Primary key (langu_value)

Table name: license_type

FIELD NAME	DATA TYPE	NULLABLE
l_id	VARCHAR	NO
l_name	VARCHAR	NO

Primary key (l_id)

Table name: msg

FIELD NAME	DATA TYPE	NULLABLE
id	INT	NO
message	VARCHAR	NO

Primary key (id)

Table name: platforms

FIELD NAME	DATA TYPE	NULLABLE
p_name	VARCHAR	NO
plat_name	VARCHAR	NO

Primary key (p_name)

Table name: platform_version

FIELD NAME	DATA TYPE	NULLABLE
p_id	VARCHAR	NO
plat_ver	VARCHAR	NO
pl_name	VARCHAR	NO

Primary key (p_id)

Foreign key (pl_name) references platforms (plat_name)

Table name: request

FIELD NAME	DATA TYPE	NULLABLE
id	INT	NO
customer	VARCHAR	NO
platform	VARCHAR	NO
version	VARCHAR	NO
language	VARCHAR	NO
feature	VARCHAR	NO
subfeature	VARCHAR	NO
app_type	VARCHAR	NO
license	VARCHAR	NO
app_name	VARCHAR	NO
description	VARCHAR	NO

Primary key (id)

Foreign key (app_type) references application (app_type)

Foreign key (platform) references platforms (plat_name)

Foreign key (version) references platform_version (plat_ver)

Foreign key (license) references license_type (l_name)

Table name: register

FIELD NAME	DATA TYPE	NULLABLE
c_id	VARCHAR	NO
c_pass	VARCHAR	NO
c_name	VARCHAR	NO
c_address	VARCHAR	NO
c_city	VARCHAR	NO
c_state	VARCHAR	NO
c_pin	VARCHAR	NO
c_url	VARCHAR	NO
cperson_name	VARCHAR	NO
c_mail	VARCHAR	NO
c_phone	VARCHAR	NO
c_logname	VARCHAR	NO
c_logpass	VARCHAR	NO

Primary key (c_id)

Table name: sdk

FIELD NAME	DATA TYPE	NULLABLE
sid	INT	NO
msg_version	VARCHAR	NO
sversion	VARCHAR	NO
scustomer	VARCHAR	NO
splatform	VARCHAR	NO
slicense	VARCHAR	NO
slanguage	VARCHAR	NO
sfeature	VARCHAR	NO
ssubfeature	VARCHAR	NO
app_id	VARCHAR	NO
side_load	VARCHAR	NO
reserved	VARCHAR	NO
sdkid	VARCHAR	NO

Primary key (sid)

Table name: subfeatures

FIELD NAME	DATA TYPE	NULLABLE
s_id	VARCHAR	NO
s_name	VARCHAR	NO
f_name	VARCHAR	NO

Primary key (s_id)

Foreign key (f_name) references features (feature_name)

8.2 Physical Design:

Physical design is the implementation of logical design. It maps out the physical system, plans the system implementation, devices a test and implementation plan and specifies any new hardware or software.

Input Design: Input design facilitates the entry of data into the computer system. In entering data the operators need to know the following:

1. The allocated space for each field.
2. Field sequence, which must match that in the source document.
3. The formats in which data fields are entered.

Keeping these in mind, the input screens or forms have been designed and developed for easy and error free data entry. For eg. Customer Registration Form, SDK Request Form.

Output Design: Output is the primary purpose of any system. The output design is the SDK ID that is displayed on the computer screen or the extracted data from the binary message type.

System implementation is a collection of interdependent physical devices together with their programming which provides the functionality and performance for which the system was designed. Implementation phase is the translation of the design specification into some programming constructs and data structures.

9.1 Implementation Tools

In this project various tools and languages used for implementation are given below:

9.1.1 Hardware Tools

- No special hardware is required other than a Pentium-IV PC with disk space of minimum 10 GB to work, UPS.

9.1.1 Software Tools

The software tools upon which the project will run on are:

- Windows 7, Windows Xp operating system
- XAMPP Server
- Eclipse
- Notepad++

9.1.3 Software Development Languages

- MySql
- PHP
- HTML
- JavaScript
- Ajax
- CSS
- Java
- Android java

In this project it requires client server interaction for the functionalities to perform. As the customers may be at different locations so a reliable communication is required. In this project we have used the HTML and PHP language because they make the system more reliable and easily available. Moreover, the handsets, where the application is installed, which is developed using Reverie SDK, needs to send message to the server. In this project we have used Android java to develop an android application to forward the messages of the handset to the server which makes the SMS Broker application more reliable.

9.2 Implementation Phases

The project “ Mobile SDK Licensing Management” has been developed in the following phases:

1. Developing an interface where the customers can register themselves with Reverie and requests for SDKs.
2. Developing an interface where the administrator can view the SDK requests by logging in to the system based on the SDK IDs.
3. Development of an Android application which acts as a SMS gateway to forward the message to the server that comes from the handsets where the application, that has been developed using Reverie SDK, has been installed.
4. Development of an application that receives the message, that contains the license validation requests, in the server and decodes the useful information from it.

9.3 Project Accomplishment

In the project “The Mobile SDK Licensing Manager” we had tried to accomplish all the user requirements but there are certain areas where we had to take great care which are described below:

1. In generation of the SDK ID we had to pack the requested information into specified number of bytes.

2. Also we had to unpack the bytes in the SDK ID to retrieve the information encoded in it to view the requested details by the administrator.
3. In the android application we had to post the message received in the android device to the server using HTTP post.

The testing phase is an important part of software development. It is the process of finding errors and missing operations and also a complete verification to determine whether the objectives are met and the user requirements are satisfied.

Software testing is carried out in three phases:

- Unit Testing
- Integration Testing

10.1 Unit Testing

The first includes unit testing, where each module is tested individually and if any errors are found then it was corrected. Unit testing was done by using some dummy data as input whose results are known. After inputting these data it is found that the output results given by the modules match the known results from which correctness of the unit testing is confirmed.

10.2 Integration Testing

The module is a part of the whole “The Mobile SDK Licensing Manager”. It need not be the case, the module when run individually and showing perfect results, will also show perfect results when run as a whole in the system. The individual module is clipped under the system module and tested again and verified the results. We have run the entire module as a whole and it was working fine.

The testing criteria of our system is as follows:

1. The message sent from handsets are properly delivered to the android application or not
2. The message being properly received in the server application and the information is decoded correctly from it or not.

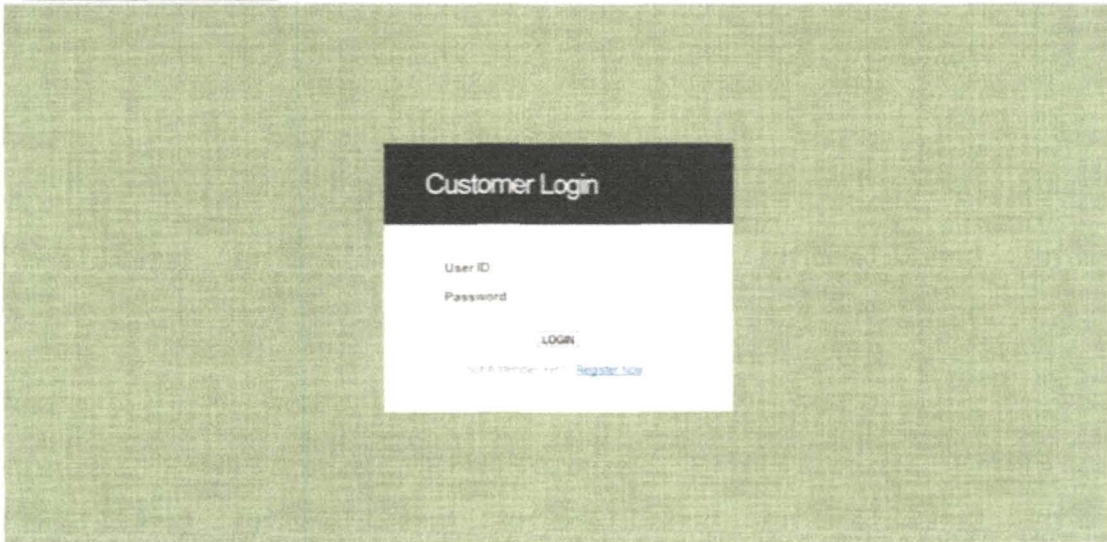
With the above criteria we have tested our system with different types of messages. Also we have tested our system not only on the Emulator but also on different Mobile Phones(like Samsung, Motorola) and Tablets having Android operating system.

In our project “The Mobile SDK Licensing Manager” we have taken great care to meet all the user requirements. . It will help the office staff to reduce their workload and also reduce the time spent in unproductive work. The system may have to be modified from time to time to cope with the needs that would arise with time. Still this project will help a lot to organize the records of the customers in the organization. Hopefully it would be bugs free in the current form but even if it's not it has been written in a way that it's easily maintainable.

There is enough scope of further enhancement in the project. In future the customer request process can be made more user friendly and the usage checking application can be made to work in a more interactive manner.

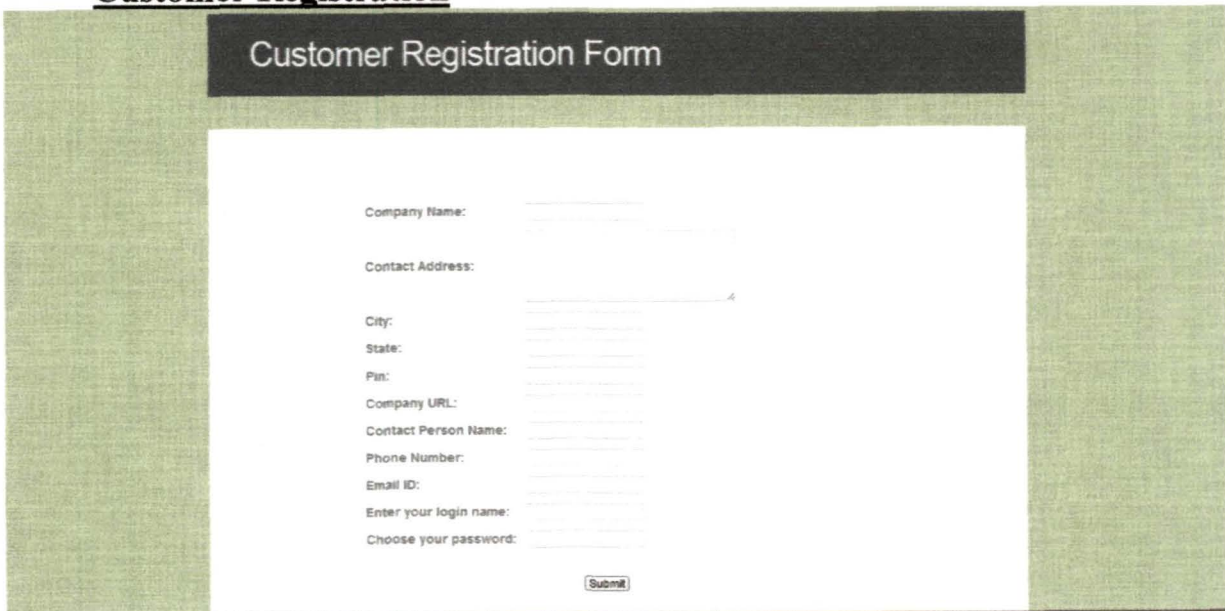
SNAPSHOTS:

Customer Login



A screenshot of a web page titled "Customer Login". The page has a dark header with the title "Customer Login" in white. Below the header is a white form area. The form contains two input fields: "User ID" and "Password". Below these fields is a "LOGIN" button. At the bottom of the form, there are two links: "Not a member? [Register Now](#)". The background of the page is a textured olive green.

Customer Registration



A screenshot of a web page titled "Customer Registration Form". The page has a dark header with the title "Customer Registration Form" in white. Below the header is a white form area. The form contains several input fields: "Company Name:", "Contact Address:", "City:", "State:", "Pin:", "Company URL:", "Contact Person Name:", "Phone Number:", "Email ID:", "Enter your login name:", and "Choose your password:". At the bottom of the form is a "Submit" button. The background of the page is a textured olive green.

Customer Details

Customer Details

Company Name : ideation Group
Contact Address : Belandur Main Road, Bangalore
City : Bangalore
State : Karnataka
Postal Code : 571008
Company URL : www.ideation.in
Contact Person Name : AKHILESH YADAV
Phone Number : 9899999996
Email ID : akhilesh@ideation.co.in

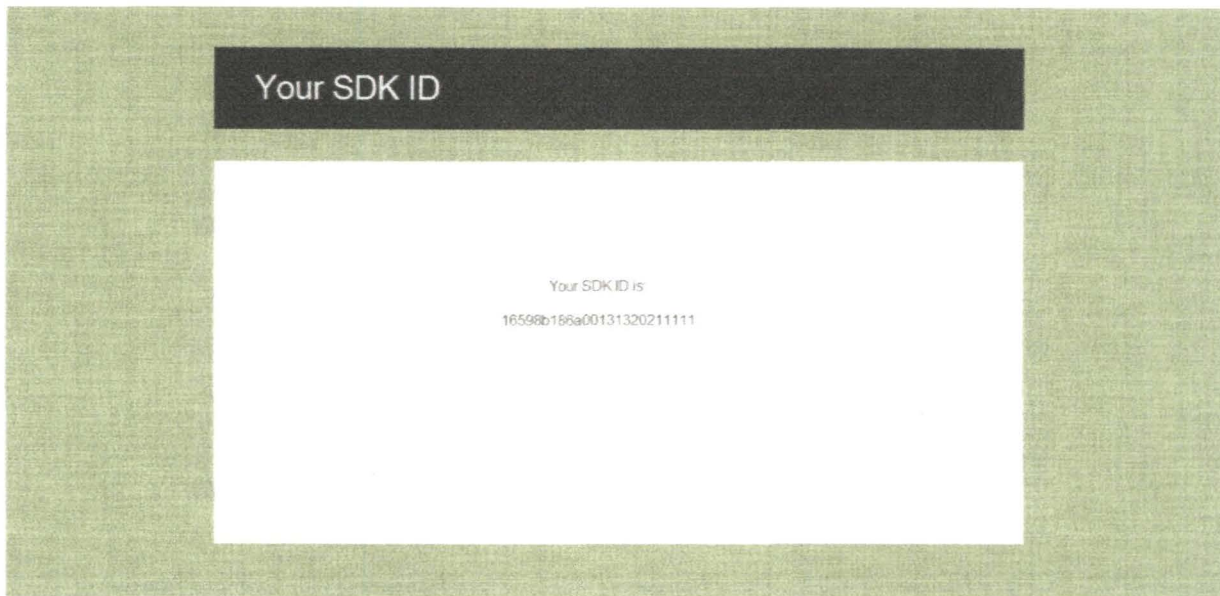
Ok, Proceed

SDK Request Form

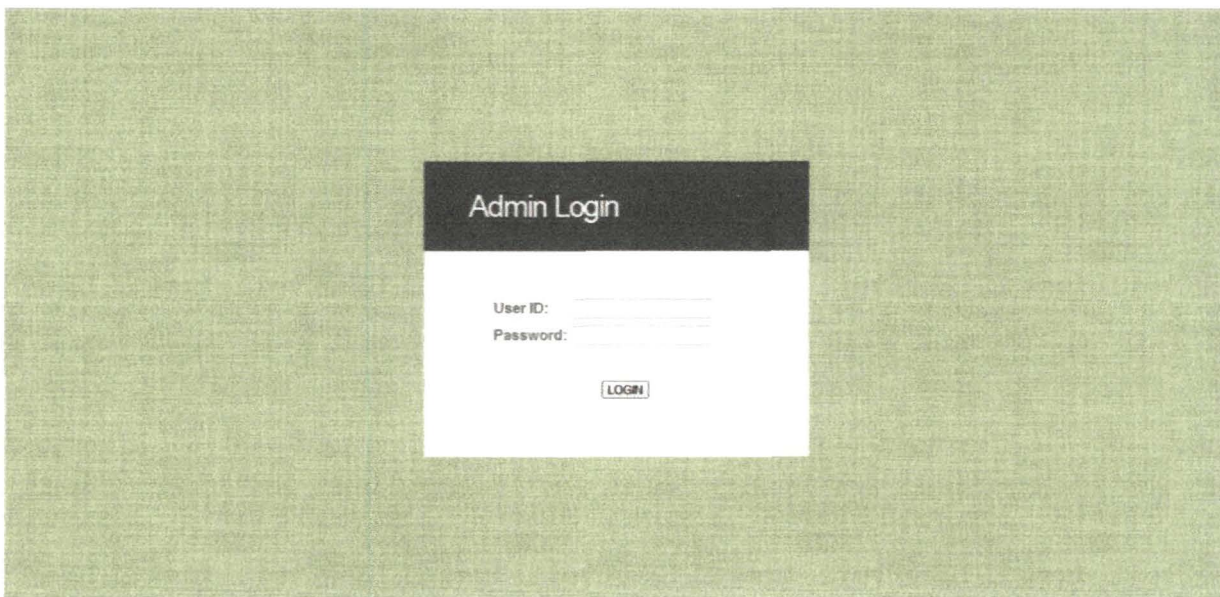
SDK Request Form

Platform: --Select--
Version: --Select--
Languages: Assamese Bangla English Gujarati Kannada
Malayalam Marathi Odia Punjabi Sanskrit Tamil
Telugu Urdu
Features: Display
 Typing
 Transliteration
Application Type: --Select--
License Type: --Select--
Application Package Name:
Brief Application Description:

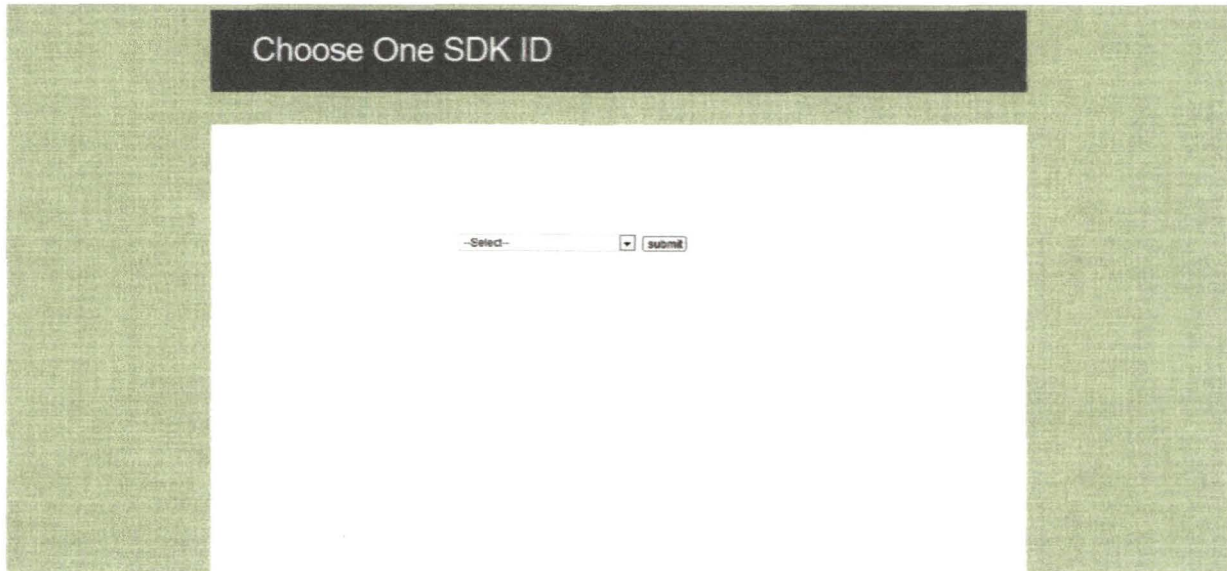
Generated Unique SDK ID



Admin Login

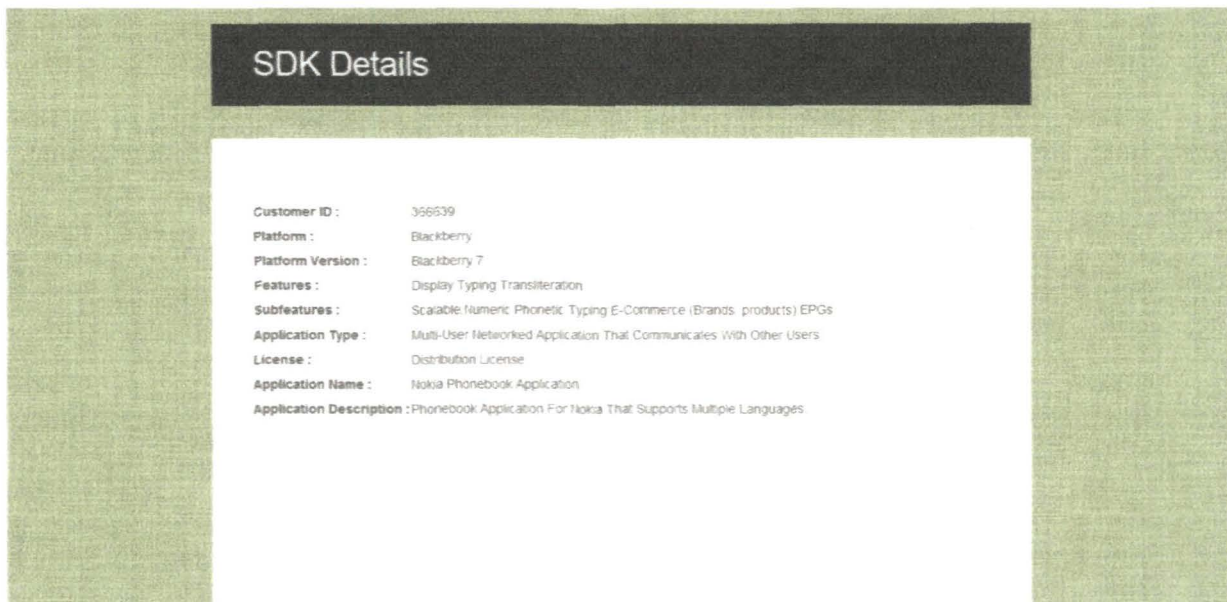


Choose Your SDK Form



The screenshot shows a web form with a dark header bar containing the text "Choose One SDK ID". Below the header is a white content area. In the center of the content area, there is a dropdown menu with the text "-Select-" and a small downward arrow. To the right of the dropdown menu is a button labeled "submit".

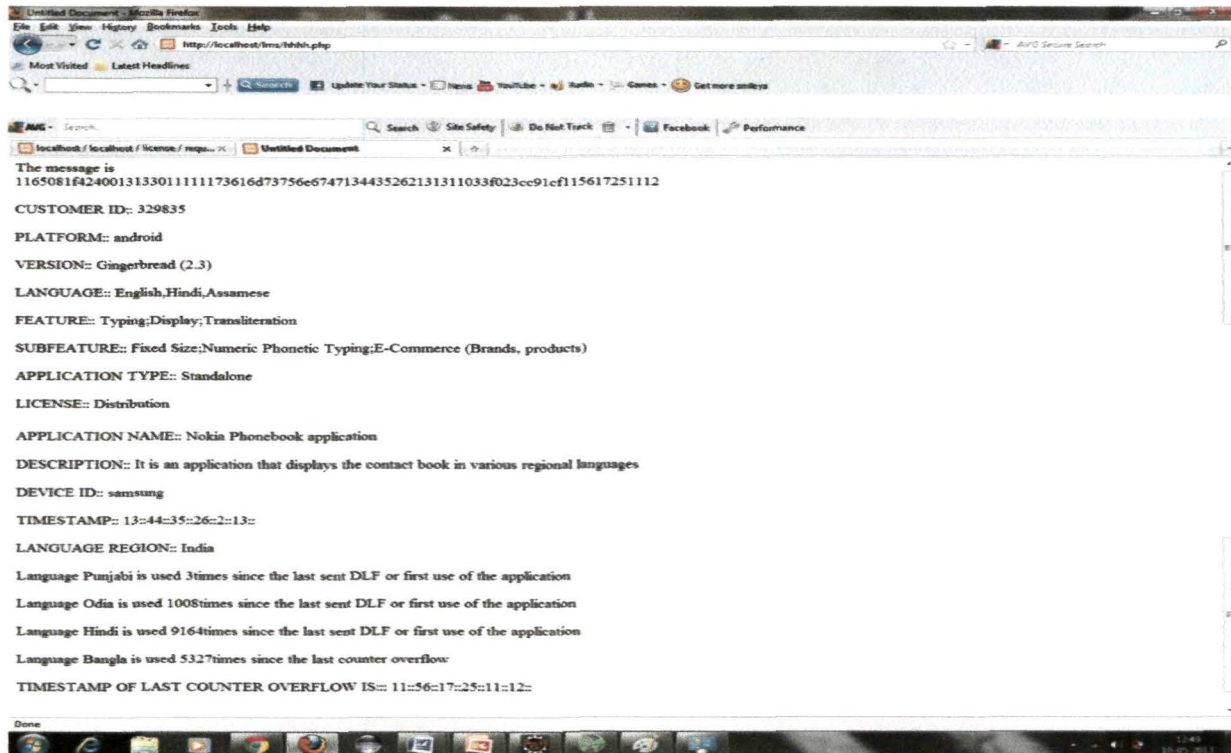
The Details Of The SDK



The screenshot shows a web page with a dark header bar containing the text "SDK Details". Below the header is a white content area. The content area displays the following information:

Customer ID :	356539
Platform :	Blackberry
Platform Version :	Blackberry 7
Features :	Display Typing Transliteration
Subfeatures :	Scalable Numeric Phonetic Typing E-Commerce (Brands products) EPGs
Application Type :	Multi-User Networked Application That Communicates With Other Users
License :	Distribution License
Application Name :	Nokia Phonebook Application
Application Description :	Phonebook Application For Nokia That Supports Multiple Languages

Extracted Usage Information From The Binary Message



References

<http://www.w3school.com>

<http://www.php.net>

<http://www.webdeveloper.com>

<http://webtutsdepot.com/2011/11/15/android-tutorial-how-to-post-data-from-an-android-app-to-a-website/>