1. INTRODUCTION

1.1 About the Project

The project entitled as "**MOBILE APPLICATION FOR INTEGRATED ADMINISTRATIVE SERVICES FOR RS WINDTECH ENGINEERS (P) LTD**" and it is an android application which is designed for **RS WINDTECH ENGINEERS (P) LTD** which is situated in Aralvoimozhy, Nagercoil. The application will be more useful for the RSW employees since all the employee data are stored and maintained by the administrative members. The purpose of this application is to make the administrative facilities to be more easy and efficient. The application is designed in order to give proper user interface to the end user. The module describes about the administrative details of the employees. It has 4 modules which describes about the staff, customer, subcontractor and vendor details about the employees.

The staff module has the process of entering the staff details such as staff no, staff name, staff address and details like date of promotion, date of joining etc., the details entered by the staff will be stored in database and will be used for further use. The same process will be repeated for customer module and some more attribute fields will be added to be entered by the customer.

The vendor module has the process of entering the supplier details such as supplier code, supplier name, supplier address and so on and the entered data will be used for future use. The subcontractor module has the details of entering the sub code, sub name, address details and the stored data will be used for many other modules if necessary. Finally application will give comfort to RSW employees especially for administrative members.

1.2 Company Profile

Company Name : **Versions Software Solutions**

Address : F9, Bharathidasan University Technology Park,
Tiruchirappalli 620023, Tamil Nadu 620023
Phone: 0431-2331088,
Email: versionssoft@gmail.com

External Guide Name : **Dr. E.KIRUBAKARAN** B.E. (Hons.), M.E, MBA, Ph.D.

1.3 Client Profile

RS Windtech Engineers (P). Ltd.,
8 / 126- E3, Main Road,
Aralvoimozhy,
Kanyakumari District - 629 301
Tamilnadu, India.

- Founded by Mr.J.Rajasegar,
- The services include administration, inventory management, erection and installation of WTGs, operation and maintenance, crane services, repair works of windmill components through fully equipped workshop, electronics lab, hydraulic lab and other windmill related jobs.
- The company offers an integrated end to end solution and diverse services in the wind farm industry. Presently our operations span across the country from Tamilnadu to states like Karnataka, Andhra Pradesh, Maharashtra, Rajasthan and so on. The list of clients is equally impressive.

2. SYSTEM STUDY

System Study is used to deliver information about the employees of RSW in which describes about both the personal and company details of each employee. The details have to be entered by the employees and those details will be stored in database and will be used for further use. The application is designed mainly for the administrative members in order to maintain the details of employees.

2.1 EXISTING SYSTEM

Existing System defines the system which is already exist and may have merits and demerits of the project. The existing project of this application is web application named "**Web based Integration System**". It is a web application in which the administrative details will be entered by the administrators. It is an only application where all the details of the RSW will be entered and managed by the administrators. It may lead to a problem and it will be difficult for both employees and administrators. Also the application may have bugs and errors.

2.2 DISADVANTAGES OF EXISTING SYSTEM

- Human Error
- Connectivity issues
- More labours needed
- Inaccuracy
- Time consumption
- Slow processing Speed
- Data inconsistency

2.3 PROPOSED SYSTEM

Proposed system refers to the system that enhances the existing features to the advanced level and makes the application more accuracy. Here the existing web application is designed in an android application as proposed system in order to give the clear user interface to the end user. The purpose of this application is to give an accuracy of data about the employees. The application will be more interactive. The application reduces the time and increases the performance while entering the data.

2.4 ADVANTAGES OF PROPOSED SYSTEM

- Easy to access
- High performance
- Accuracy of data
- User friendly Interface
- Retrieval of information
- Accurate results

2.5 PROBLEM DEFINITION AND DESCRIPTION

RSW employees have to enter their own details in order to maintain the record of each and every employee. Not only the employees also the customers, vendors and subcontractors have to maintain the details and the work is done by the administrative members. The entered details are stored in database and will be used for further use.

For those purpose the application has been designed by using the following modules

- Staff
- Customer
- Vendor
- Subcontractor

3. SYSTEM ANALYSIS

3.1 RESOURCES REQUIRED

3.1.1 Hardware Requirements

Processor	: ANY CORE PROCESSOR
RAM	: 4 GB (Minimum)
Hard Disk	: 320 GB (Minimum)
Other Devices	: Android smart device (Smart phone, Tablet)

3.1.2 Software Requirements

Operating System	: Windows 7 or Higher

3.1.3 CLIENT SIDE DEVELOPMENT

Android Studio 3.0.1

JSON

Android SDK Version 26

3.1.4 SERVER SIDE DEVELOPMENT

Script	: PHP
Database	: MYSQL
Server	: Apache http

3.2 FEASIBILITY STUDY

Feasibility is a system proposal according to its work ability, impact on the organization, ability to meet user and effective use of resources.

Three types of feasibility,

1. Technical feasibility.
2. Operational feasibility.
3. Economic feasibility.

Feasibility analysis is necessary to determine whether the proposed system is feasible considering the technical, operational and economic factors. By having detailed feasibility study the management will have clear-cut view of the proposed system with benefit and drawbacks.

3.2.1 Technical Feasibility

The proposed System is to be implemented with MySQL as a backend tool running under local server. Since the system is being developed in running in hand held devices, the system is easy-to-users. Thus the proposed system is technically feasible.

The most important criteria for a system are that it must be technically feasible. The proposed system is going to be the part of much bigger system and hence its implementation are designed in such a way that it is going to be faster and efficient.

3.2.2 Operational Feasibility

The user friendly interface, which makes all operation easy to use and no extra training, is needed in this regard, the user doesn’t need extra thing and thus lots of time is saved. This makes the project operationally feasible.

3.2.3 Economic Feasibility

Since the proposed system deals with the mobiles and tablets, it is worth to purchase while needed. Thus the proposed system is economically feasible.

3.3 USE CASE DIAGRAM

The **use case diagram** at its simplest representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved. A use case diagram can identify the different types of users of a system and the different use cases and will often be accompanied by other types of diagrams as well.

Use case diagrams are used to gather the requirements of a system including internal and external influences. These requirements are mostly design requirements. So when a system is analysed to gather its functionalities use cases are prepared and actors are identified. Now when the initial task is complete use case diagrams are modelled to present the outside view.

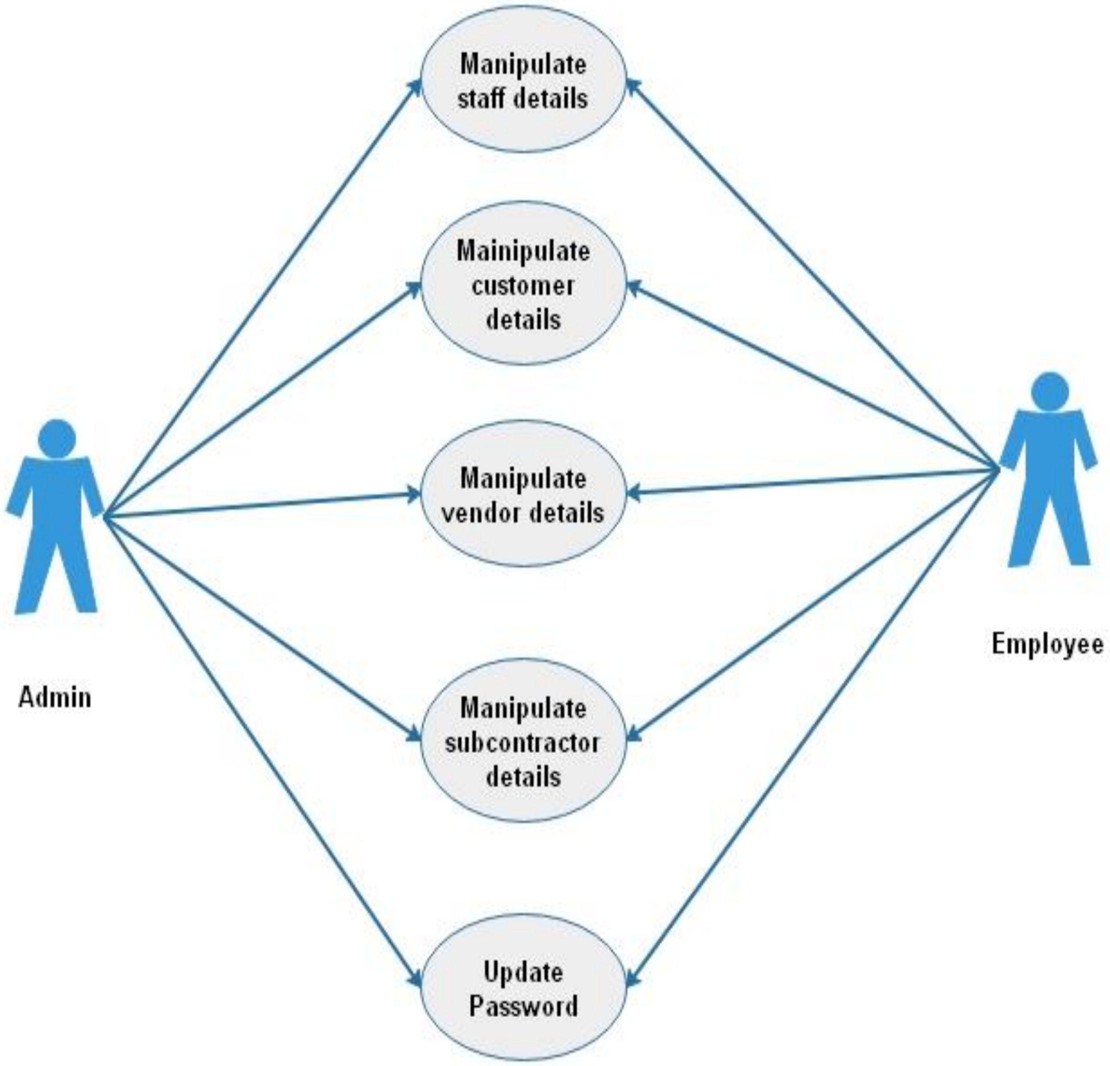

Manipulate staff details
Mainipulate customer details
Manipulate vendor details
Manipulate subcontractor details
Update Password
Admin
Employee

Fig. 3.1 Use case diagram

3.4 DATA FLOW DIAGRAM

A Data Flow Diagram (DFD) is a graphical representation of the "flow" of data through an information system, modelling its process aspects. Often they are a preliminary step used to create an overview of the system which can later be elaborated. DFDs can also be used for the visualization of data processing (structured design).

A DFD shows what kinds of information will be input to and output from the system, where the data will come from and go to, and where the data will be stored. It does not show information about the timing of processes, or information about whether processes will operate in sequence or in parallel.

Data flow diagrams can be used to provide the end user with a physical idea of where the data they input ultimately has an effect upon the structure of the whole system from order to dispatch to report. How any system is developed can be determined through a data flow diagram model.

CONTEXT LEVEL:

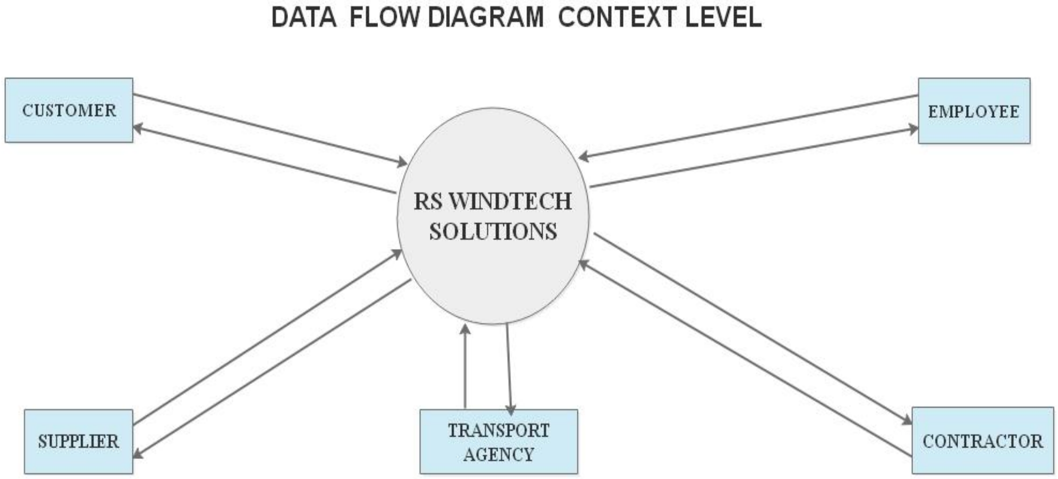


Fig. 3.2 Context Level

LEVEL 0: GENERAL

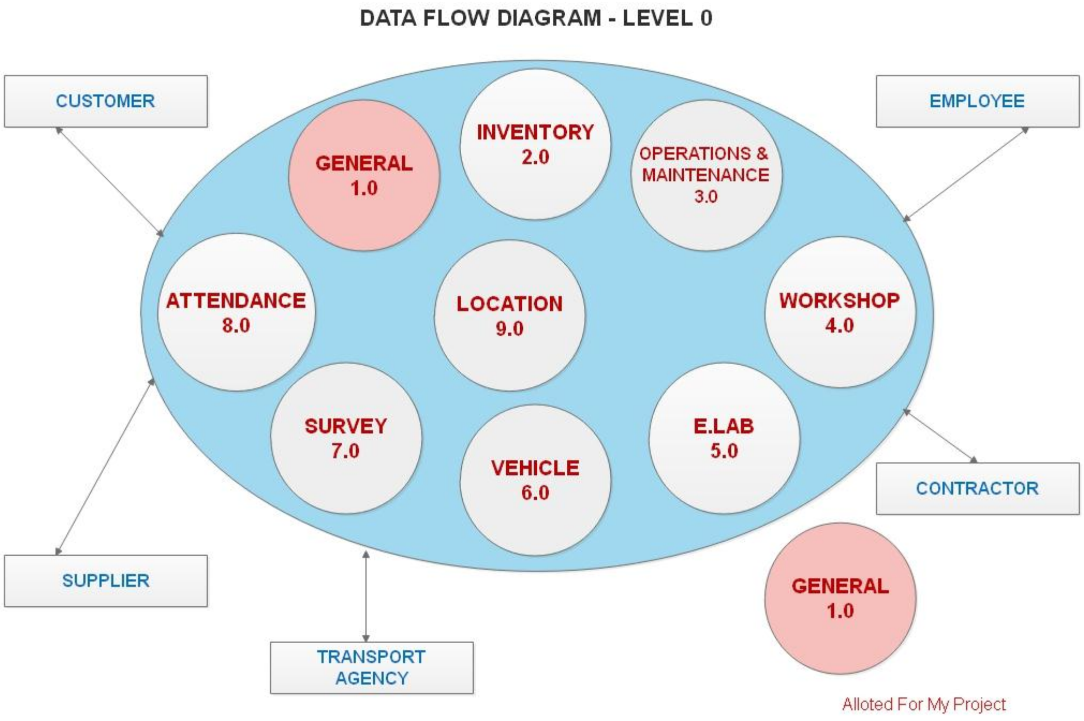


Fig. 3.3 Level 0

LEVEL 1:

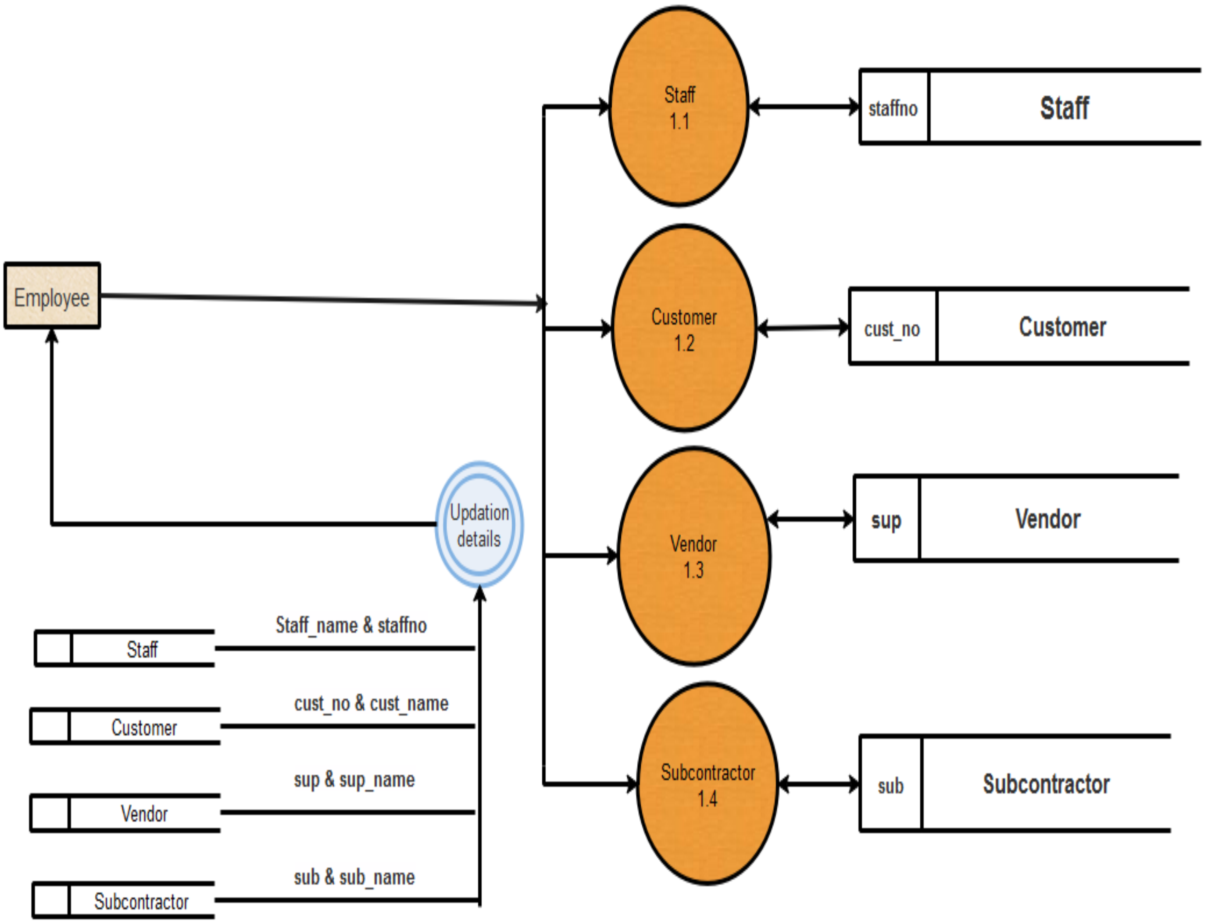


Fig. 3.4 Level 1

LEVEL 2:

Level 2.1 STAFF

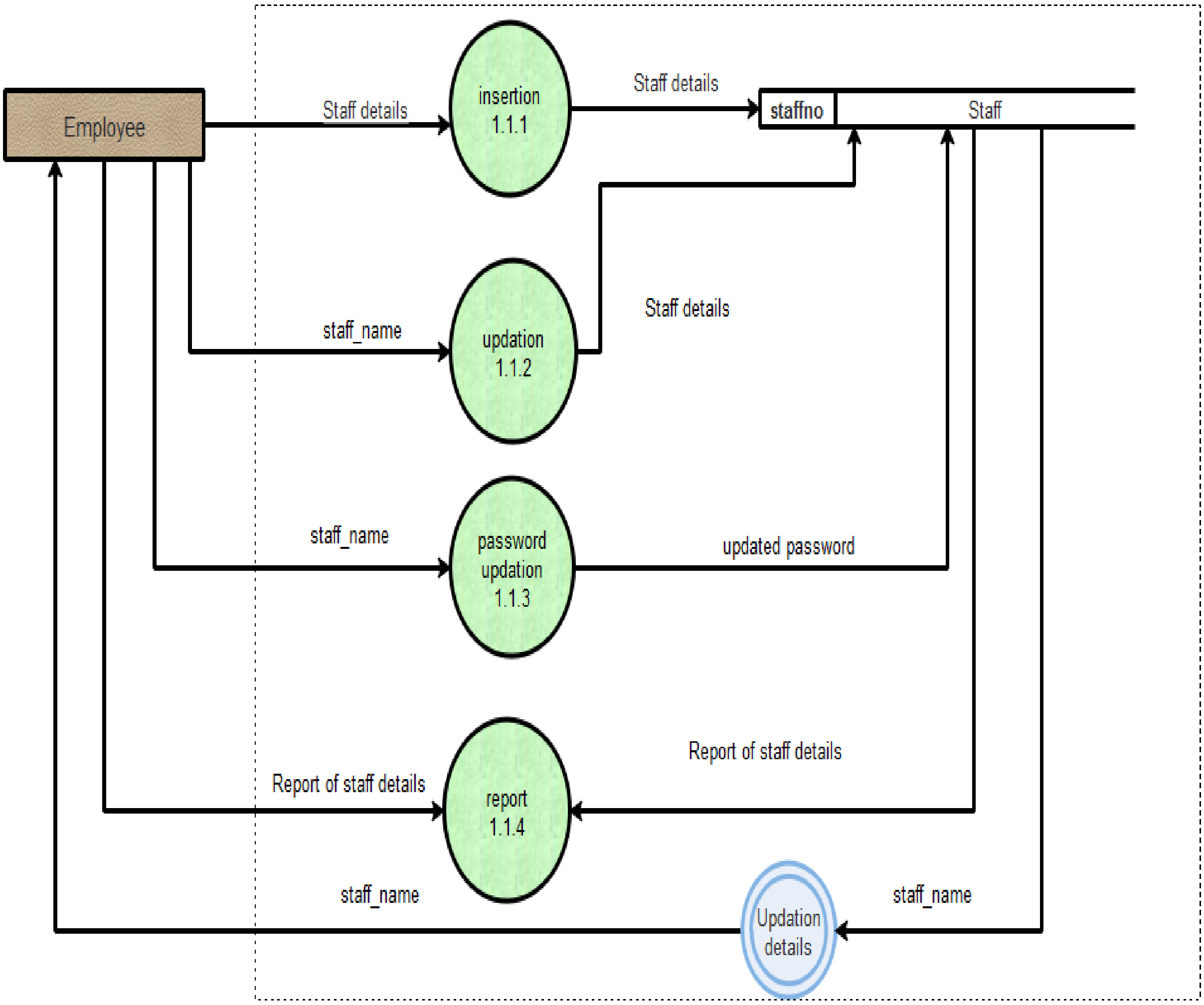


Fig. 3.5 Level 2.1 Staff

Level 2.2 CUSTOMER

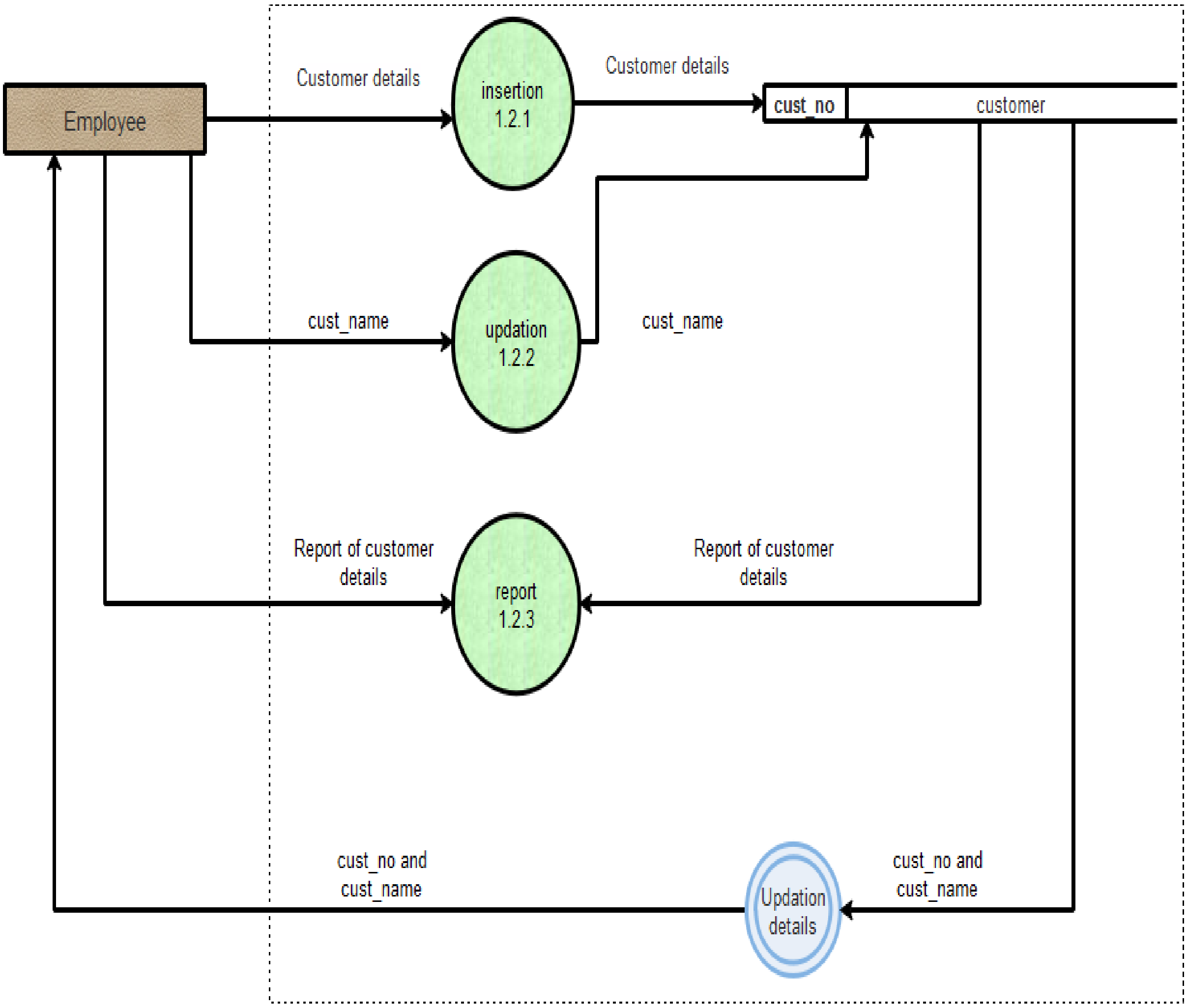


Fig. 3.6 Level 2.2

Level 2.3 VENDOR

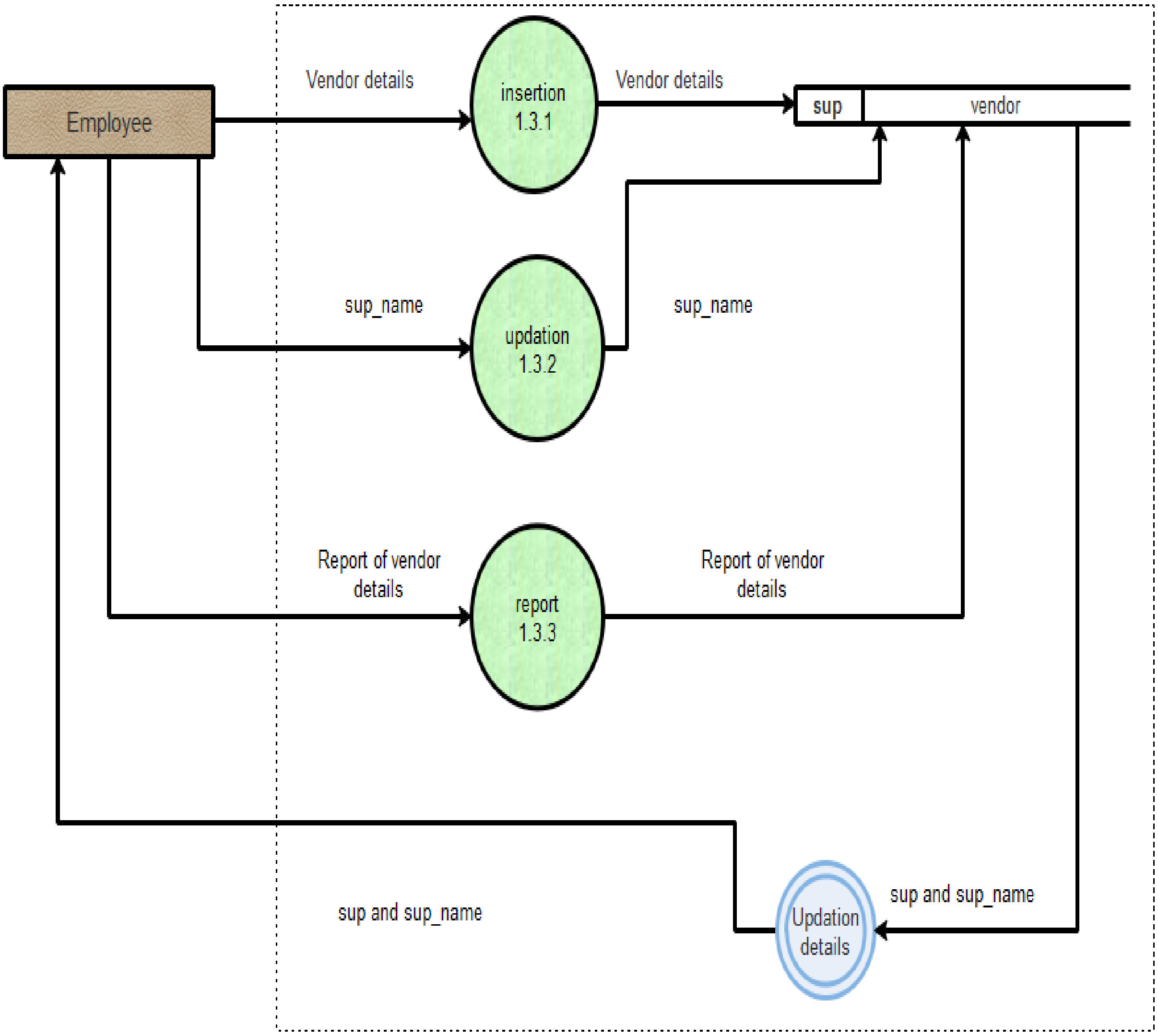


Fig. 3.7 Level 2.3 Vendor

Level 2.4 SUBCONTRACTOR

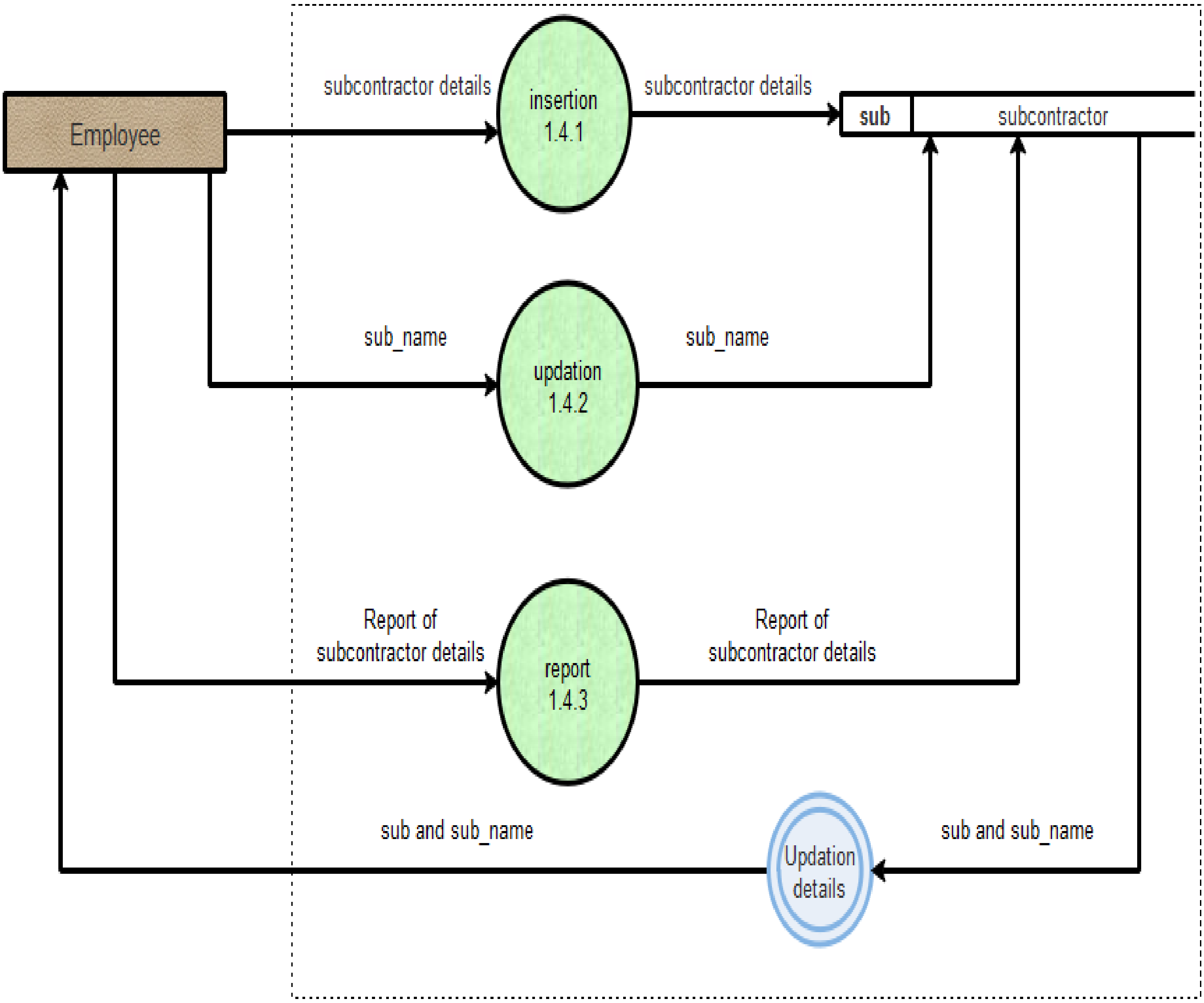


Fig. 3.8 Level 2.4 Subcontractor

4. SYSTEM DESIGN

4.1 ARCHITECTURAL DESIGN

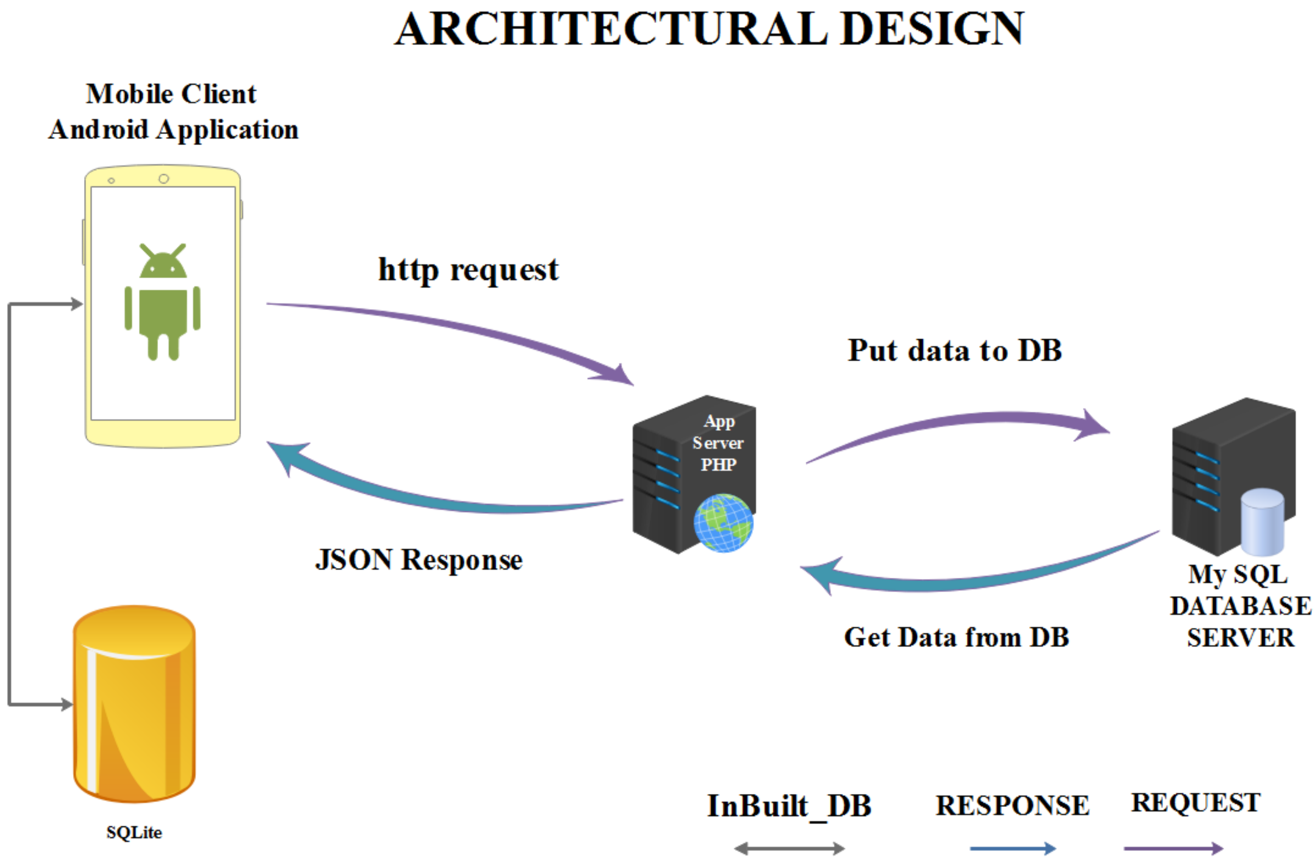


Fig. 4.1 Architectural design

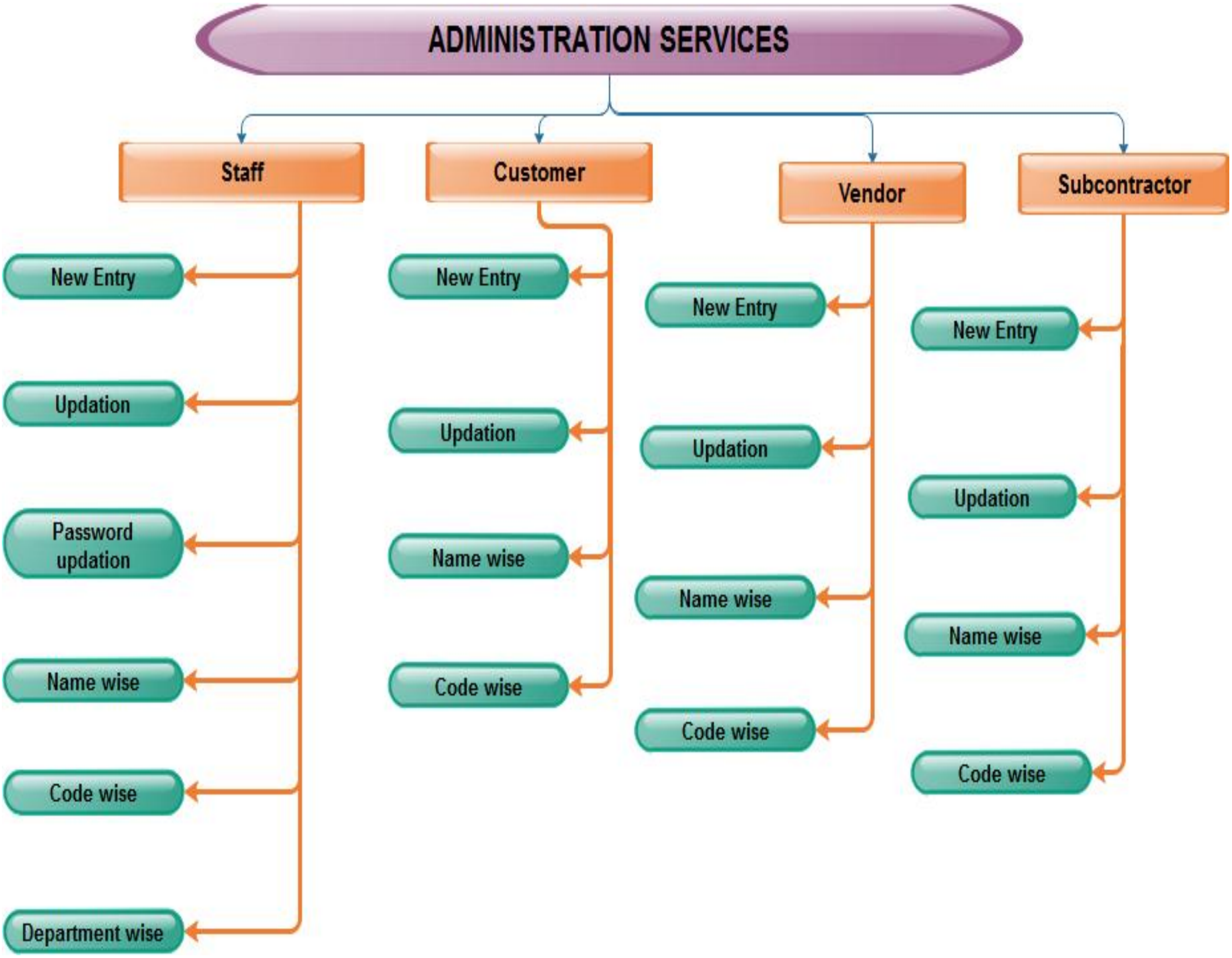


Fig. 4.2 Architectural design

4.2 INPUT/OUTPUT DESIGN

4.2.1 Input Design

The input data are collected into groups of similar data. While entering the input data the operators must know the space allocated for each field, the data types in which the data fields are entered. The input design is the link that ties information system into the world of its users. It consists of developing specification and procedure for data preparation.

The inaccurate data won’t be accepted by this system. For example entering text in place of telephone number field is inappropriate. So this type of wrong input will not be allowed. In this manner the input design allows only valid and required relevant data to be stored.

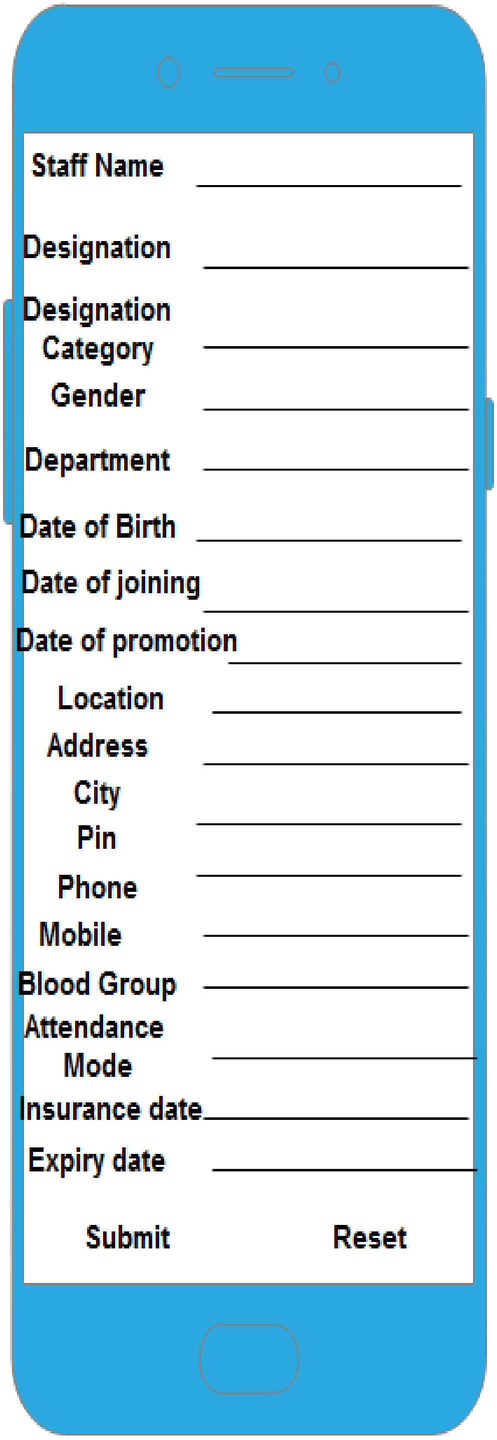


Fig. 4.3 Staff entry

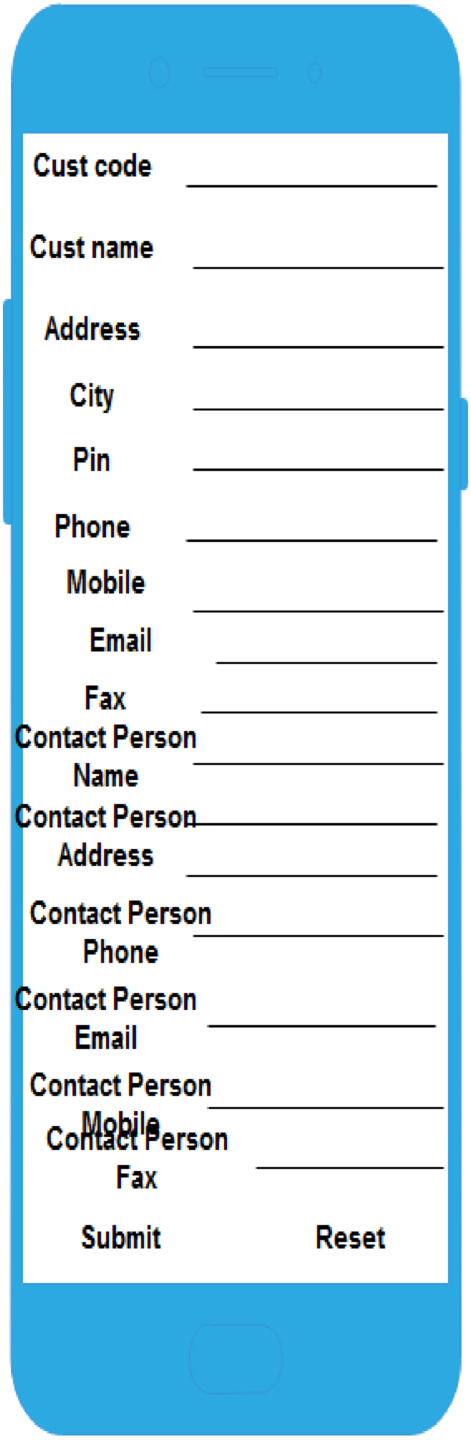


Fig. 4.4 Customer entry

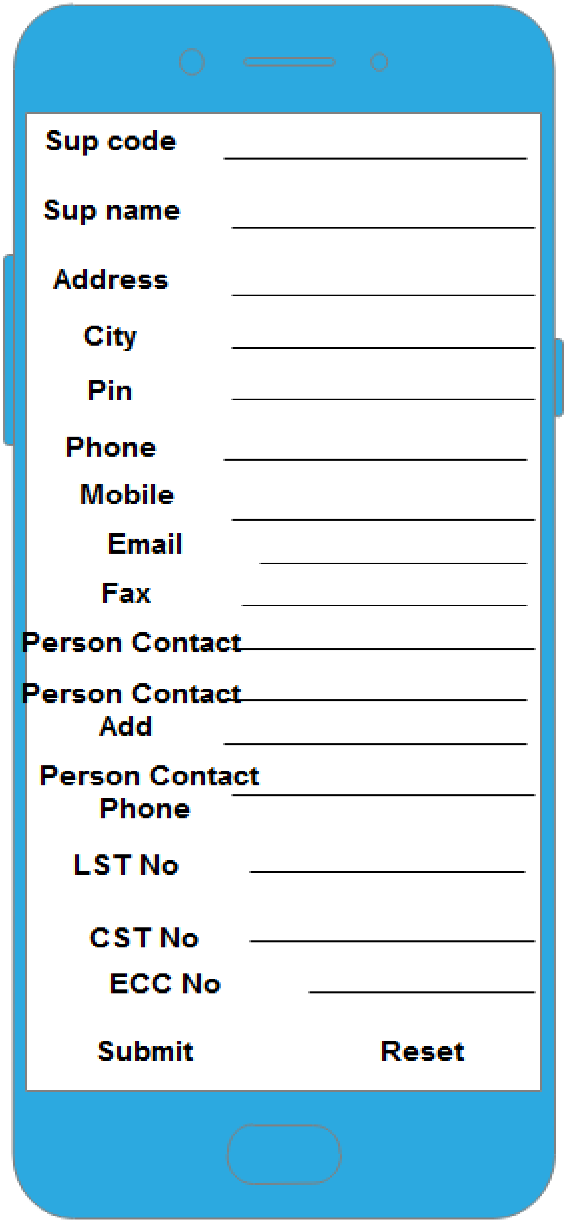


Fig. 4.5 Vendor entry

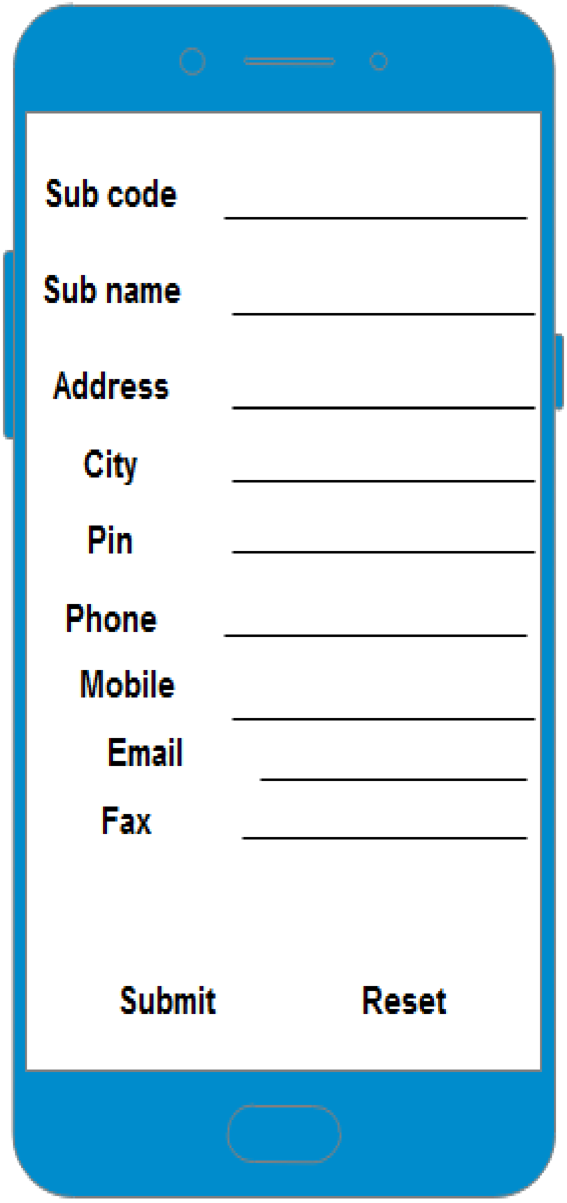


Fig. 4.6 Subcontractor

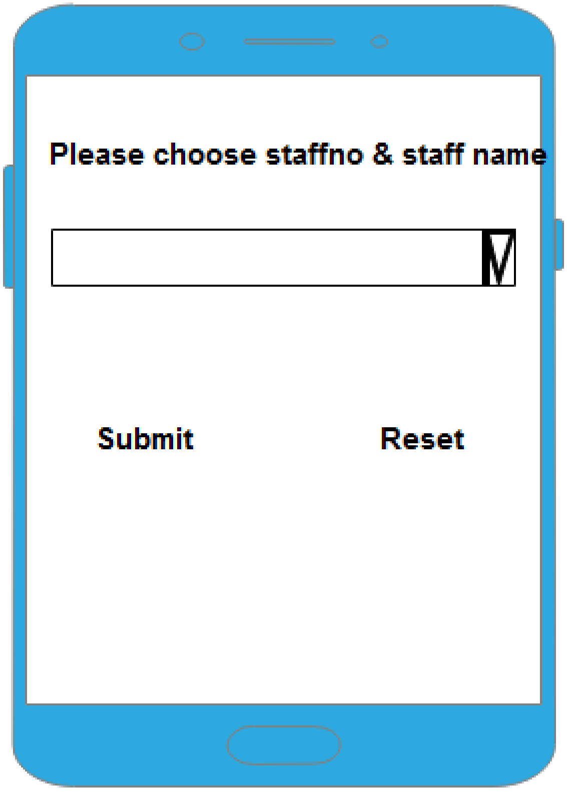
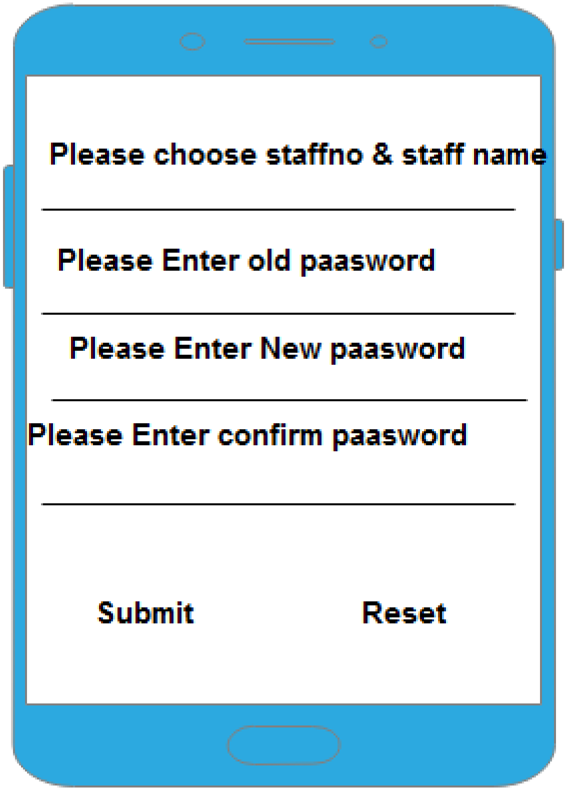


Fig. 4.7 Staff details



Please choose staffno & staff name
Please Enter old paasword
Please Enter New paasword
Please Enter confirm paasword
Submit
Reset

Fig. 4.8 Password Updation

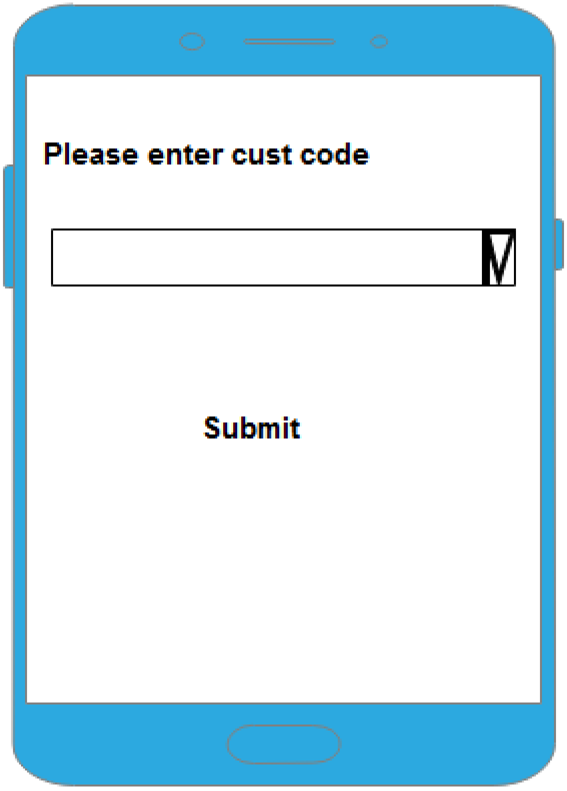


Fig. 4.9 Customer details Updation

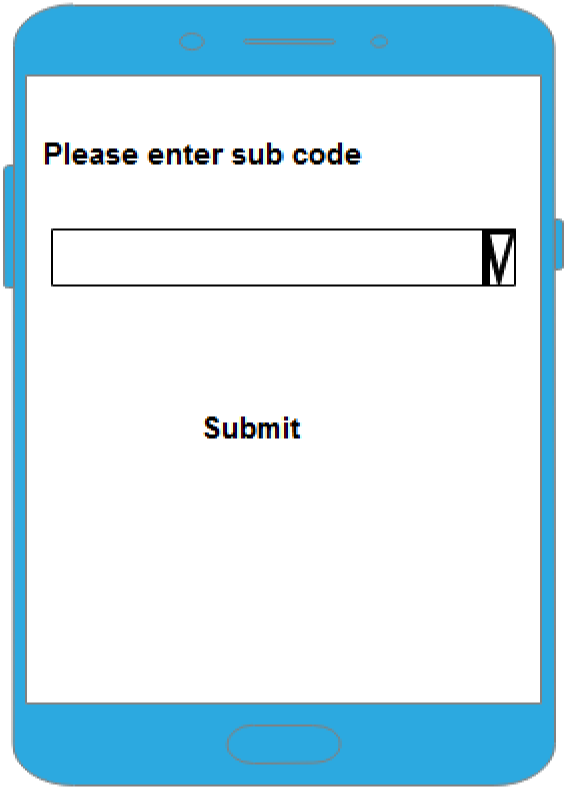


Fig. 4.10 subcontractor details Updation

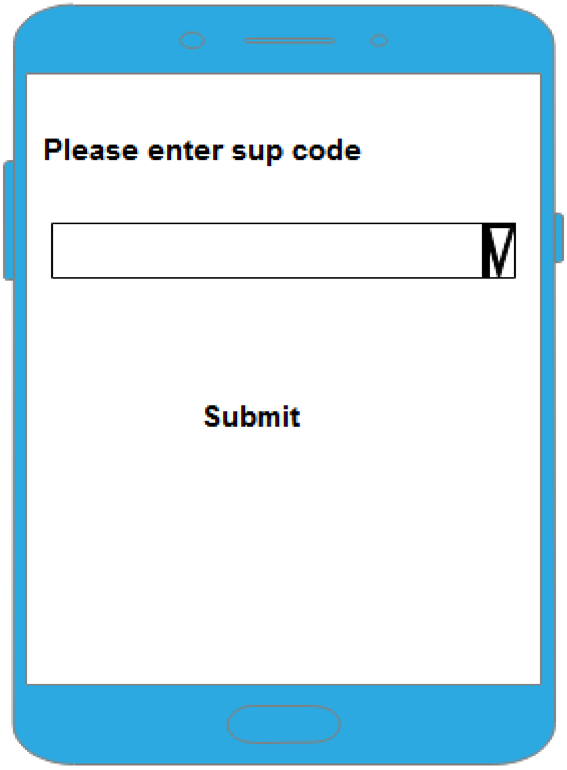
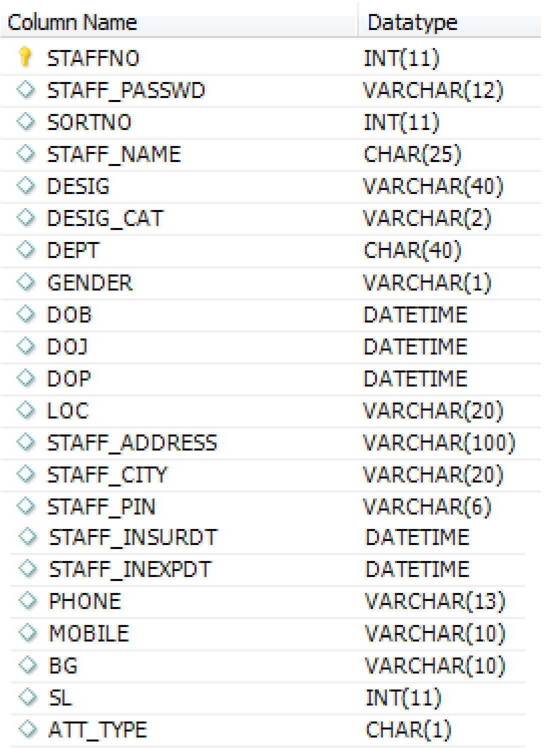


Fig. 4.11 Vendor details Updation

4.3 TABLE DESIGN

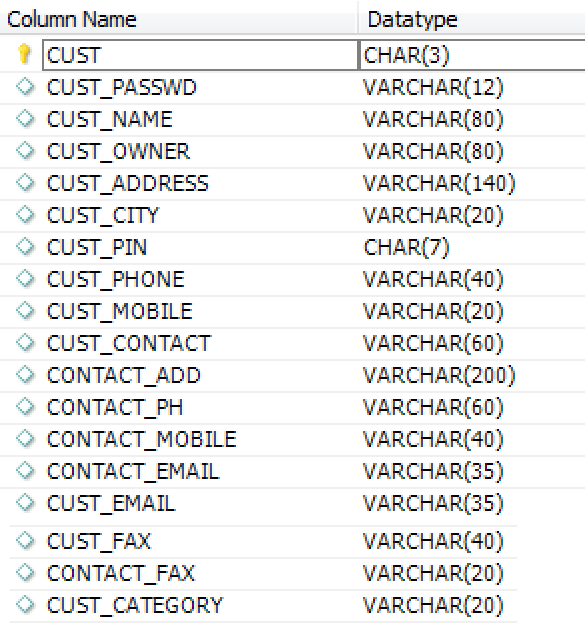
A table is a collection of related data held in a structured format within a database. It consists of columns, and rows. In relational databases and flat_file_databases, a table is a set of data elements using a model of vertical columns and horizontal rows, the cell being the unit where a row and column intersect. A table has a specified number of columns, but can have any number of rows. Each row is identified by one or more values appearing in a particular column subset. The columns subset which uniquely identifies a row is called the primary key.

Table 4.3.1 staff



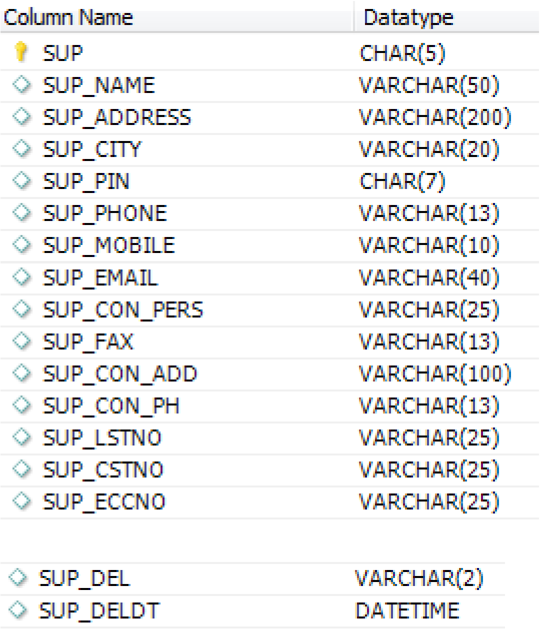
Column Name	Datatype
🔑 STAFFNO	INT(11)
◇ STAFF_PASSWD	VARCHAR(12)
◇ SORTNO	INT(11)
◇ STAFF_NAME	CHAR(25)
◇ DESIG	VARCHAR(40)
◇ DESIG_CAT	VARCHAR(2)
◇ DEPT	CHAR(40)
◇ GENDER	VARCHAR(1)
◇ DOB	DATETIME
◇ DOJ	DATETIME
◇ DOP	DATETIME
◇ LOC	VARCHAR(20)
◇ STAFF_ADDRESS	VARCHAR(100)
◇ STAFF_CITY	VARCHAR(20)
◇ STAFF_PIN	VARCHAR(6)
◇ STAFF_INSURDT	DATETIME
◇ STAFF_INEXPDT	DATETIME
◇ PHONE	VARCHAR(13)
◇ MOBILE	VARCHAR(10)
◇ BG	VARCHAR(10)
◇ SL	INT(11)
◇ ATT_TYPE	CHAR(1)

Table 4.3.2 customer



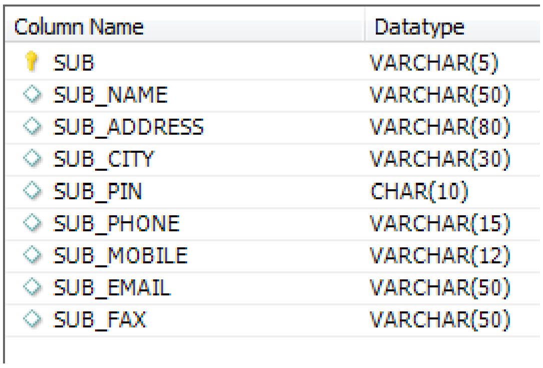
Column Name	Datatype
🔑 CUST	CHAR(3)
◇ CUST_PASSWD	VARCHAR(12)
◇ CUST_NAME	VARCHAR(80)
◇ CUST_OWNER	VARCHAR(80)
◇ CUST_ADDRESS	VARCHAR(140)
◇ CUST_CITY	VARCHAR(20)
◇ CUST_PIN	CHAR(7)
◇ CUST_PHONE	VARCHAR(40)
◇ CUST_MOBILE	VARCHAR(20)
◇ CUST_CONTACT	VARCHAR(60)
◇ CONTACT_ADD	VARCHAR(200)
◇ CONTACT_PH	VARCHAR(60)
◇ CONTACT_MOBILE	VARCHAR(40)
◇ CONTACT_EMAIL	VARCHAR(35)
◇ CUST_EMAIL	VARCHAR(35)
◇ CUST_FAX	VARCHAR(40)
◇ CONTACT_FAX	VARCHAR(20)
◇ CUST_CATEGORY	VARCHAR(20)

Table 4.3.3 vendor



Column Name	Datatype
🔑 SUP	CHAR(5)
◇ SUP_NAME	VARCHAR(50)
◇ SUP_ADDRESS	VARCHAR(200)
◇ SUP_CITY	VARCHAR(20)
◇ SUP_PIN	CHAR(7)
◇ SUP_PHONE	VARCHAR(13)
◇ SUP_MOBILE	VARCHAR(10)
◇ SUP_EMAIL	VARCHAR(40)
◇ SUP_CON_PERS	VARCHAR(25)
◇ SUP_FAX	VARCHAR(13)
◇ SUP_CON_ADD	VARCHAR(100)
◇ SUP_CON_PH	VARCHAR(13)
◇ SUP_LSTNO	VARCHAR(25)
◇ SUP_CSTNO	VARCHAR(25)
◇ SUP_ECCNO	VARCHAR(25)
◇ SUP_DEL	VARCHAR(2)
◇ SUP_DELDT	DATETIME

Table 4.3.4 subcontractor



Column Name	Datatype
🔑 SUB	VARCHAR(5)
◇ SUB_NAME	VARCHAR(50)
◇ SUB_ADDRESS	VARCHAR(80)
◇ SUB_CITY	VARCHAR(30)
◇ SUB_PIN	CHAR(10)
◇ SUB_PHONE	VARCHAR(15)
◇ SUB_MOBILE	VARCHAR(12)
◇ SUB_EMAIL	VARCHAR(50)
◇ SUB_FAX	VARCHAR(50)

4.4. Normalization

Normalization is the process of efficiently organization data in a database. There are two goals of the normalization process: eliminating redundant data (for example, storing related data in more than one table) and ensuring data dependencies make sense (only storing related data in table). If the database design is not perfect, it may contain anomalies, which are like a bad dream for any database administrator. Managing a database with anomalies is next to impossible.

Update anomalies − If data items are scattered and are not linked to each other properly, then it could lead to strange situations. For example, when we try to update one data item having its copies scattered over several places, a few instances get updated properly while a few others are left with old values. Such instances leave the database in an inconsistent state.

Insert anomalies − we tried to insert data in a record that does not exist at all. Normalization is a method to remove all these anomalies and bring the database to a consistent state.

First Normal Form (1NF)

- Eliminate duplicative columns from the same table.

Ex: In customer table, the following columns are cust, cust_name, cust_address, cust_city, cust_pin, cust_phone, cust_mobile, cust_contact, contact_add, contact_ph, contact_mobile, contact_email, contact_fax, cust_email, cust_fax, cust_category.

Second Normal Form (2NF)

- Meet all the requirement of the first normal form.
- Each group of related data and identify each row with a unique column or set of columns (the primary key).

Ex: In customer table, the following columns are cust (CUST_PK), cust_name, cust_address, cust_city, cust_pin, cust_phone, cust_mobile, cust_contact, contact_add, contact_ph, contact_mobile, contact_email, contact_fax, cust_email, cust_fax, cust_category.

Here CUST_PK is the primary key of this table.

4.6. Class Diagram

The class diagram is a static diagram. It represents the static view of an application. Class diagram is not only used for visualizing, describing and documenting different aspects of a system but also for constructing executable code of the software application.

The class diagram describes the attributes and operations of a class and also the constraints imposed on the system. The class diagrams are widely used in the modelling of object oriented systems because they are the only UML diagrams which can be mapped directly with object oriented languages. The class diagram shows a collection of classes, interfaces, associations, collaborations and constraints. It is also known as a *structural diagram*.

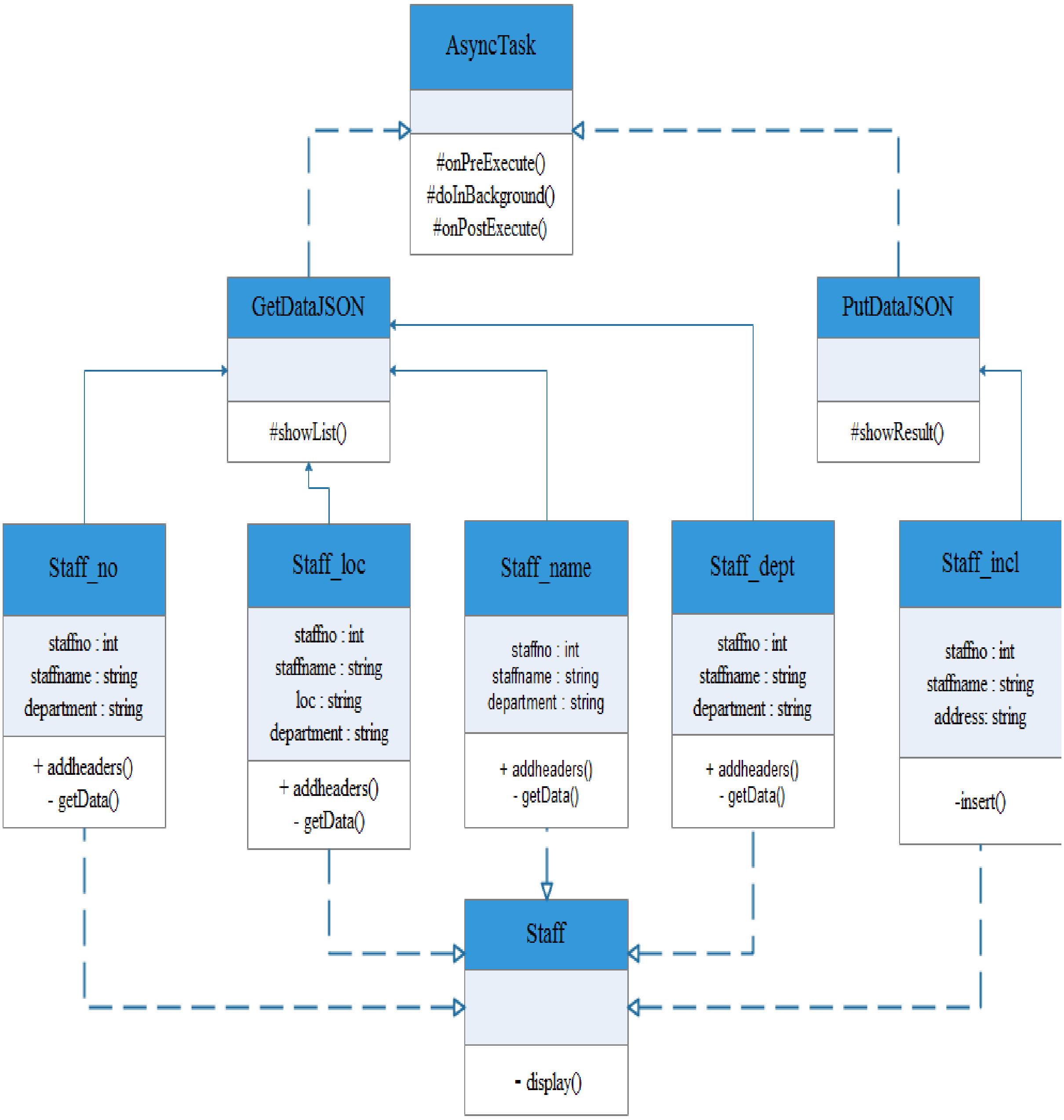


Fig. 4.12 Staff Class diagram

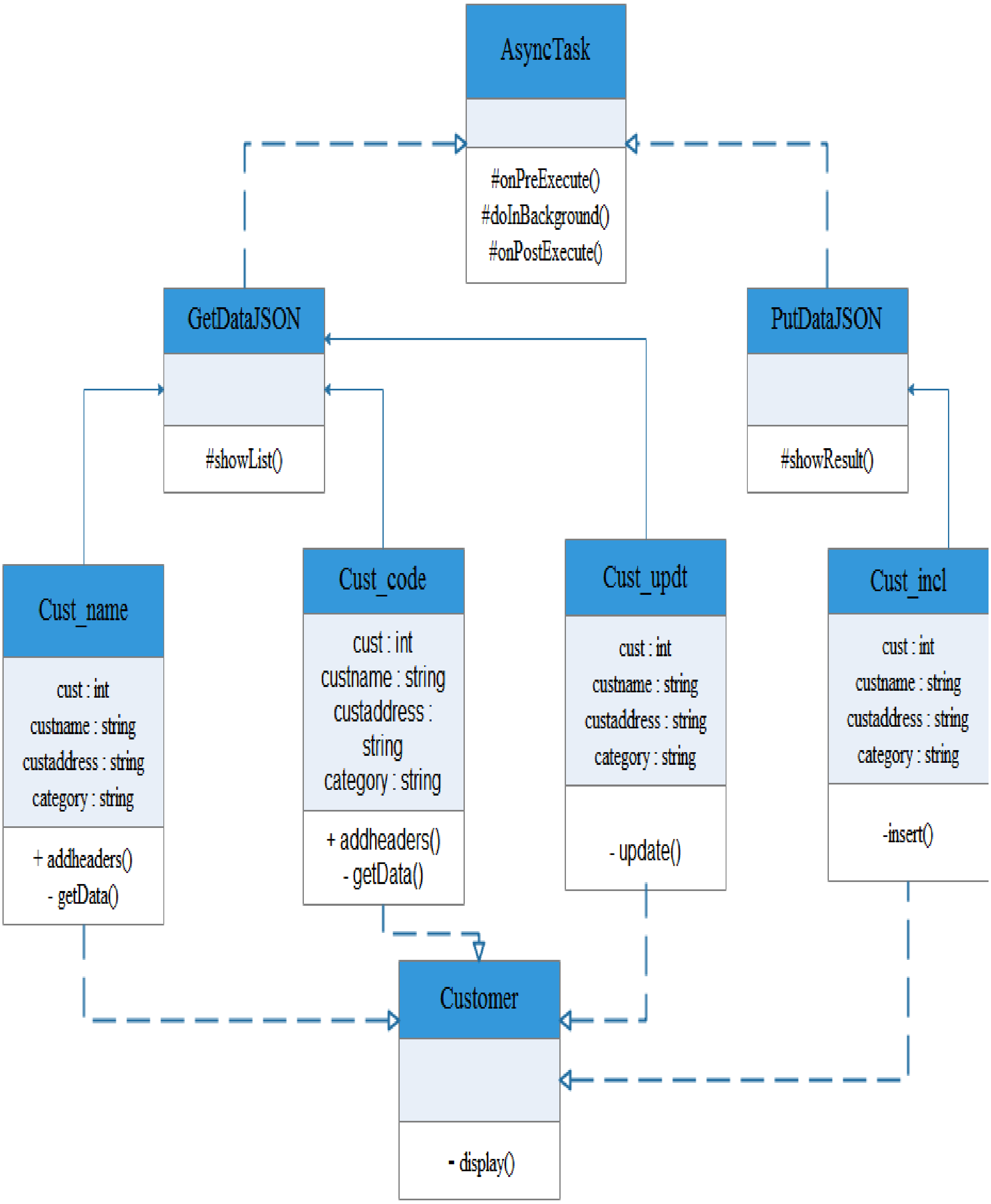


Fig. 4.13 Customer Class diagram

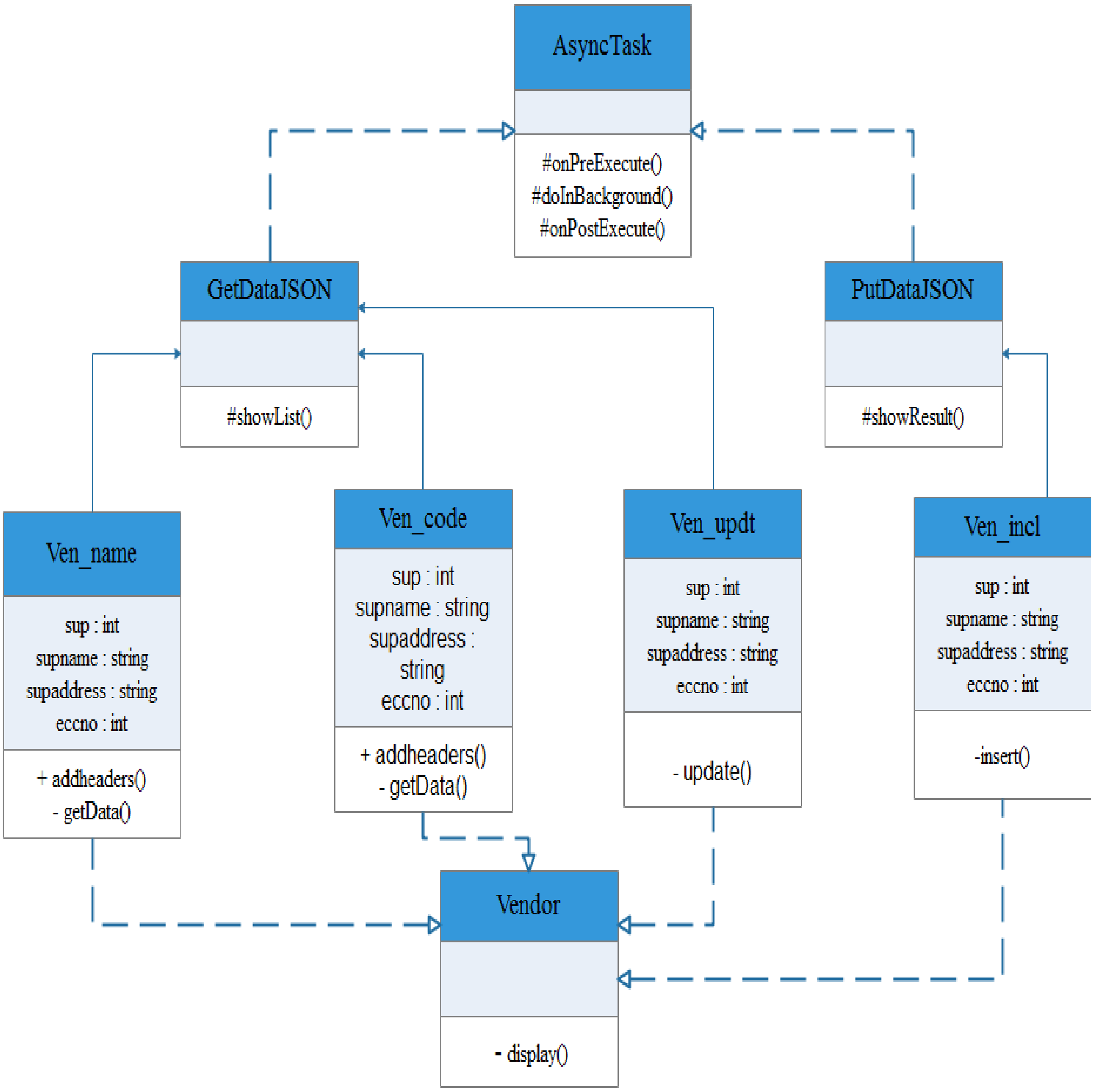


Fig. 4.14 Vendor Class diagram

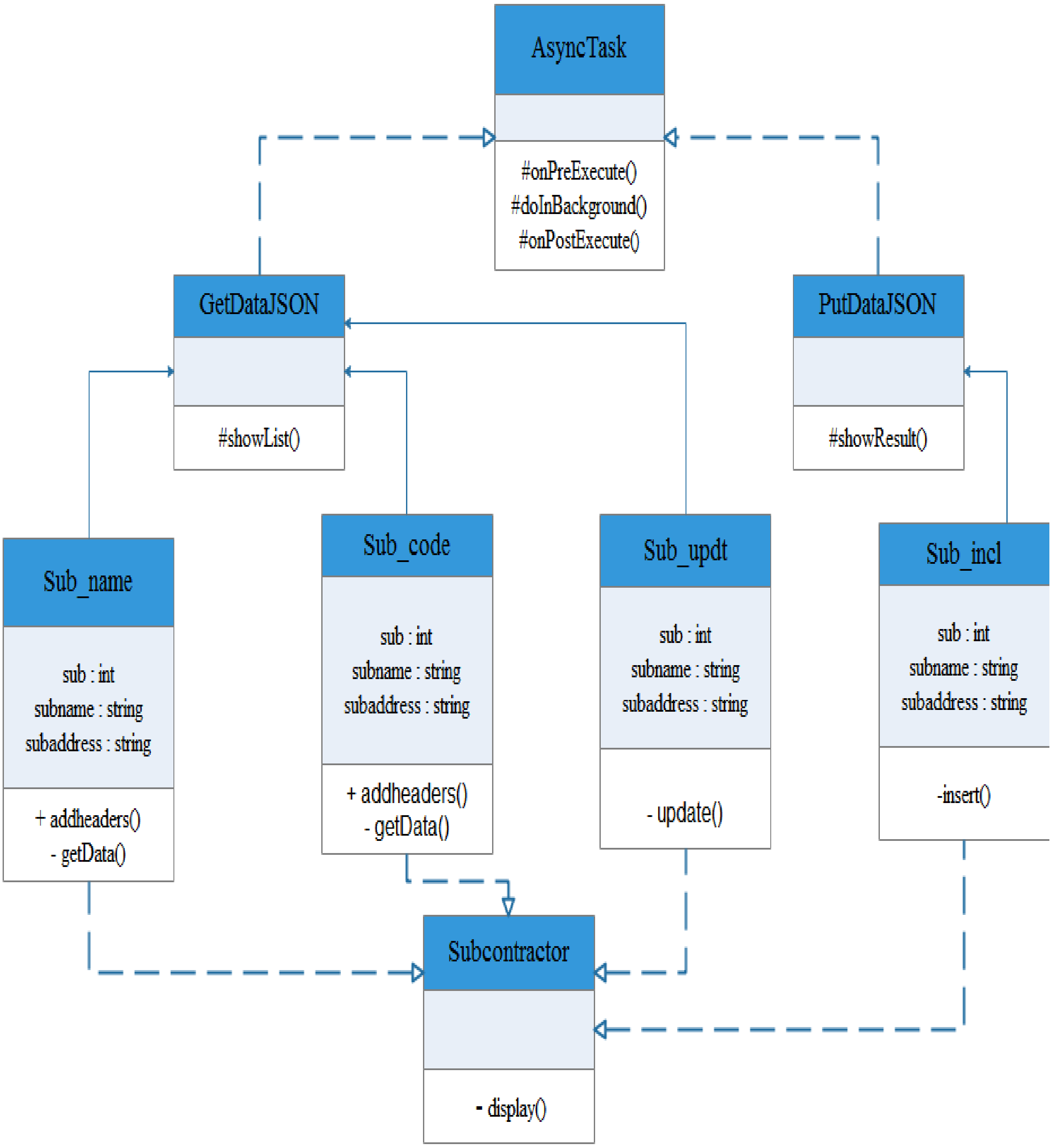


Fig. 4.15 Subcontractor Class diagram

5. CODING AND DEBUGGING

5.1 Functional Documentation

The system maintains all the administrative activities of all the RSW employees, customers, vendors and subcontractor. The entered information will be stored in database and will be used for further use.

5.1.1 Staff

- New entry
- Report of staff details
    - Code wise
    - Name wise
    - Department wise
    - Location wise
- Updating the details
- Password Updation

The module describes the details of all the RSW employees. Staff members have to enter their own details and this will be similar to registration form. The details will be used for future use.

5.1.2 Customer

- New entry
- Report of staff details
    - Code wise
    - Name wise
- Updating the details

The module describes all the details of the customer of RSW. Customers enter their details so that report of all customers will be maintained and will be used for further use.

5.1.3 Vendor

- New entry
- Report of staff details
    - Code wise
    - Name wise
- Updating the details

The module describes all the details of vendor. The entry will be made for all the vendors. Vendor enters their personal details and company details. Thus the entered data are stored in database server and used for further use.

5.1.4 Subcontractor

- New entry
- Report of staff details
    - Code wise
    - Name wise
- Updating the details

The module describes the details of the subcontractor who takes order from the company. The entry will be made for the subcontractor and details such as their personal profile. Thus the entered data are stored in database server and will be used for future use.

5.2 Special Features of Language / Utility

PHP

PHP is a recursive acronym for "PHP: Hypertext Preprocessor". PHP is a server side, user interactive, programming language, works nearly in on all platforms. It is a general purpose scripting language. It can be embedded into html. PHP is a server side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites. It is integrated with a number of popular databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL Server. The MySQL server, once started, executes even very complex queries with huge result sets in record-setting time. Also contains many server interfaces. Open source is one of the best specifications of PHP.

ANDROID

Android is an open source and Linux-based Operating System for mobile devices such as smartphones and tablet computers.

Android offers a unified approach to application development for mobile devices which means developers need only develop for Android, and their applications should be able to run on different devices powered by Android.

Architecture:

Android consists of five layers:

- The Linux kernel which includes useful drivers that allow for example WiFi or Bluetooth.

- The library written in C and C + + that provide higher level functionality such as an HTML engine, or a database (SQLite).

- A runtime environment for applications based on a virtual machine, made for inefficient machines such as telephones. The aim is to translate JAVA in machine language understood by Android.

- A JAVA framework that allows applications running on the virtual machine to organize and cooperate.

- The user applications written in Java (Web browser, contact manager etc. ..)

Android Runtime

This is the third section of the architecture and available on the second layer from the bottom. This section provides a key component called “Dalvik Virtual Machine” which is a kind of Java Virtual Machine specially designed and optimized for Android.

The Dalvik VM makes use of Linux core features like memory management and multi-threading, which is intrinsic in the Java language. The Dalvik VM enables every Android application to run in its own process, with its own instance of the Dalvik virtual machine.

The Android runtime also provides a set of core libraries which enable Android application developers to write Android applications using standard Java programming language.

Application Framework

The Application Framework layer provides many higher-level services to applications in the form of Java classes. Application developers are allowed to make use of these services in their applications.

The Android framework includes the following key services:

Activity Manager − Controls all aspects of the application lifecycle and activity stack.

Content Providers − Allows applications to publish and share data with other applications.

Resource Manager − Provides access to non-code embedded resources such as strings, color settings and user interface layouts.

Notifications Manager − Allows applications to display alerts and notifications to the user.

View System − An extensible set of views used to create application user interfaces.

Activity

An activity is a user interface that allows the user to interact with the screen, to perform actions. For example, a text messaging application could have an activity that displays a list of contacts to send messages. Once the contact is selected, activity could send information to a second activity that could serve to send the message to the contact. When an application is launched, what it displays is the result of an activity. An activity has a required onCreate () method. It is the main method. To interact with the program, through the activity, there must be something displayed, that is why the activity, contains what is called views.

The following Activity lifecycle methods are:

OnCreate

OnCreate is the first method to be called when an activity is created. OnCreate is always overridden to perform any startup initializations that may be required by an Activity such as:

- Creating views
- Initializing variables
- Binding static data to lists

OnCreate takes a Bundle parameter, which is a dictionary for storing and passing state information and objects between activities. If the bundle is not null, this indicates the activity is restarting and it should restore its state from the previous instance.

OnStart

OnStart is always called by the system after OnCreate is finished. Activities may override this method if they need to perform any specific tasks right before an activity becomes visible such as refreshing current values of views within the activity. Android will call OnResume immediately after this method.

OnResume

The system calls OnResume when the Activity is ready to start interacting with the user. Activities should override this method to perform tasks such as:

- Ramping up frame rates (a common task in game building)
- Starting animations
- Listening for GPS updates

OnResume is important because any operation that is done in OnPause should be undone in OnResume, since it's the only lifecycle method that is guaranteed to execute after OnPause when bringing the activity back to life.

OnPause

OnPause is called when the system is about to put the activity into the background or when the activity becomes partially obscured. Activities should override this method if they need to:

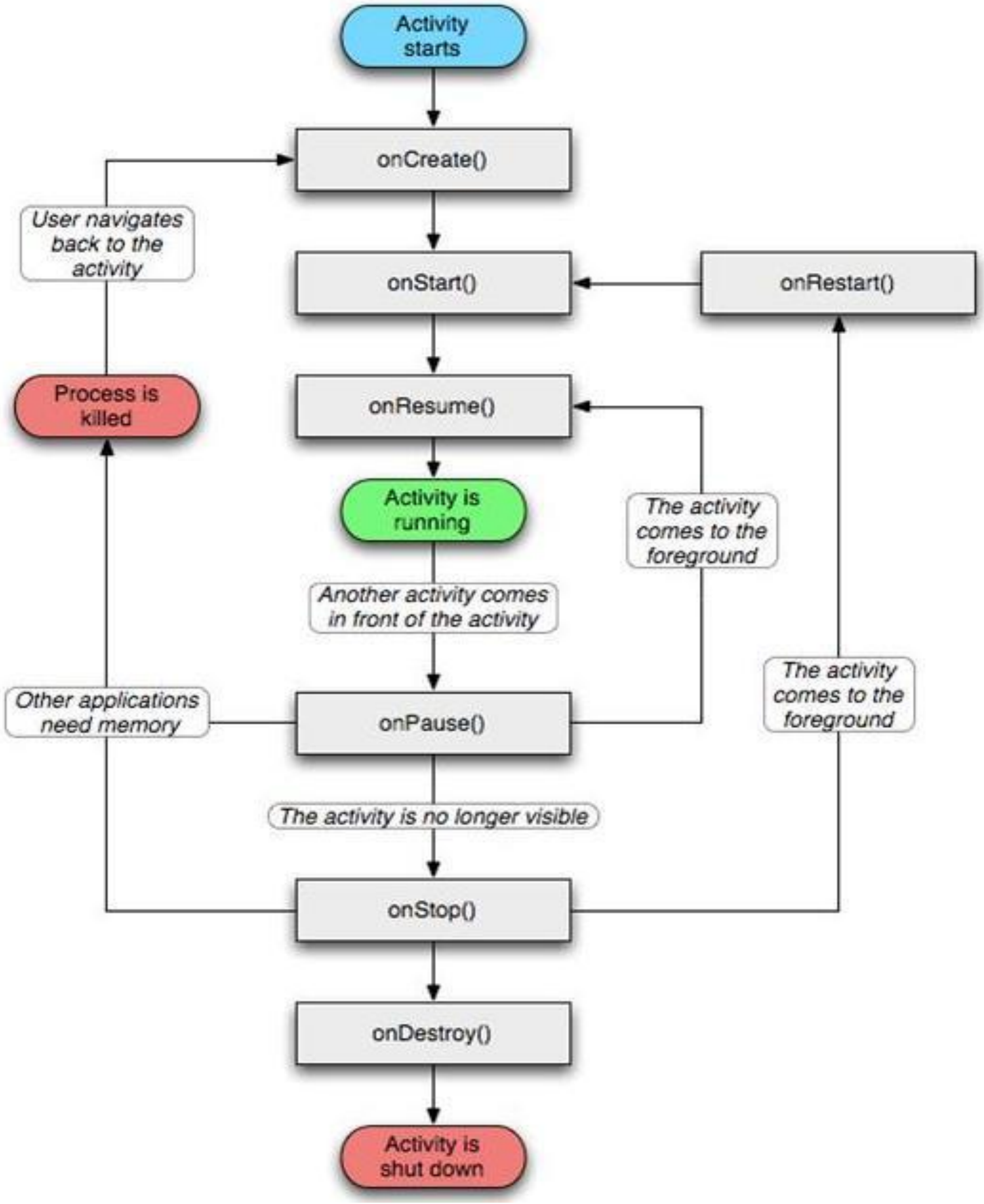
- Commit unsaved changes to persistent data
- Destroy or clean up other objects consuming resources
- Unregister external event handlers or notification handlers (i.e. those that are tied to a service). This must be done to prevent Activity memory leaks.

OnStop

OnStop is called when the activity is no longer visible to the user. This happens when one of the following occurs:

- A new activity is being started and is covering up this activity.
- An existing activity is being brought to the foreground.

- The activity is being destroyed. OnStop may not always be called in low-memory situations, such as when Android is starved for resources and cannot properly background the Activity


Activity starts
onCreate()
User navigates back to the activity
onStart()
onRestart()
Process is killed
onResume()
Activity is running
The activity comes to the foreground
Another activity comes in front of the activity
The activity comes to the foreground
Other applications need memory
onPause()
The activity is no longer visible
onStop()
onDestroy()
Activity is shut down

OnDestroy

OnDestroy is the final method that is called on an Activity instance before it's destroyed and completely removed from memory. In extreme situations, Android may kill the application process that is hosting the Activity, which will result in OnDestroy not being invoked. Most Activities will not implement this method because most clean up and shut down has been done in the OnPause and OnStop methods. The OnDestroy method is typically overridden to clean up long running resources that might leak resources.

OnRestart

OnRestart is called after your activity has been stopped, prior to it being started again. A good example of this would be when the user presses the home button while on an activity in the application. When this happens OnPause and then OnStop methods are called, and the Activity is moved to the background but is not destroyed. If the user were then to restore the application by using the task manager or a similar application, Android will call the OnRestart method of the activity.

View

A View is the basic building block for user interface components. A View occupies a rectangular area on the screen. View is the base class for widgets, which are used to create interactive UI components (buttons, text fields, etc.).There is differents kinds of views, for example a ListView is able to display only an interactive list to display, while a WebView allows to display a web page. As said before, A view occupies a rectangular area on the screen. To organise these rectangles on the screen, there is a text file written in XML for every different screen.

Xml

Xml means Extensible Markup Language. Android provides a straightforward XML vocabulary that corresponds to the View classes and subclasses. The goal of using Android's XML vocabulary, is to quickly design UI layouts and the screen elements they contain, in the same way that creating web pages in HTML : with a series of nested elements.

Intent

An activity can of course start another one, even if it but to do this, it will need a special object called Intent. An intent is basic description of an operation to be performed. It can launch an Activity, send a broadcastIntent to any interested BroadcastReceiver components, and communicate with a background Service. An Intent performs binding between the code in different applications. It can be thought of as the link between activities.

Android Manifest

AndroidManifest.xml file is necessary for all android applications and must have this name in its root directory. In the manifest, it can find essential information about the application for the Android system, information that the system must have before it can run any of the application's code.

The name of the Java package for the application. The package name serves as a unique identifier for the application.

- The description of the components of the application: the activities, services, broadcast receivers, and content providers that the application is composed of and under what conditions they can be launched .

- The processes that will host application components.

- The permissions the application must have in order to access protected parts of the API and interact with other applications.

- The permissions that others are required to have in order to interact with the application's components.

JSON

JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate. It is based on a subset of the JavaScript Programming Language.

Keys and Values

The two primary parts that make up JSON are keys and values. Together they make a key/value pair.

- **Key:** A key is always a string enclosed in quotation marks.
- **Value:** A value can be a string, number, boolean expression, array, or object.
- **Key/Value Pair:** A key value pair follows a specific syntax, with the key followed by a colon followed by the value. Key/value pairs are comma separated.

In the Android system, the application and the database server cannot interact directly only if use a Web server interaction. It is necessary to use the Web server to complete the operation on the database, such as addition, deletion, alteration and so on. And then

exchange data between Android application and Web server, so as to achieve the purpose that Android application operates the database. And in this process, the data format is JSON

Android application gets some data inputted by users and some operating instructions through the interface and assembles data relative to operational database into RequestJSON by using the existing JSON assembly tools and then sends it to the Web server

After the Web server received RequestJSON, by means of the existing JSON analytical tools for analysis, it can get the actual request data. Then use these data to do the corresponding operation on the database and at the same time, get operating results. The results data will be assembled into ResponseJSON and return to Android application

After Android application received ResponseJSON, it can get the result data and show it to the users by using the existing JSON analytical tools for analytical calculations.

5.3 Pseudo code / Algorithm

Staff

Step 1: Start

Step 2: Click the staff image button in the home page.

Step 3: insert all the data in the required fields in the activity “Inclusion of staff details”.

Step 4: Staff can also view the details such as name wise, code wise, department wise.

Step 5: Also staff can update the password in this module.

Step 6: End

Customer

Step 1: Start

Step 2: Click the staff image button in the home page.

Step 3: insert all the data in the required fields in the activity “Inclusion of staff details”.

Step 4: Staff can also view the details such as name wise, code wise, department wise.

Step 5: Also staff can update the password in this module.

Step 6: End

Vendor

Step 1: Start

Step 2: Click the staff image button in the home page.

Step 3: insert all the data in the required fields in the activity “Inclusion of staff details”.

Step 4: Staff can also view the details such as name wise, code wise, department wise.

Step 5: Also staff can update the password in this module.

Step 6: End

Subcontractor

Step 1: Start

Step 2: Click the staff image button in the home page.

Step 3: insert all the data in the required fields in the activity “Inclusion of staff details”.

Step 4: Staff can also view the details such as name wise, code wise, department wise.

Step 5: Also staff can update the password in this module.

Step 6: End

6. TESTING

6.1 DEFINITION

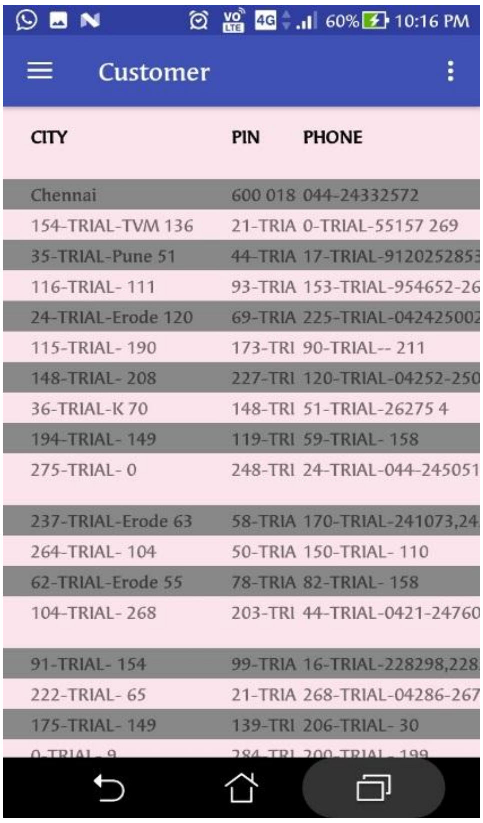
The importance of software testing and its impact on software cannot be underestimated. Software testing is a fundamental component of software quality assurance and represents a review of specification, design and coding. The greater visibility of software systems and the cost associated with failure are motivating factors for planning, through testing.

6.1.1. Types of Testing Done

The following are the different types have been carried out:

Integration Testing

Integration testing is the phase in software testing in which individual software modules are combined and tested as a group. It occurs after unit testing and before system testing. Integration testing takes as its input modules that have been unit tested, groups them in larger aggregates, applies tests defined in an integration test plan to those aggregates and delivers as its output the integrated system ready for system testing.

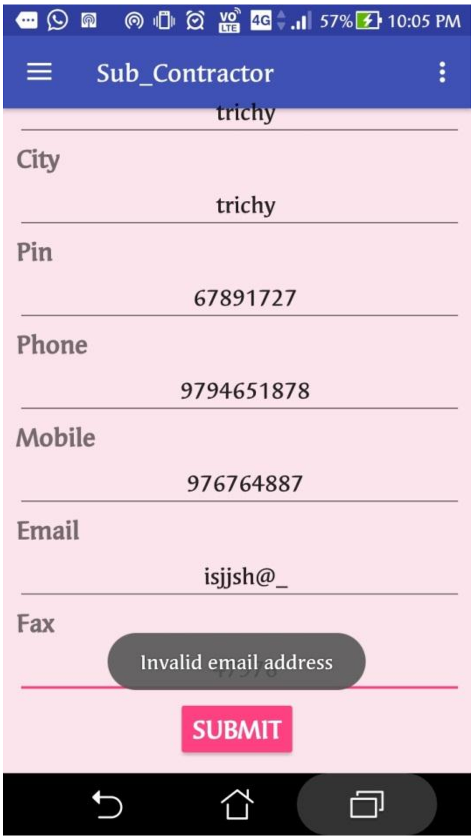


Customer

CITY	PIN	PHONE
Chennai	600 018	044-24332572
154-TRIAL-TVM 136	21-TRIA	0-TRIAL-55157 269
35-TRIAL-Pune 51	44-TRIA	17-TRIAL-9120252853
116-TRIAL- 111	93-TRIA	153-TRIAL-954652-26
24-TRIAL-Erode 120	69-TRIA	225-TRIAL-042425002
115-TRIAL- 190	173-TRI	90-TRIAL-- 211
148-TRIAL- 208	227-TRI	120-TRIAL-04252-250
36-TRIAL-K 70	148-TRI	51-TRIAL-26275 4
194-TRIAL- 149	119-TRI	59-TRIAL- 158
275-TRIAL- 0	248-TRI	24-TRIAL-044-245051
237-TRIAL-Erode 63	58-TRIA	170-TRIAL-241073,24
264-TRIAL- 104	50-TRIA	150-TRIAL- 110
62-TRIAL-Erode 55	78-TRIA	82-TRIAL- 158
104-TRIAL- 268	203-TRI	44-TRIAL-0421-24760
91-TRIAL- 154	99-TRIA	16-TRIAL-228298,228
222-TRIAL- 65	21-TRIA	268-TRIAL-04286-267
175-TRIAL- 149	139-TRI	206-TRIAL- 30
0-TRIAL- 9	284-TRI	200-TRIAL- 199

Validation Testing

Validation Testing can be defined in many ways, but a simple definition is that validation succeeds when the software functions in a manner that can reasonably expected by a customer. After validation test has been conducted, one of the following two possible conditions exists. The functions or performance characteristics confirm to specification and are accepted.



trichy

City: trichy

Pin: 67891727

Phone: 9794651878

Mobile: 976764887

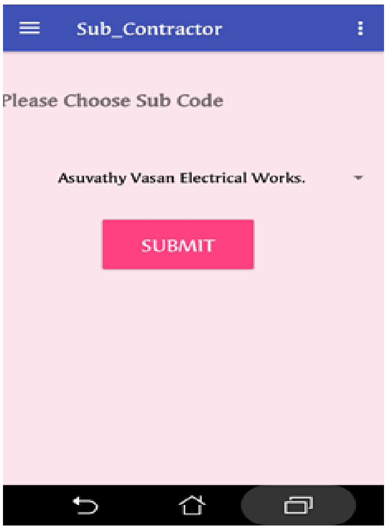
Email: isjjsh@_

Fax

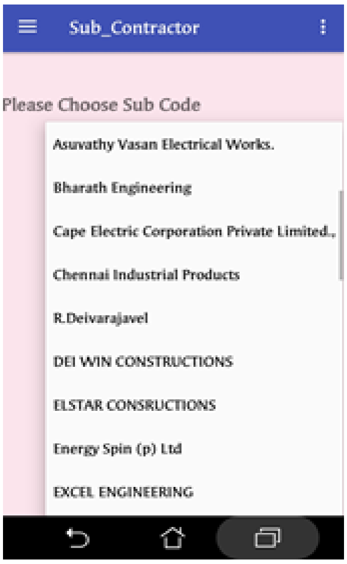
Invalid email address

User Acceptance Testing

User acceptance of a system is a key factor of any system. The system under consideration is tested for the acceptance by constantly keeping in touch with the prospective system users at the same time of developing and marketing changes whenever required.



Asuvathy Vasan Electrical Works.



Asuvathy Vasan Electrical Works.
Bharath Engineering
Cape Electric Corporation Private Limited.,
Chennai Industrial Products
R.Deivarajavel
DEI WIN CONSTRUCTIONS
ELSTAR CONSRUCTIONS
Energy Spin (p) Ltd
EXCEL ENGINEERING

7. USER MANUAL

7.1 Hardware Requirements

Processor	: ANY CORE PROCESSOR
RAM	: 4 GB (Minimum)
Hard Disk	: 320 GB (Minimum)
Other Devices	: Android smart device (Smart phone, Tablet)

7.2 Software Requirements

Operating System	: Windows 7 or Higher

7.3. Installation Procedures

Install Android Studio

Setting up Android Studio takes just a few clicks. (You should have already downloaded Android Studio.)

To install Android Studio on Windows, proceed as follows:

Step 0: Pre-Installation Check List

1. Before installing Android SDK, you need to install Java Development Kit (JDK). Read "How to install JDK". Ensure that your JDK is at or above 1.8. You can check your JDK version with command "javac -version".
2. Uninstall older version(s) of "Android Studio" and "Android SDK", if any.
3. The installation and many operations take a LONG time to complete. Do NOT stare at your screen or at the ceiling. Browse through the "Android Developers" @ https://developer.android.com. There are three main menus: "Design", "Develop", and "Distribute". Choose "Develop", you can find the Android "Guides", "Reference" and "Samples". For beginners, browse through the "Guides".

4. We need to install:
    a. Android Studio, which is an Integrated Development Environment (IDE) based on IntelliJ (a popular Java IDE); and
    b. Android Software Development Kit (SDK).

Step 1: Install "Android Studio IDE"

(For Windows)

1. Check that environment variable JAVA_HOME is set to the JDK installation directory via command "set JAVA_HOME". Otherwise, set the JAVA_HOME via "Control Panel". Check the detail steps HERE.
2. Check the system requirements for Android Studio/SDK @ https://developer.android.com/sdk/index.html#Requirements, e.g., Windows 7/8/10, recommended 8GB of RAM and 4GB of disk space.
3. Goto "Android Developer" @ https://developer.android.com/index.html ⇒ Select "Get Android Studio" ⇒ "Download Android Studio 3.x.x for Windows (683MB)", e.g., android-studio-ide-171.xxxxxxx-windows.exe.
4. Run the downloaded installer. Follow the on-screen instruction and accept the defaults to complete the installation. You need about 3-4GB of free disk space! Take note (and take photo) on the installation locations of "Android Studio", by default @ "C:\Program Files\Android\Android Studio".

Step 2: Installing Android SDK

Notes: Adding too many SDK packages, especially the so-called system images for emulating different device (e.g., various phone/tablet), will take an extremely LONG time, especially if everyone is downloading and jamming up the network. The system images also take up a lot of disk space - more than 10 GB per API level!!! For our toy project, we only need a small set of SDK packages.

[TODO] Check if it is possible to copy the SDK instead of downloading the 1GB during installation?

(For Windows)

1. Launch Android Studio ⇒ It will run the "setup" wizard for the first launch ⇒ do not import previous settings ⇒ In "Installation Type", choose "Standard" ⇒ Check the SDK folder, by default @ c:\Users\username\AppData\Local\Android\Sdk ⇒ Finish. This step will download another 1GB of SDK package and take times to complete.

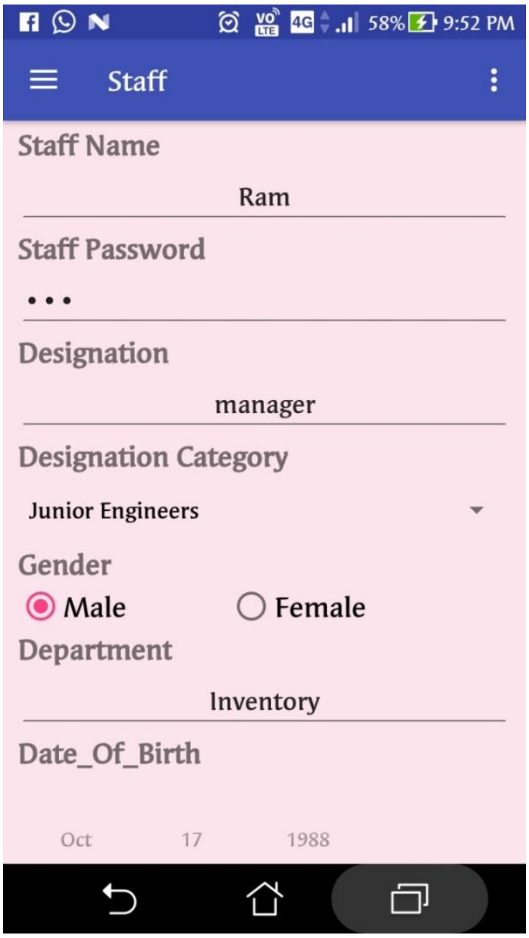
   Note: "AppData" is a hidden directory. You need to choose "View" ⇒ Check "Show Hidden Items".
2. (Optional) You can check the SDK packages installed by selecting "Configure" ⇒ "SDK Manager":
   a) Under "SDK Platforms":
   b) Android API 27
   c) Under "SDK Tools":
   d) Android SDK Build Tools
   e) Android Emulator 27.x.x
   f) Android SDK Platform-Tools 27.x.x
   g) Android SDK Tools 26.x.x
   h) Intel x86 Emulator Accelerator (HAXM installer)
   i) Android Support Repository
   j) Google Repository

a. HOW TO USE:

EMPLOYEE

1. Install the RSW.apk to your mobile device
2. Set the permissions for accessing internet, SMS & phone
3. To use the application Enter the valid login credential.

SAMPLE I/O



Staff Name

Ram

Staff Password

•••

Designation

manager

Designation Category

Junior Engineers

Gender

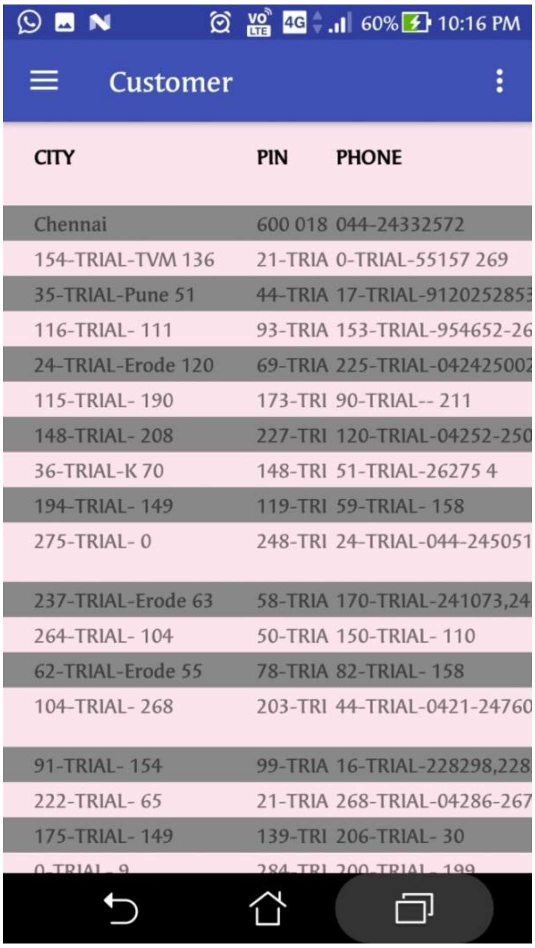
● Male ○ Female

Department

Inventory

Date_Of_Birth

Oct 17 1988



CITY	PIN	PHONE
Chennai	600 018	044-24332572
154-TRIAL-TVM 136	21-TRIA	0-TRIAL-55157 269
35-TRIAL-Pune 51	44-TRIA	17-TRIAL-912025285
116-TRIAL- 111	93-TRIA	153-TRIAL-954652-26
24-TRIAL-Erode 120	69-TRIA	225-TRIAL-042425002
115-TRIAL- 190	173-TRI	90-TRIAL-- 211
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36-TRIAL-K 70	148-TRI	51-TRIAL-26275 4
194-TRIAL- 149	119-TRI	59-TRIAL- 158
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237-TRIAL-Erode 63	58-TRIA	170-TRIAL-241073,24
264-TRIAL- 104	50-TRIA	150-TRIAL- 110
62-TRIAL-Erode 55	78-TRIA	82-TRIAL- 158
104-TRIAL- 268	203-TRI	44-TRIAL-0421-24760
91-TRIAL- 154	99-TRIA	16-TRIAL-228298,228
222-TRIAL- 65	21-TRIA	268-TRIAL-04286-267
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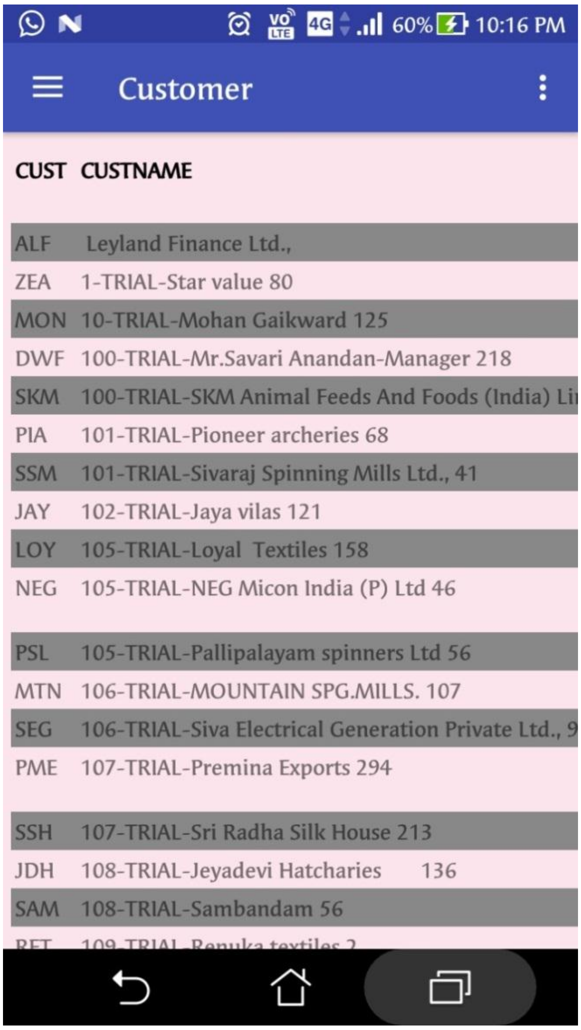
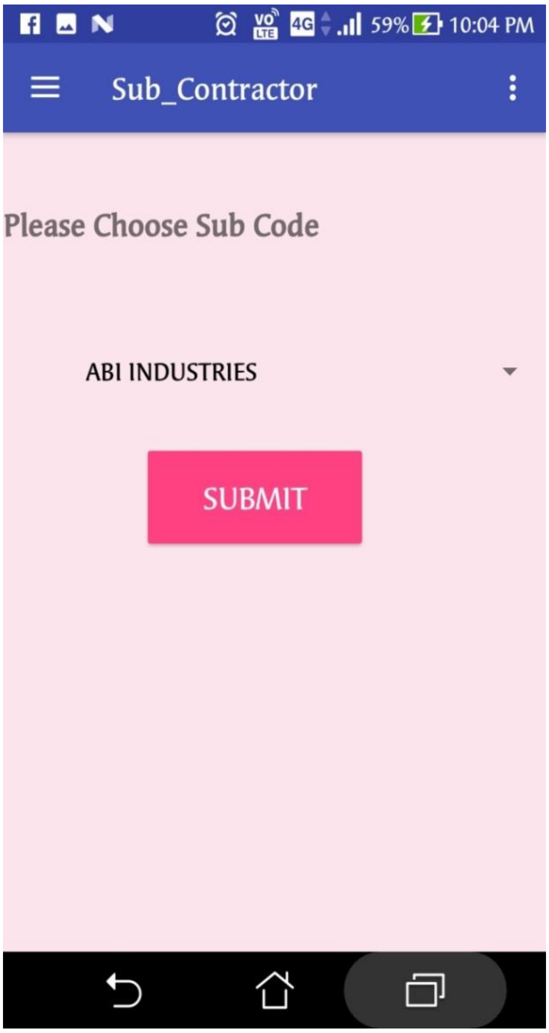
0-TRIAL- 9	284-TRI	200-TRIAL- 199



CUST	CUSTNAME
ALF	Leyland Finance Ltd.,
ZEA	1-TRIAL-Star value 80
MON	10-TRIAL-Mohan Gaikward 125
DWF	100-TRIAL-Mr.Savari Anandan-Manager 218
SKM	100-TRIAL-SKM Animal Feeds And Foods (India) Li
PIA	101-TRIAL-Pioneer archeries 68
SSM	101-TRIAL-Sivaraj Spinning Mills Ltd., 41
JAY	102-TRIAL-Jaya vilas 121
LOY	105-TRIAL-Loyal Textiles 158
NEG	105-TRIAL-NEG Micon India (P) Ltd 46
PSL	105-TRIAL-Pallipalayam spinners Ltd 56
MTN	106-TRIAL-MOUNTAIN SPG.MILLS. 107
SEG	106-TRIAL-Siva Electrical Generation Private Ltd., 9
PME	107-TRIAL-Premina Exports 294
SSH	107-TRIAL-Sri Radha Silk House 213
JDH	108-TRIAL-Jeyadevi Hatcharies 136
SAM	108-TRIAL-Sambandam 56
RET	109-TRIAL-Renuka textiles 2

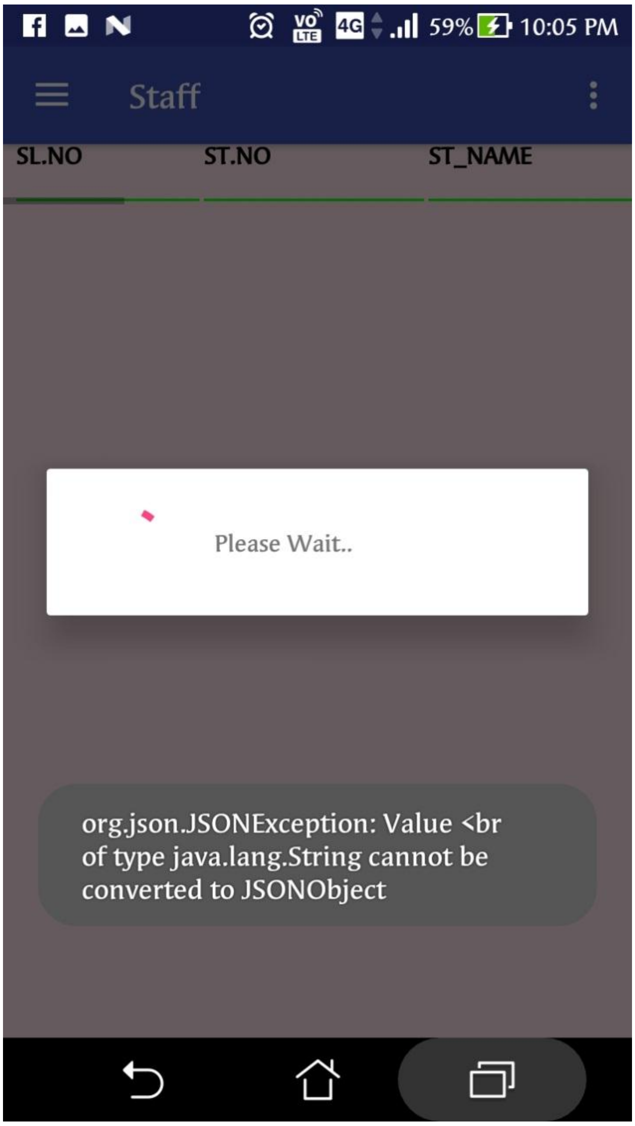


Please Choose Sub Code

ABI INDUSTRIES

ERROR MESSAGE

The error occurred here is an exception called “org.JSONException”. Thrown to indicate a problem with the JSON API. Such problems include Use of null as a name, Use of numeric types not available to JSON, such as NaNs or infinities. Lookups using an out of range index or non-existent name.



Please Wait..

org.json.JSONException: Value <br of type java.lang.String cannot be converted to JSONObject

8. CONCLUSION

8.1 Summary of the Project

The overall application demonstrates the administrative details of all the staff, customers, vendors and subcontractors who are all interrelated with RSW. It is necessary to make entry for each and every one to place orders from the company or to supply the goods. The administrator maintains all the details of the employees and RSW faculty members. The process of insertion and Updation will be made through this application. The details entered by the user will be stored in database and will be used for further use.

8.2 New Enhancement

The system is enhanced from web application to an android application and it has features of making entry and updating their own profile. By selecting the staff name and staff no the staff can update their details.

8.3 Future Possibilities

In future, the application will be designed in iOS and also the application will be further developed using new technology called iot (Internet of Things) and will be great impact for the company and also to the users.

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