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Sonargaon University (SU)
সোনারগাঁও ইউনিভার্সিটি (এসইউ)
WE WILL RISE UP WE WILL SHINE

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Client Management System (CMS)

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This project has been submitted to the Department of the Computer Science & Engineering at Sonargaon University in the partial fulfillment of the requirement for the degree of Bachelor of Science in Computer Science & Engineering.

January, 2019

DECLARATION

The project has been submitted to the Department of the Computer Science & Engineering, Sonargaon University in the partial fulfilment of the requirement for the degree of Bachelor of Science in CSE performed by us under supervision of **Emam Hossen, Lecturer, Department of Computer Science and Engineering** at Sonargaon University. We hereby, declare that this project has not been submitted elsewhere for the requirement of any degree or diploma or any other purpose.

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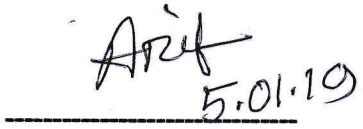
Letter of Acceptance

This Project entitled **"Client Management System (CMS)"** submitted By Md. Mustafizur Rahman ID: CSE1502005013, Robin Hossain Babu ID: CSE1502005031, Md. Sahinur Rahman ID: CSE1502005046, Md. Salman Ahmed ID: CSE1502005050, Md. Abdur Rahim ID: CSE1502002025, Sabrina Khatun ID:1502005028 to the Department of Computer Science and Engineering, Sonargaon University, Dhaka, Bangladesh has been accepted as satisfactory for the partial fulfilment of the requirement for the degree of Bachelor of Science in Computer Science & Engineering and approved as to its style and contents.

Board of Examiners



Examiner 1



Examiner 2



Examiner 3

Examiner 4

ABSTRACT

This is a project to develop a Client Management System (CMS) system. Client management system (CMS) is a combination of people, processes and technology that seeks to understand a company's clients. The main purpose of CMS is to improve the relationship with the clients by using different module like analysis, client service and others. The objective to do this project is to develop a system which can help the organizations to decrease their defection rate of clients. Because the lower defection rate means the bigger client base, which lead to more profit for the organization.

CMS in this project is included few modules. The modules included are client filtering, client profiling and meting tools. Client filtering allows the user filter out a client list from the client database by using client's demographic information. Client profiling to makes each client is having a profile; the user may see the client's profile included analysis of client. Meting Tools let the users to know how many times meeting was completed with the client. After that, the user can see the analysis of the client response status.

The tools used to develop this CMS included PHP, Web server, Mysql, javascript, HTML, CSS, jquery and jquery's plugin.

ACKNOWLEDGEMENTS

First and foremost, we would like to all praises and thanks to the almighty Allah for giving us courage to complete this project.

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Chapter 01
Introduction

1.1 Motivation and Problem Statement

Bangladesh Telecommunication Regulatory Commission (BTRC) published a report that showed 11,676 "Grameen Phone" clients left in few months for their poor clients service experience, service failed to meet their expectation, Business inconsistence etc.

Losing client is a problem facing by every organization. Why client was turnover? There are many reasons for a client to turnover such as wrong product pricing, poor store atmosphere, and lack of product knowledge, terrible client service and other. One of the fundamental reasons of client to turnover is weak relationship with the client. A weak relationship with clients is impossible to have high loyalty clients. Client will always like the company make them feel better, and they will be loyal to those company. All of the companies having the client defection rate, they must have a solution to decrease their client defection rate. The tool to decrease the client defection rate is client management system (CMS). CMS can help the company to identified, acquire, satisfy and retain profitable clients from existing client base.

Why the problem of losing client is important? The losing of client also means that the profit of the company was decrease. In other words, decrease the client defection will increase company's profit at all.

1.2 Project Scope

One of the main reasons, often cited for business failure is because they are bad at managing people, both in terms of the staff they employee and the clients they have. In business, effective communication, both with staff and clients is key to success.

However, this can be difficult and often there are gaps in knowledge which mean that effective and relevant communication can become near on impossible. However, through implementing a CMSs system, all forms of communication and therefore knowledge can be significantly improved. For many companies, client data is held in variety of places including in people's heads, on spreadsheets and in different files. Essentially, this can result in 'islands of information' which only certain individuals have access to. This can have serious implications on the level of knowledge employees have and therefore the level of client service which they deliver.

CMS is a combination of business strategy, software and business processes which when implemented correctly bring significant tangible benefits to companies of all types and sizes, regardless of sector.

Essentially, Client Management System (CMS) is a way of improving business efficiency. It centralizes company and contact information and tracks all activities and communications. CMS is all about building and strengthening client relationships to keep them coming back, while helping the organization gain new clients. CMS systems streamline internal business processes by effectively integrating marketing, sales and client service functions.

1.3 Project Objective

Client Management System (CMS) is an enterprise-wide strategy for presenting a single face to the client. A long-term relationship with client gives the service marketers a competitive edge. A company's revenue, profit and market share come ultimately from the clients. The need for building a relationship has become the essential part for the long-term success of the organization. The process of CMS involves creation and management of data mines, development of appropriate organizational structure, investment in technology and development of people.

1.4 Impact, Significant and Contribution

By having this client software, the organization will able to track the clients fulfill their parameter. The organization can easily find out the client by filtering their data. For example, if the organization is promoting a new product and target the client who was female, single state and having income between TK. 3,000 and TK. 5,000, this system would it to target the possible buyer even the best location which having the largest number of possible buyers. With this client filtering module, the marketer may also find out the client who was decreasing their monthly purchase month by month, then they may carry out the strategy to increase the loyalty of these possible leave client. Beside the client filtering system, this system may also let the user to see the relationship between the client and the organization. So, the employee can respond the client as soon as possible because they can get the client information in one page.

1.5 Background Study

1.5.1 Client

In sales, commerce and economics, a client (sometimes known as a customer, buyer, or purchaser) is the recipient of a good, service, product or an idea - obtained from a seller, vendor, or supplier via a financial transaction or exchange for money or some other valuable consideration.

1.5.2 Client Management System (CMS)

Client Management System (CMS) is "the collection and analysis of information designed for sales and marketing decision support, to understand and support existing and potential client needs. It includes account management, catalog and order entry, payment processing, credits and adjustments, and other functions."

To maintain CMS need to some initial step as like:

- Manage client contact information
- Organize client interactions in a central location
- Track client habits, actions and preferences
- Weaken expense and business risk
- Measure success of campaigns
- Provide instant metrics
- Manage client service requests
- Track industry trends
- Create more personalized client experiences

1.5.3 Importance of Client Management System (CMS)

Client Management System (CMS) software can help your business gain and convert more leads and make a higher annual profit.

Client Satisfaction: Every company needs their clients to be satisfied. Satisfied clients are more likely to return to make further purchases, as well as to promote a company's good name and recommend services to others.

Become More Efficient: Implementing CRM software helps your client service team react to client queries and concerns more quickly and efficiently, which will boost productivity as well as client satisfaction. In sales and marketing departments, CRM can even help track all leads and campaigns from beginning to end, making the entire process more effective.

Attract New Client: CRM software will discover useful information about your client base and allow you to work out where there are gaps that need to be filled. Exploring the reasons why clients fail to make purchases or why they do not rate your company's services can help you adapt new policies and techniques which will help you attract new clients.

Chapter 02
Literature Review

2.1 Introduction

In this literature review, this project going to review on the article, book and internet resources to study about the client management System (CMS), client segmentation and also the solution provided by others.

2.2 Client Management System (CMS)

2.2.1 Definition of CMS

One definition of Client Management would be that it encompasses all the systems, processes and applications needed to manage the client relationship.

The implementation of a robust IT system for collecting and collating client data is necessary for most large companies these days. Even the smallest organization will have a need for some kind of client management system.

Client Management systems and applications (also known as CRM, or Client Relationship Management) are used to capture, research and analysis information such as client behavior, buying preferences and demographics.

Client retention and loyalty are important goals for successful companies. These business aim to retain and develop a core client base. Good client management enables companies to ensure the services they provide are in line with what the client wants. Importantly, it can also identify further opportunities for growth.

2.2.2 Increase revenue with improved client relationships

Managing your client relationships is one of the easiest, most effective methods to increase share of wallet, loyalty and retention among clients. Get a full view of your clients' credit Activity and behavior to predict fraudulent behavior and reduce risk or know when to maximize opportunities for cross-selling and up-selling. We can help you learn more about:

Client information and database management

Eliminating multiple client databases can help you gain a single client view, break down silos and improve data quality. Streamline your client databases by employing our data and client management systems to manage and cleanse data from multiple sources.

Relationship building

It's always easier to cross-sell or up-sell a current client than it is to acquire or make a sale to a new one. Utilize client notification services, credit activity reports and behavior data to build strong client relationships and know when to approach existing clients with timely, personalized offers. Grow your portfolio and increase share of wallet with analytics tools that determine total client value, better client management and retention strategies.

Client portfolio management

Identify trends in your portfolio and be notified when your clients receive offers from your competitors. Access Experian's extensive up-to-date client data and portfolio management applications to maximize your revenue, minimize your risk, make timely offers to retain existing accounts and employ stronger risk-reward decisions.

2.3 Client Segmentation

2.3.1 What is client segmentation?

Client segmentation is the process of dividing clients into groups based on common characteristics so companies can market to each group effectively and appropriately.

In business-to-business marketing, a company might segment clients according to a wide range of factors, including:

- Industry
- Number of employees
- Products previously purchased from the company
- Location

In business-to-consumer marketing, companies often segment clients according to demographics that include:

- Age
- Gender
- Marital status
- Location (urban, suburban, rural)
- Life stage (single, married, divorced, empty-nester, retired, etc.)

2.3.2 How to segment the client?

Client segmentation requires a company to gather specific information – data – about clients and analyze it to identify patterns that can be used to create segments.

Some of that can be gathered from purchasing information – job title, geography, products purchased, for example. Some of it might be gleaned from how the client entered your system. An online marketer working from an opt-in email list might segment marketing messages according

to the opt-in offer that attracted the client, for example. Other information, however, including consumer demographics such as age and marital status, will need to be acquired in other ways.

Typical information-gathering methods include:

- Face-to-face or telephone interviews
- Surveys
- General research using published information about market categories
- Focus groups

Five Types of Client Segmentation & Examples of Implementation

Client segmentation is imperative when trying to send messages to a target market. Segmenting consumers enables marketing teams to stretch budgets and make the most of marketing dollars by

- Geographic
- Demographic B2C
- Demographic B2B
- Psychographic
- Behavioral

Client Segmentation: Geographic

Geographic segmentation is the practice of segmenting a campaign's target audience based on where they are located. Segments can be as broad as a country or a region, or as narrow as one street of homes in a town.

Geographic segmentation is useful for both large and small businesses alike. Large businesses with international markets may choose to offer products or services specifically for audiences in particular locations. For example, Home Depot may target US northeastern states when advertising

a sale on snow shovels. Presenting this ad to Floridians, for instance, would be irrelevant, unnecessary, and could even desensitize the audience to future advertisements.

Particularly for small businesses, geographic segmentation can be used to target specific clients without wasting excess advertising dollars on impressions that will not turn into leads. For example, a local pizzeria could present their ad to only people within the town they are located.

Client Segmentation: Demographic B2C

Demographic segmentation is segmenting the market based on certain characteristics of the audience. Characteristics often include, but are certainly not limited to: race, ethnicity, age, gender, religious, education, income, marital status, and occupation.

Also, fairly easy to implement, demographic segmentation can be useful in a variety of ways. Luxury brands may choose to market to a demographic consisting of people with household income > TK 200,000. Colleges may use messaging in their advertising that appeals to 17-22 year old.

Demographic segmentation is even more efficient when targeting multiple segments at once. Bridge ran an email marketing campaign where we targeted local (geographic) females (demographic: gender) aged 25-50 years old (demographic: age) with a household income of less than TK 100,000 (demographic: income) and an interest in furniture (behavioral). Targeting several segmentations in conjunction with one another led to over 440 sales for the local furniture retailer, driving more than TK 180,000 in revenue.

Combining various client segmentation criteria has the potential to reach a much-targeted niche market and drive sales while maximizing the value of every marketing dollar spent.

Client Segmentation: Demographic B2B

Demographic segmentation can also be used in B2B markets. In this case, common demographics include: company size, industry, role, time working for the company, and more.

Agencies may choose to segment the market by industry when searching for prospective clients. An advertising agency that specializes in auto advertising may segment the market by industry. They can further segment the market by role when opting to contact marketing managers and creative directors.

Again, using multiple demographic criteria while segmenting targets a very specific list of prospective clients.

Client Segmentation: Psychographic

Psychographic segmentation is far less concrete than both geographic and demographic client segmentation, as the characteristics used to segment are less "tangible" than the latter two. Psychographic segmentation divides the market on principles such as lifestyle, values, social class, and personality.

This type of client segmentation is significantly more difficult to implement than geographic or demographic segmentation. To properly segment the market based on psychographics, marketers must really take the time to get to know their current and past clients. This includes clearly defining the ideal buyer persona for the product or service and developing relationships with the client base.

A prime example of psychographic segmentation is targeting those who are budget conscious. These people value a good deal and tend to be smart shoppers. Target ads to this segment by appealing to their intrinsic budget-savvy personality.

Discount stores, like Wal-Mart, utilize this tactic nicely. Wal-Mart uses messaging like "Unbeatable Prices" and "Best Online Specials" because it will resonate with the audience they are trying to reach.

Client Segmentation: Behavioral

Behavioral segmentation is similar to psychographic segmentation on the basis that it is less concrete than demographic or geographic segmentation. Behavioral segmentation is the practice of dividing consumers into groups according to any of the following attributes: usage, loyalties, awareness, occasions, knowledge, liking, and purchase patterns.

Behavioral segmentation can be used in a variety of ways. When segmenting based on awareness, companies may opt to send their loyal clients one ad campaign, whereas target an additional campaign to prospective clients who have yet to build a relationship with the brand.

2.4 Solution by others

To solve the problem of losing client, the fundamental way is to increase the retention rate of the clients. SAS Institutes had found some approach to increase the profitability and lower the churn rates of the insurance product. SAS approaches the problem by delivering client software and service to gain a 360-degree view of the client, identify those clients likely to lapse or cancel policies and connect the right products to the right client segments through agents and direct channels. SAS also provides a complete framework of capabilities to help insurer to predict client lapse and implement successful marketing campaign to increase profit. SAS offered market-leading data management capabilities, analytical data model, advance analytics and proven campaign management to its client.

Chapter 03
System Development Methodology

3.1 Methodology

A system development methodology refers to the framework that is used to structure, plan, and control the process of developing an information system. It is a model to define the set of activities that leads to a system development. Choosing an effective and ideal development methodology is a very important step in order to ensure the project development done on time and reduce the risk. System development methodology is not necessarily suitable for use by all projects. Each of the available methodologies is best suited to specific kinds of projects, based on various technical, organizational, project and team considerations. This chapter describes and explains the research methodology used in this dissertation.

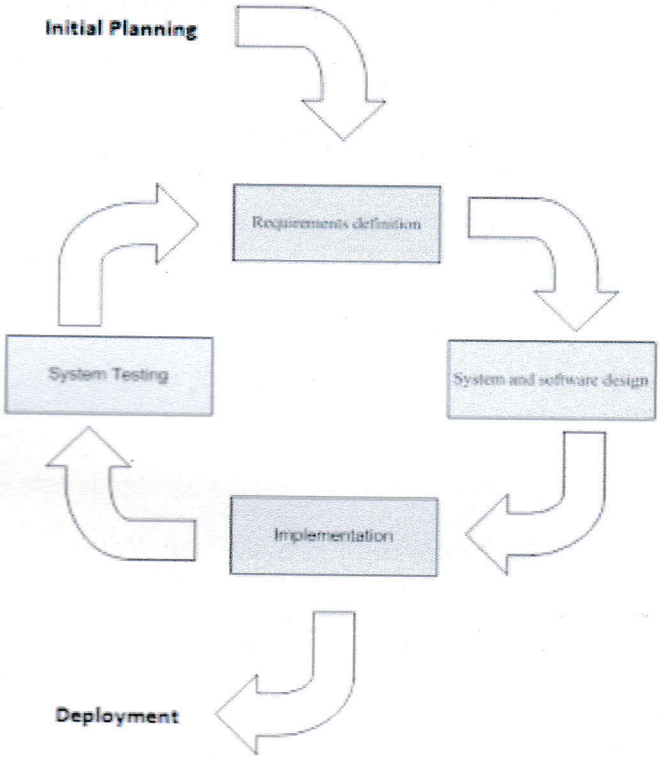


Figure – 3.1: Methodology of System Development

3.2 Tools

The main tools or skill used to develop this project is Hyper Text Markup Language. (HTML), cascading style sheets (CSS), JavaScript, and PHP: Hypertext Preprocessor (PHP) and the Structured Query Language (SQL). HTML is a markup language and a markup language is a set of markup tags. Sublime Text Editor

HMTL: The Hyper Text Markup Language (HTML) lets you serve web pages that can interact with server-side web pages Apps Script functions. It is particularly useful for building web page, web apps or adding custom user interfaces in Google Docs, Sheets, and Forms. You can even use it to generate the body of an email.

CSS: CSS stands for **Cascading Style Sheets.**

- ✓ CSS describes **how HTML elements are to be displayed on screen, paper, or in other media.**
- ✓ CSS **saves a lot of work.** It can control the layout of multiple web pages all at once
- ✓ External stylesheets are stored in **CSS files**

jQuery: jQuery is a lightweight, "write less, do more", JavaScript library. The purpose of jQuery is to make it much easier to use JavaScript on your website. jQuery takes a lot of common tasks that require many lines of JavaScript code to accomplish, and wraps them into methods that you can call with a single line of code. jQuery also simplifies a lot of the complicated things from JavaScript, like AJAX calls and DOM manipulation. Many of the biggest companies on the Web use jQuery, such as: Google, Microsoft, IBM, Netflix etc.

PHP: PHP is an acronym for "PHP: Hypertext Preprocessor. It is widely-used, open source scripting language. PHP scripts are executed on the server that's why it is very easy to connect on server. PHP was supporting many databases like MySQL, Informix, Oracle, Sybase, Generic ODBC and others. PHP can be run on different platform like Windows and Linux, and it is also compatible with almost all servers used today like Apache and IIS. PHP is free to download and use.

SQL: SQL is a standard language for accessing and manipulating databases. SQL stands for Structured Query Language. It's lets you access and manipulate databases. SQL became a standard of the American National Standards Institute (ANSI) in 1986, and of the International Organization for Standardization (ISO) in 1987.

How to work SQL:

- ✓ SQL can execute queries against a database.
- ✓ Retrieve data from a database.
- ✓ Insert, Update and Delete records in a database.
- ✓ Create new databases.
- ✓ Create new tables in a database.
- ✓ SQL can set permissions on tables, procedures, and views

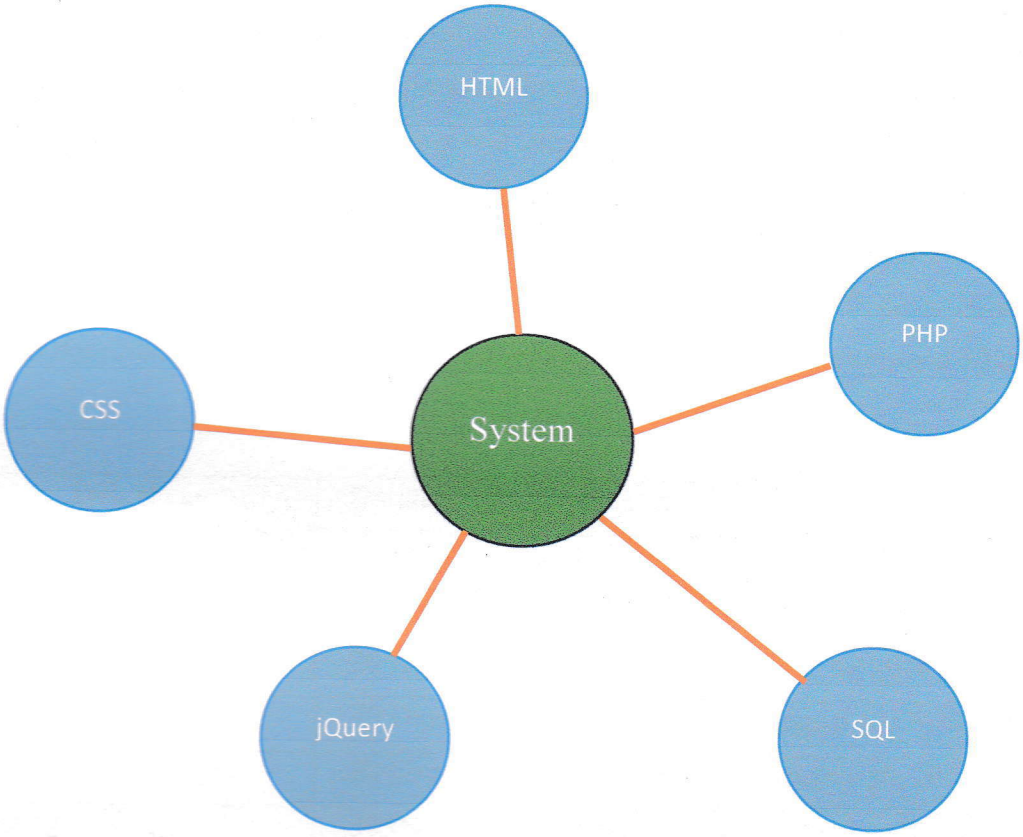


Figure – 3.2: Development tools

3.3 Implementation Issues and Challenges

In the development of this CMS, there are 2 issues will be faced. One of the issues is the formula of the client segmentation and analysis. It was difficult to ensure that the formula of ratios is correct or wrong. Beside this, it is also difficult to figure which type of analysis was helpful to the marketer.

The second issue is volume of testing data. A small amount of sample was difficult to display the actual answer of question. For example, the correctness of 10 samples is very weak, but if a sample of 10000 samples, the actual rate of the condition was more correctly.

3.4 Timeline

This project was estimated to be complete in a period of around 8 months. The following Gantt chart will show the timeline for each phases of the project. There are seven phases in this project and take different duration to complete. The initial planning will take around 30 days to complete, planning will take 10 days. After planning, the prototyping and design will carry out concurrently which prototyping is estimated to complete in 20 days and design is estimated to complete in 40 days. After design phase will be the development phase which take the longest days estimated as 80 days. When the development was done, the testing and debugging will carry out, each of it will use around 30 days.

ID	Task Name	Duration	Start Date	End Date
1	Initial Planning	30 Days	May 1, 2018	May 30, 2108
2	Planning	10 Days	June 1, 2018	June 10, 2018
3	Prototyping	20 Days	June 11, 2018	June 30, 2018
4	Design	40 Days	July 1, 2018	August 10, 2018
5	Development	80 Days	August 11, 2018	October 30, 2018
6	Testing	30 Days	November 1, 2018	November 30,2018
7	Debug & Enhancement	30 Days	December 1, 2018	December 30, 2018

Table-3.4_1: Gantt chart of System Development

3.5 Requirement Specification

3.5.1 Security Features

User Management: The user system should including add, modify and delete user. The system admin should be able to manage the account of internal user such ask staff. The clients will register the account in the system. Each client will use a special access code and their IC to bind their user account with their profile.

User Authentication: Users need to provide their login ID and password every time they access the system.

Group Creation and Management: Each user shall be define and belong to one or more group. Example of user groups is admin, manager, client and others. The admin shall able to create and maintain the group setting.

Pages permission: Different pages shall grant to different user group. For example, admin user is only grant to control the user and system.

Change Password: Each of the users should allow updating their user's account password if they feel their password is not secure anymore.

3.5.2 Analysis

Client Filtering: The system should allow the user to filter a list of client's base on clients' information like demographic information. After filtering, the system should display a simple summary of the list of clients. For example, is should show what is the total number of clients filtered, what is the ratio of client from male to female.

Client profile: It shall include a page to view the client's profile. In the profile, it should show all the client demographic data, client's analysis, purchase history, purchase behavior and others.

Product Analysis: The system should allow the user to select a product and analyze it. The analysis should show which type of client is buying the product, which outlet is the hot selling and others.

Chapter 04
System and Interface Design

4.1 System & interface Design

4.1.1 System Design

This CMS is using PHP language as main develop language, it is a web application, therefore it will store in 1 folder and host by the web server application with Apache. The folder is name as CMS and inside the CMS folder containing different files. The different folder is containing the file with different function. The folder system is same as below:

CMS: Root folder name is software:

Inner of this folder we have use whole package of laravel framework. Now let's explore the detailed description of inner folders.

1. App folder
2. Bootstrap folder
3. Config folder
4. Database folder
5. Public folder
6. Resources folders
7. Routes folder
8. Storage folder
9. Tests folder
10. Vendor folder
11. .env file
12. .env.example
13. .gitattributes
14. .gitignore
15. Artisan
16. composer.json
17. composer.lock
18. package.json
19. phpunit.xml
20. readme.md
21. server.php
22. webpack.mix.js

- **App Folder:** This app folder contain all security system file we just write some important file name.
  - Controller
  - Middleware
  - Kernel.php

- **Bootstrap Folder:** Bootstrap folder contain all Bootstrap Framework all file. We just write an important file name.
  - App.php

- **Config Folder:** This folder is very important for whole system because our main database connection is depend on this folder's file. This connection interrelated with .env file.
  - App.php
  - Auth.php
  - Hashing.php
  - Logging.php
  - Mail.php
  - Session.php
  - View.php

- **Database Folder:** When we are connected our database we need to run a command from our command window like "php artisan migrate" this command was help us for our authentication system. After this command we can see our migrated files in this location database/migrations/. The file should like this "2014_10_12_000000_create_users_table.php"

- **Public Folder:** Here we put our all custom file like our backend and frontend files and folder
  - CSS: This folder is containing the CSS file for the CRM.
  - JS: This folder is used to store the entire javascript file to be use.
  - Images: This folder is containing the image we are used in the CRM.
  - Fonts: All fonts files are contain here
  - Style.css: This is our main css file

- **Resources Folder:** This is our view folder where we can make our all view files for Frontend and Backend. This is used to store the template file of the system like header.blade. php, footer.blade.php, content.blade.php etc.

- **Routes Folder:** It is a very important folder also because all file are depend on this folder's file, and this file name is "web.php" and it create our get and post url direction with our view file form methods.

- **Storage Folder:** It contain some important folder also like
  - Cache
  - Sessions
  - Testing
  - Views

- **Tests Folder**

- **Vendor Folder:** When we need add a new plugin of feature that contain here we just need to maintain some of procedure and run a command from command window. For example:
  - Sweet alert
  - Woo commerce etc.

This CMS is using nested include generating the dynamic content web pages. The system is using the index.php to include header, content, and footer. Beside this, the system also using jqueryajax to display some data generated by the PHP inside the Widget folder.

4.1.2 Interface Design

The output of the index.php is in HTML format. Each of the pages generated will having the same layout but different content. The system interface's layout is shown as below.

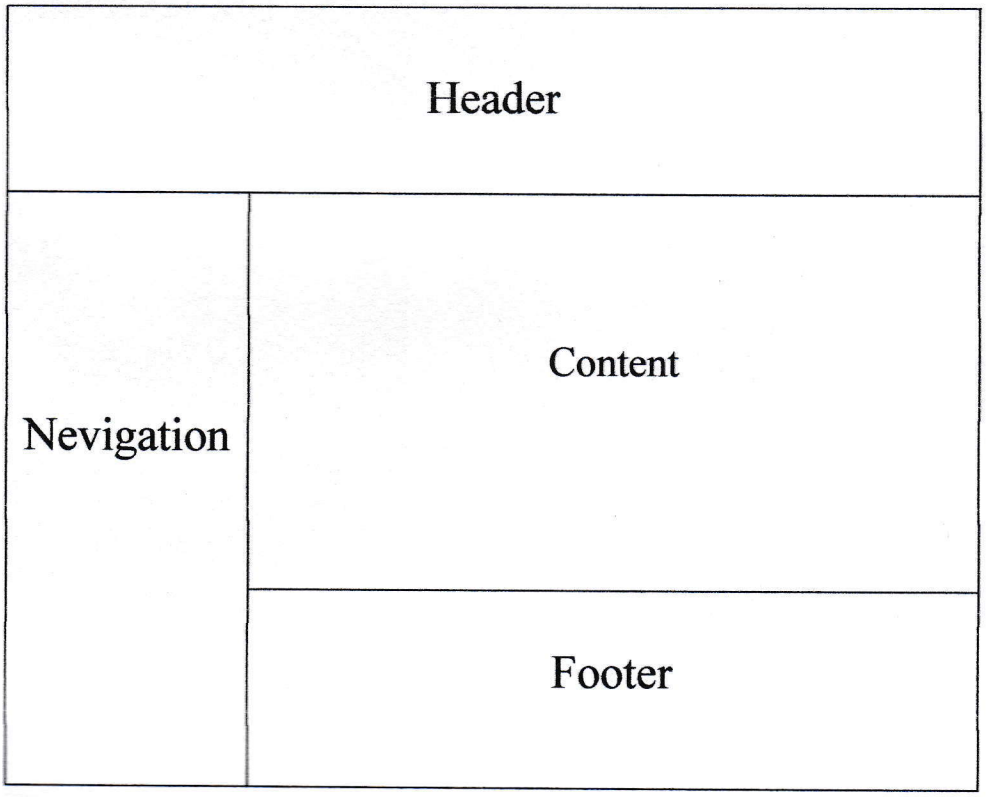


Figure – 4.1.2_1: Interface Design

Header Design:



Figure – 4.1.2_2: Header Design

Navigation Design: Each user role will have different menu option.

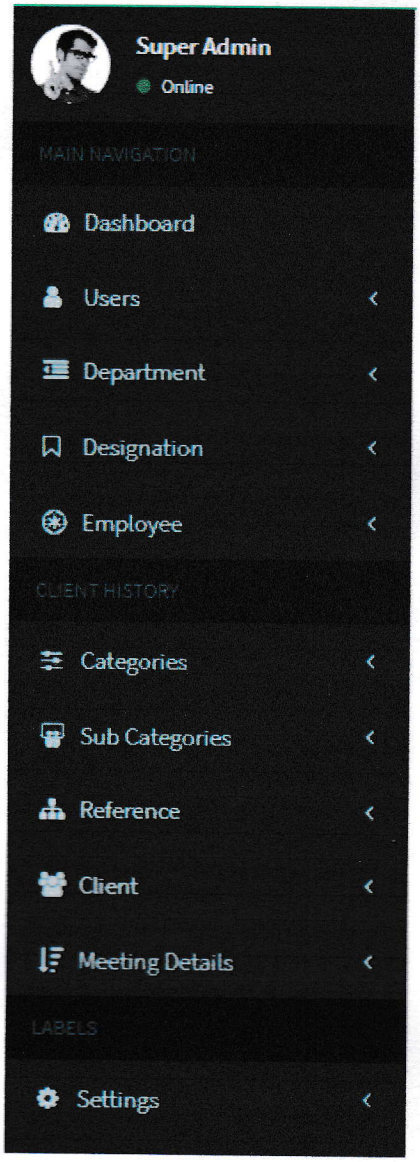


Figure – 4.1.2_3: Navigation Design

Footer Design:



Figure – 4.1.2_4: Footer Design

Dashboard Design:



Figure – 4.1.2_5: Dashboard Design

4.1.3 Functional Page Design

User Add page: The page is containing user registration, add user role and user status.

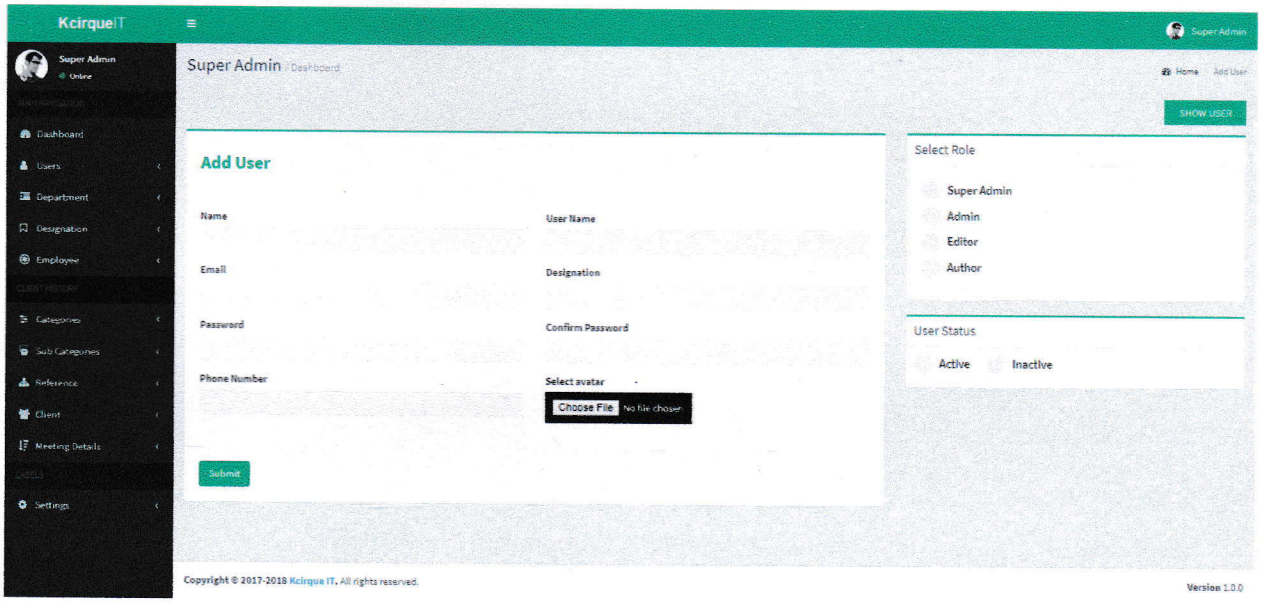


Figure – 4.1.3_1: User Add Design

User Manage page: In this page, we can update or delete user information.

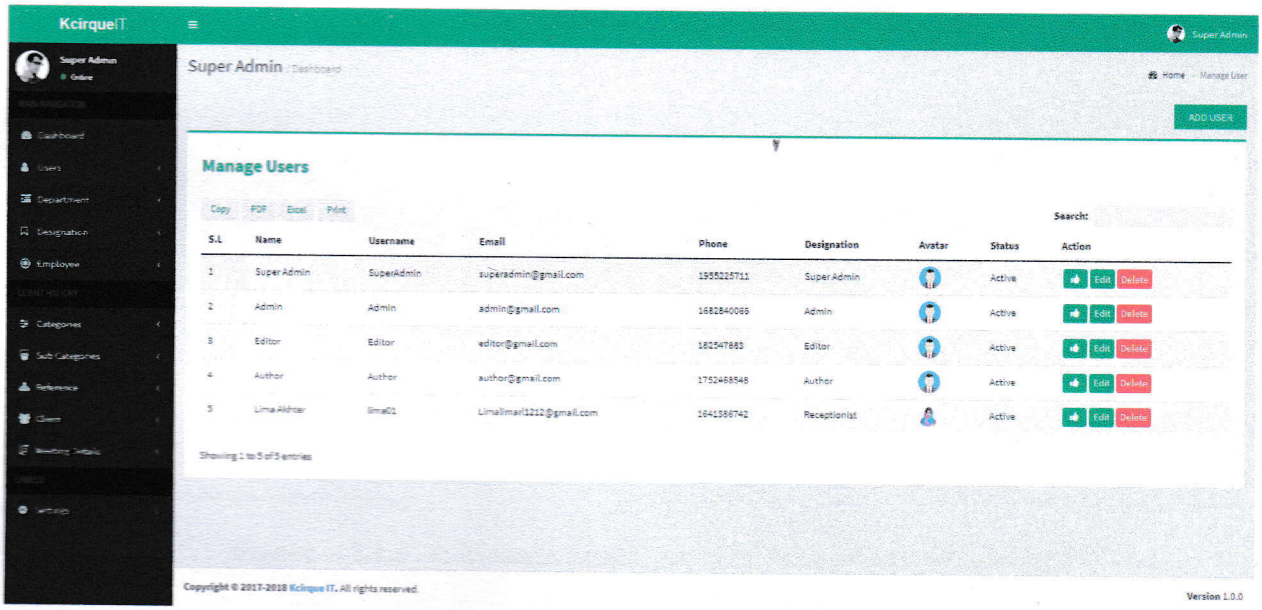


Figure – 4.1.3_2: User Manage Design

Add Employer Info: This page is the containing an employer registration.

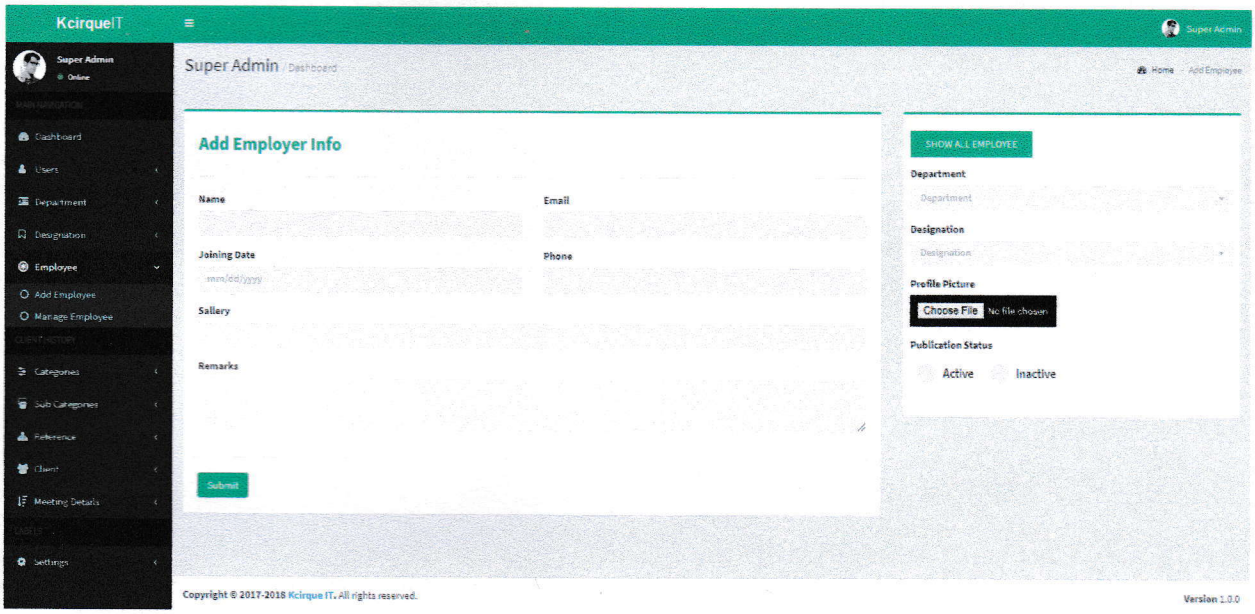


Figure – 4.1.3_3: Add Employer Design

Manage Employer Info: An employer all information can be edit or delete in this page.

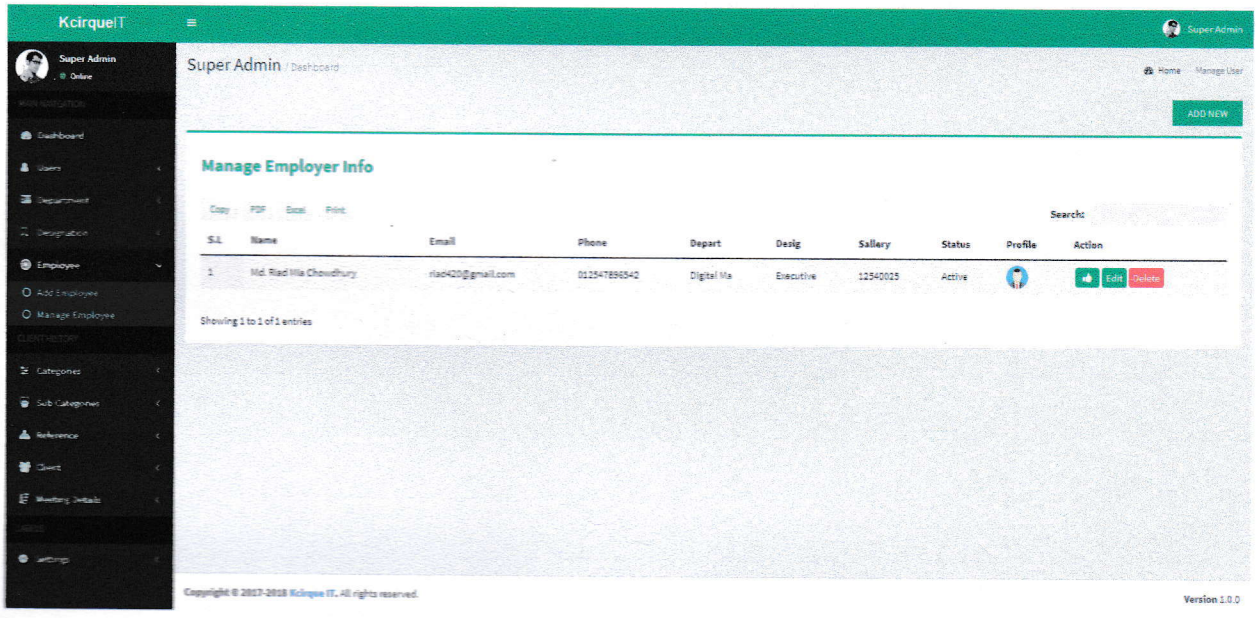


Figure – 4.1.3_4: Manage Employer Information Design

Add Employer Department: This page adds employer department and status.

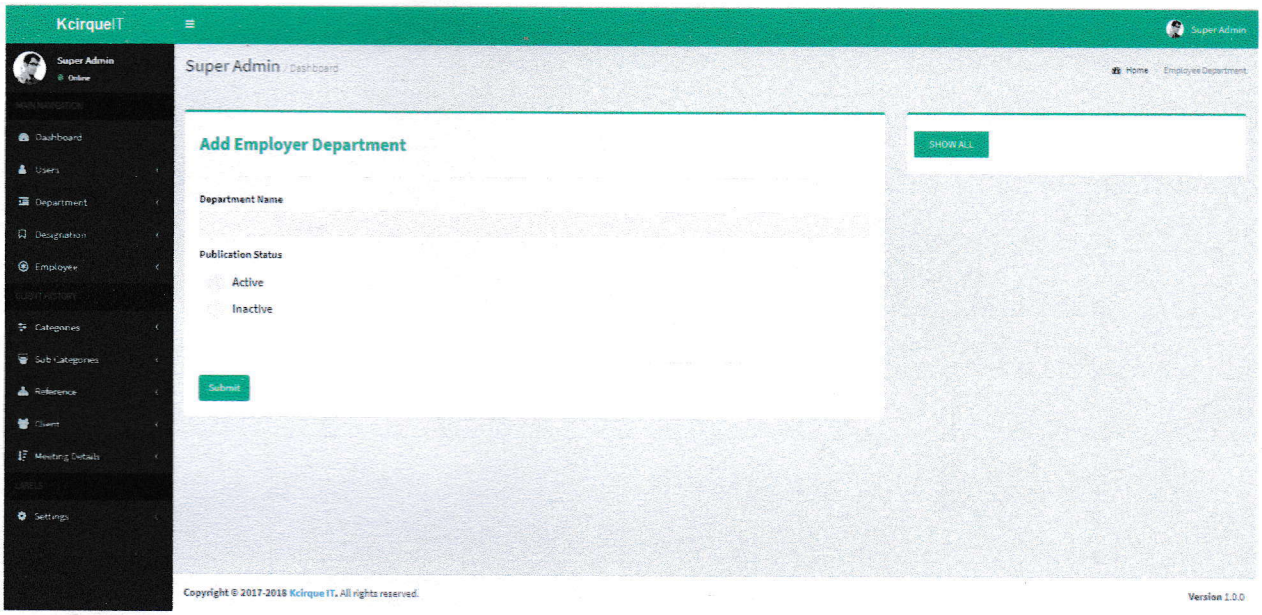


Figure – 4.1.3_5: Add Employer Department Design

Manage Employer Department: Employer's department can edit in this page.

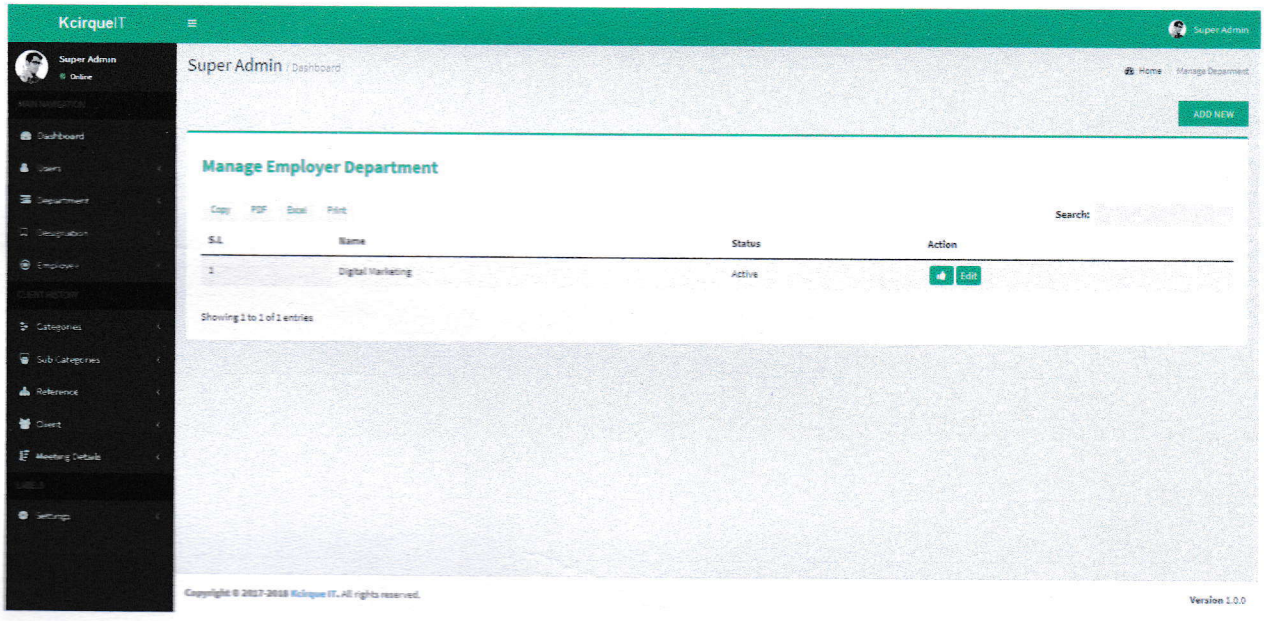


Figure – 4.1.3_6: Manage Employer Department Design

Add Employer Designation: This page is containing add employer designation with status.

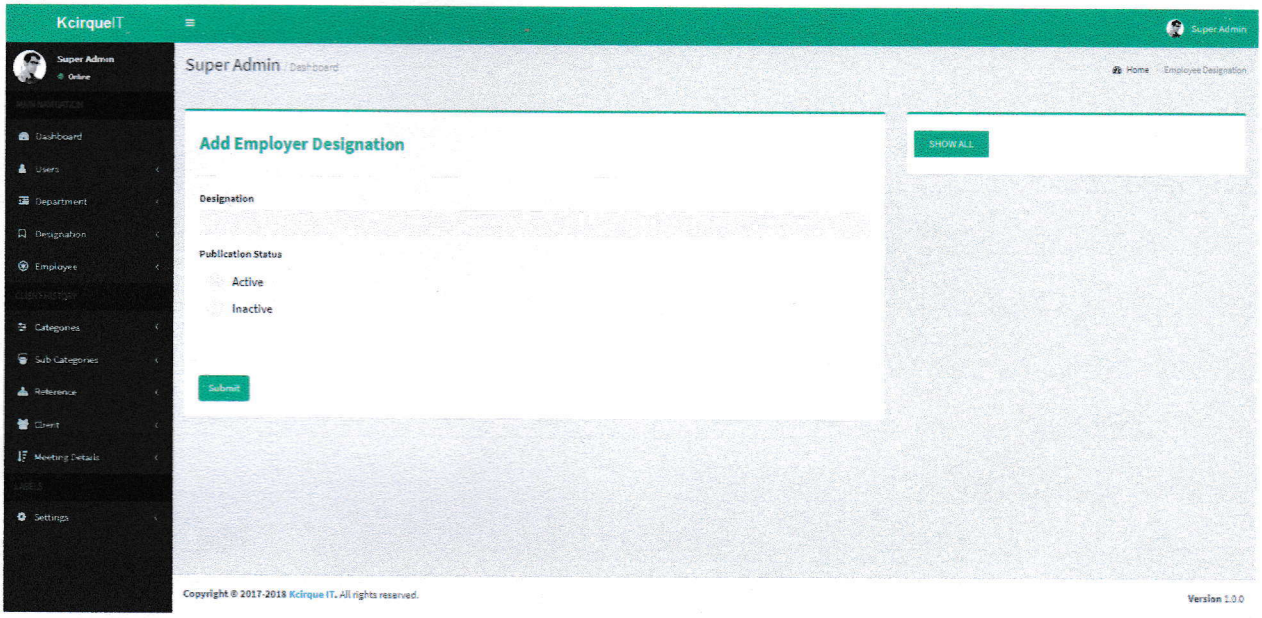


Figure – 4.1.3_7: Add Employer Designation Design

Manage Employer Designation: In this page we can edit employer designation.

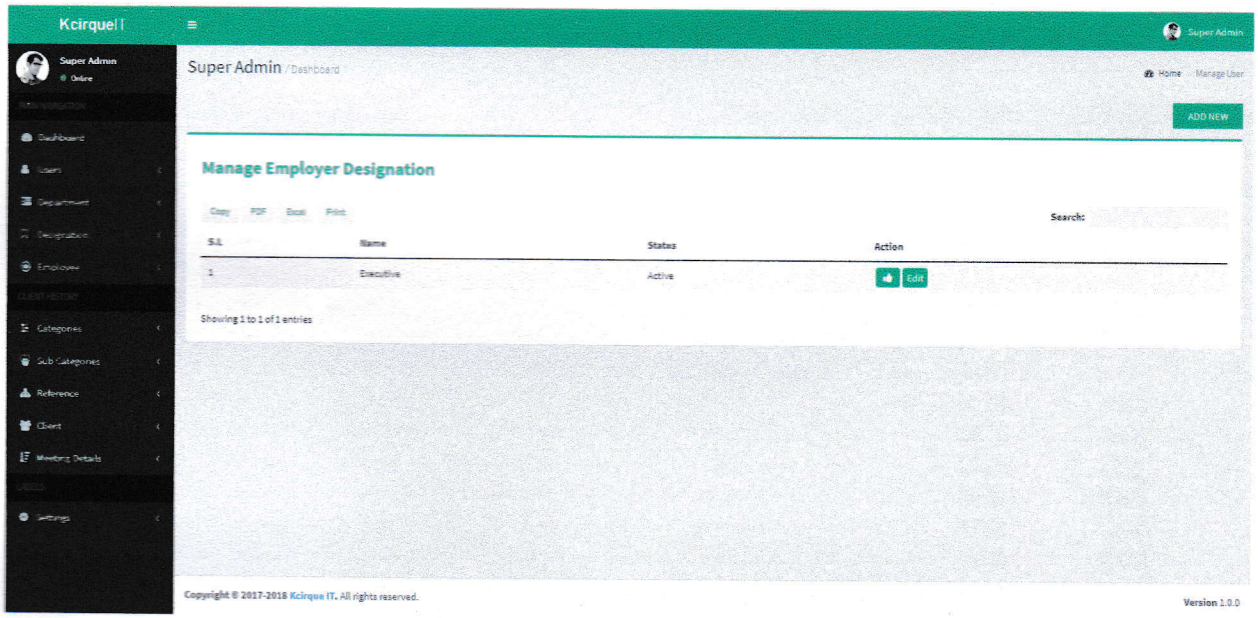


Figure – 4.1.3_8: Manage Employer Designation Design

Add Client:

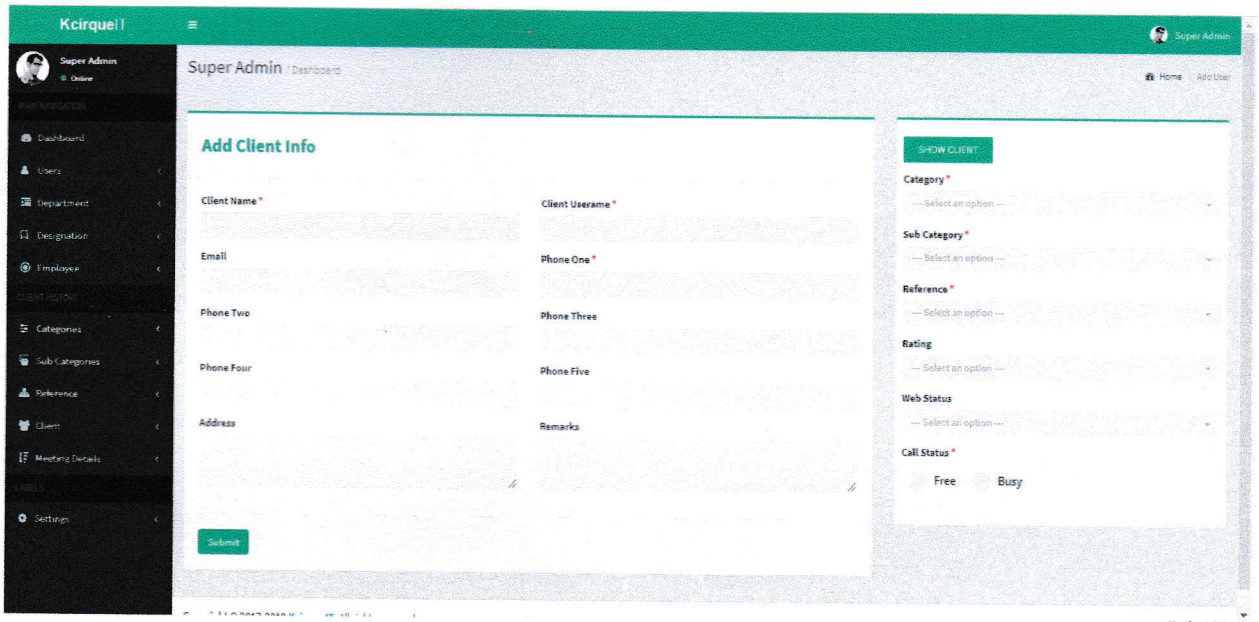


Figure – 4.1.3_9: Add Client Design

Manage Client:

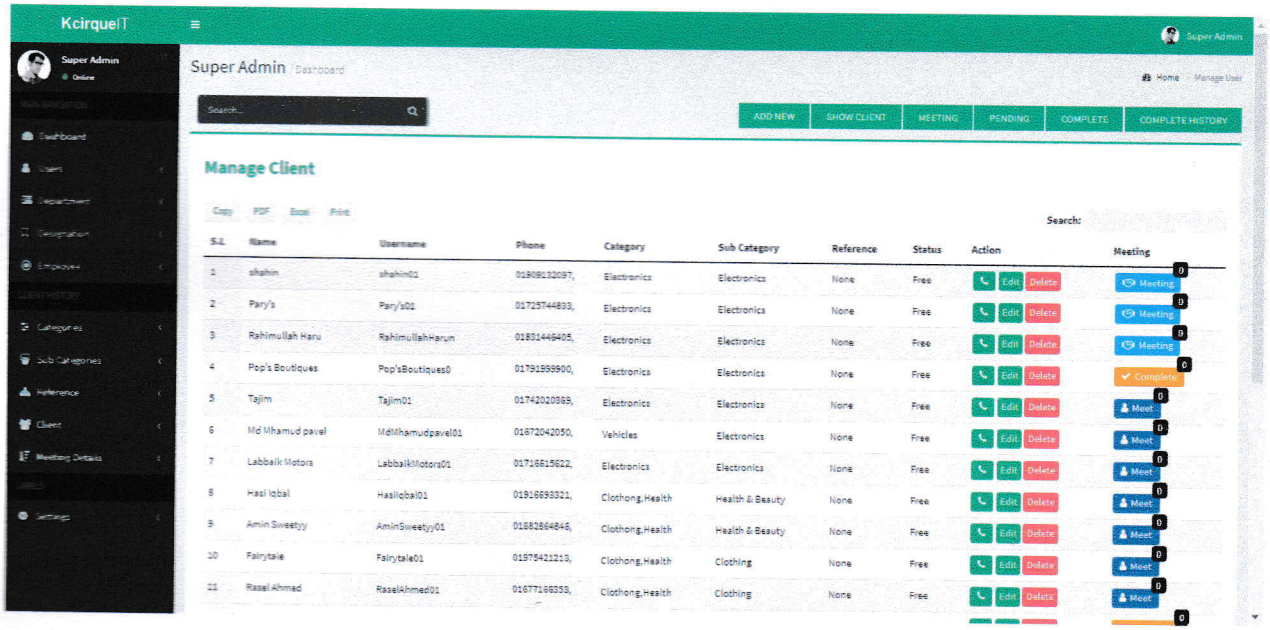


Figure – 4.1.3_10: Manage Client Design

Add Category:

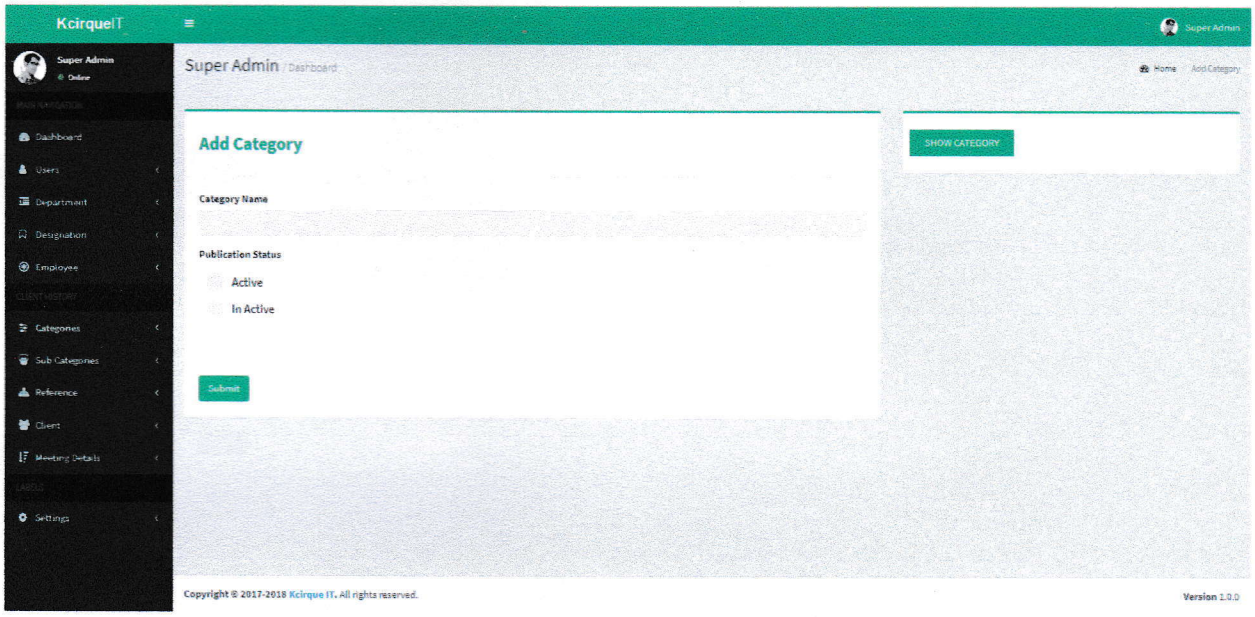


Figure – 4.1.3_11: Add Category Design

Manage Category:

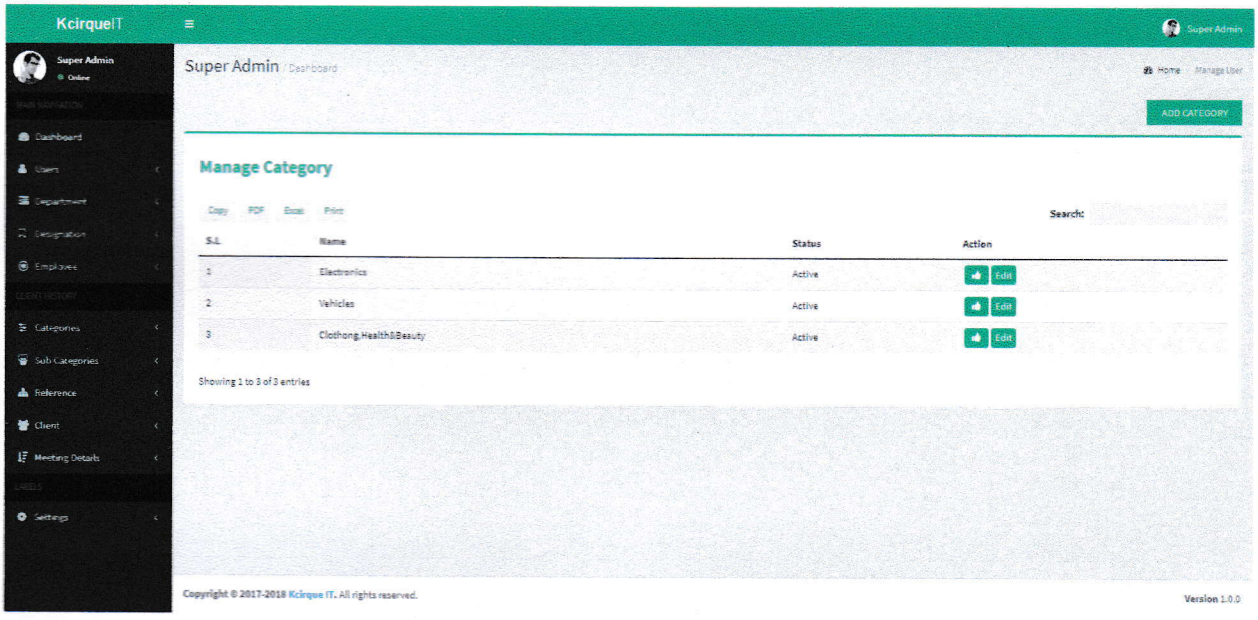


Figure – 4.1.3_12: Manage Category Design

Add Sub-Category:

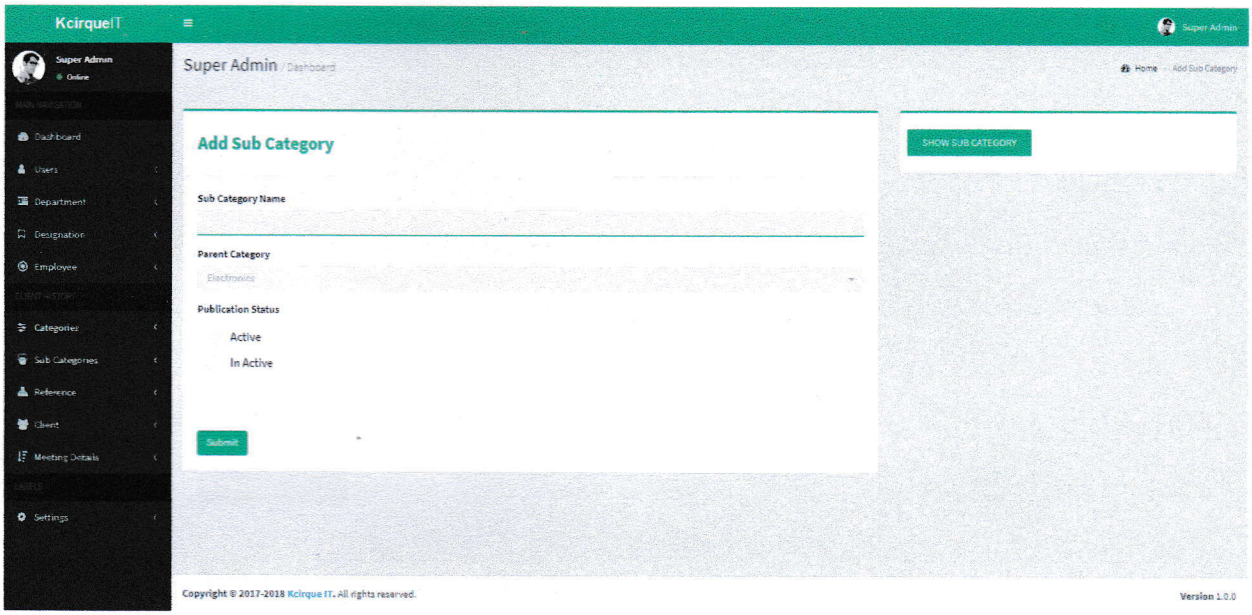


Figure – 4.1.3_13: Add Sub-Category Design

Manage Sub-Category:

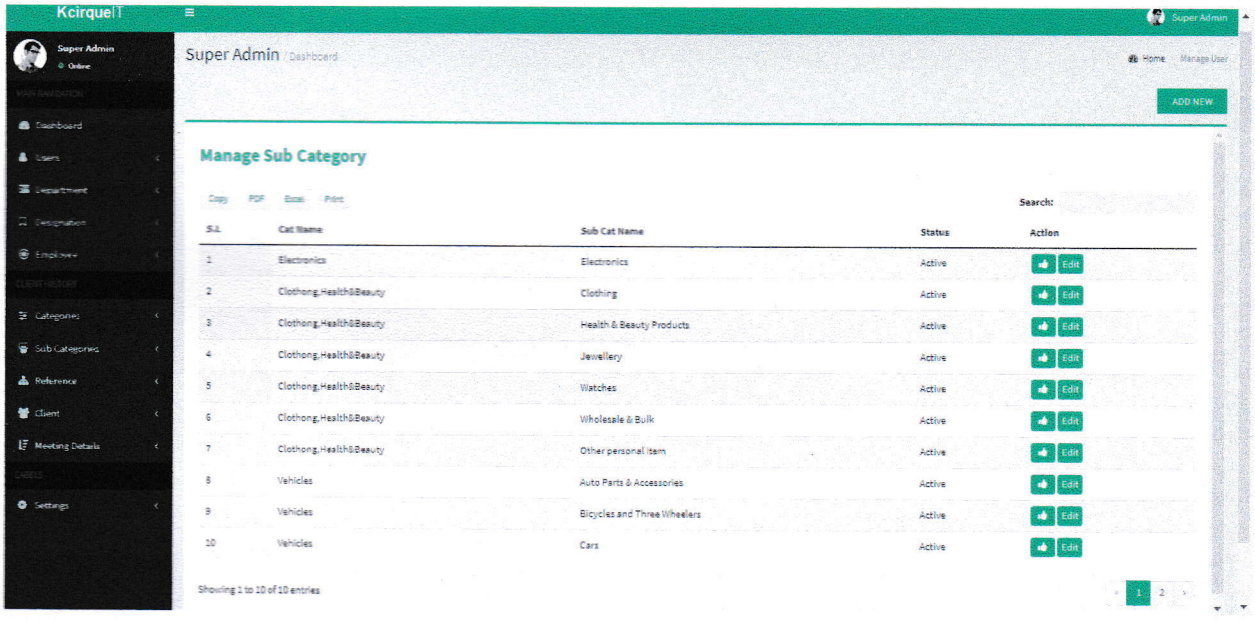


Figure – 4.1.3_14: Manage Sub-Category Design

Add Reference:

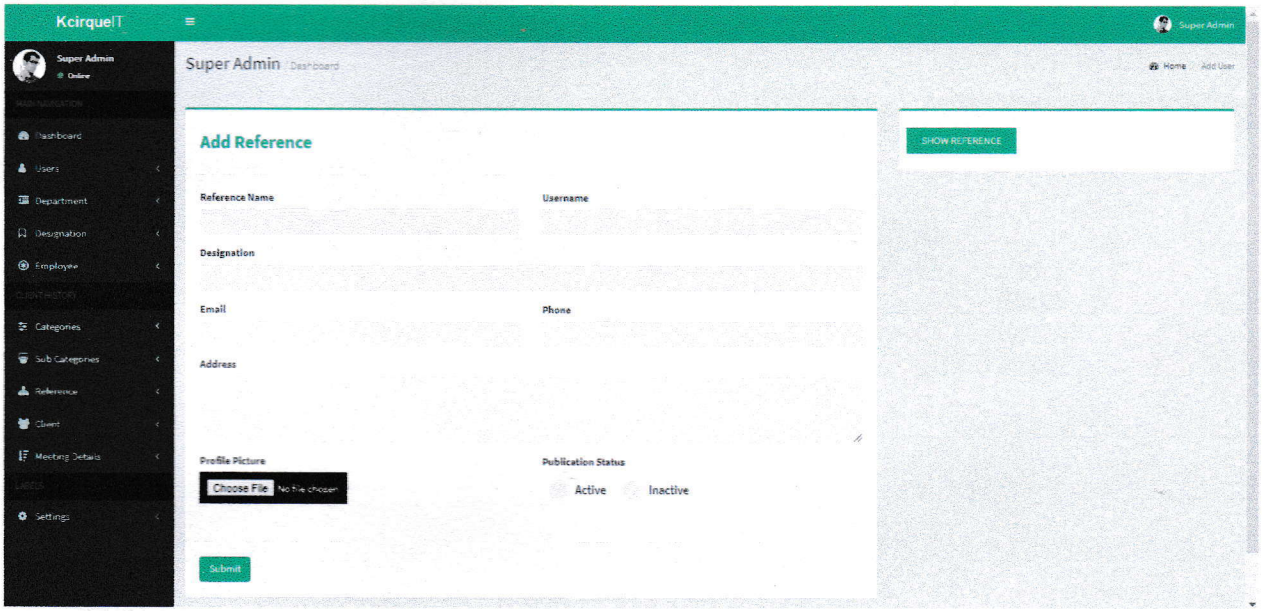


Figure – 4.1.3_15: Add Reference Design

Manage Reference:

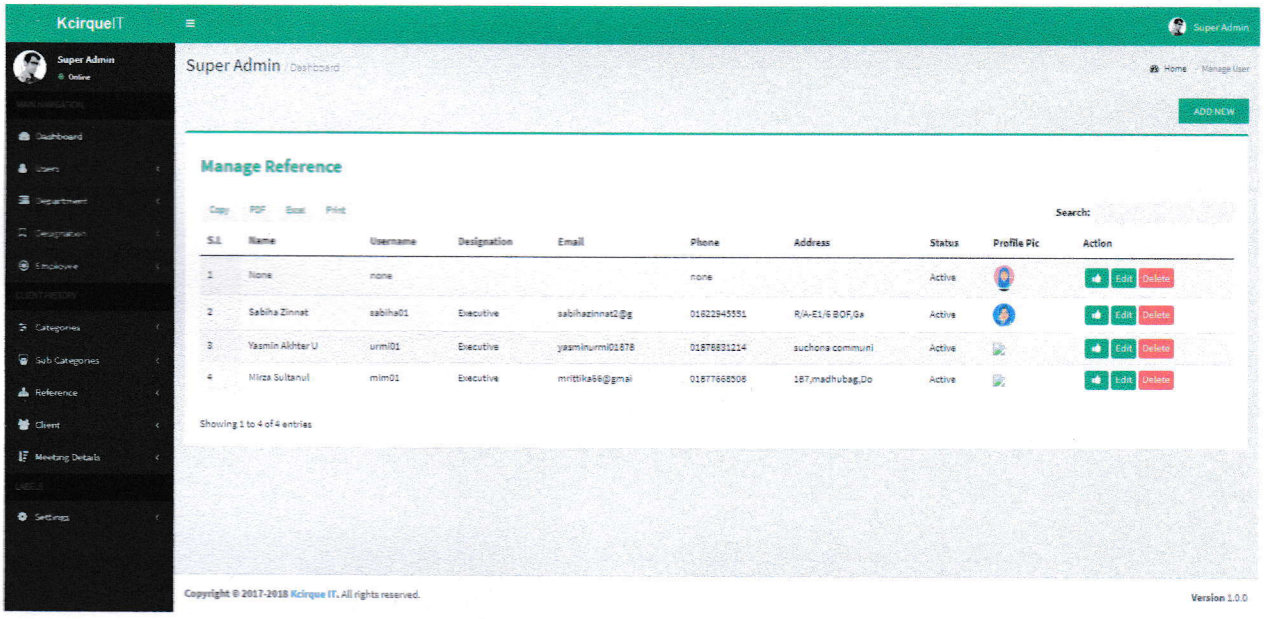


Figure – 4.1.3_16: Manage Reference Design

Manage Client Meting:

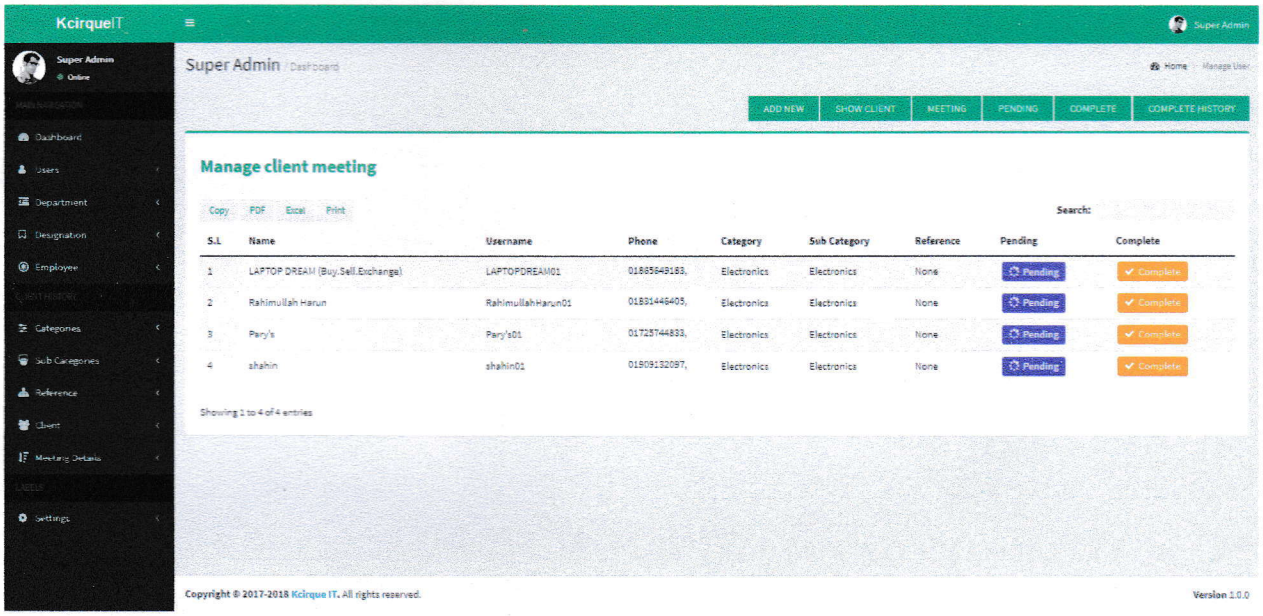


Figure – 4.1.3_17: Manage Client Meting Design

Mange Client Pending Meting:

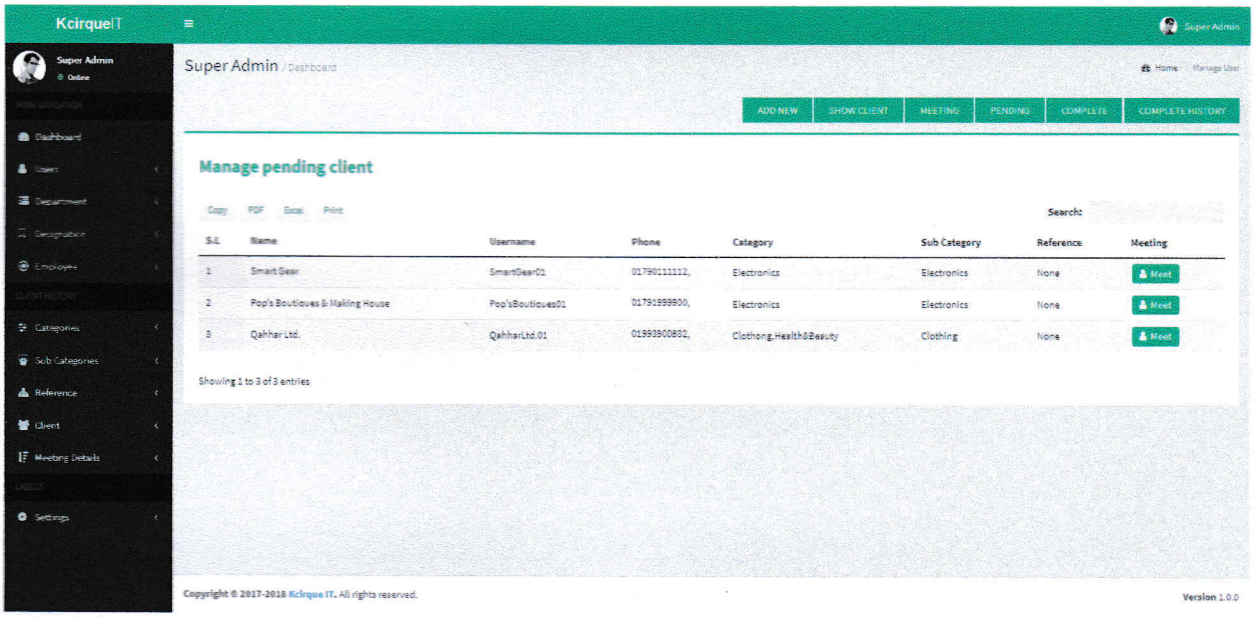


Figure – 4.1.3_18: Manage Client Pending Meting Design

Manage Complete Meet:

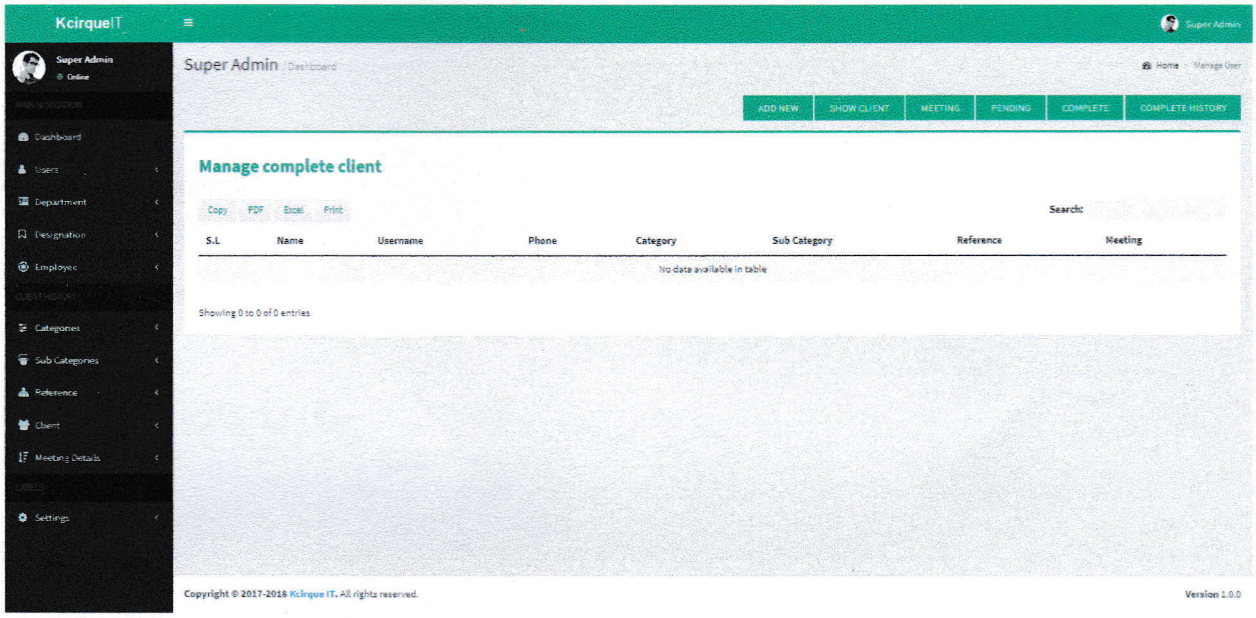


Figure – 4.1.3_19: Manage Complete Meet Design

Manage Total Meet History:

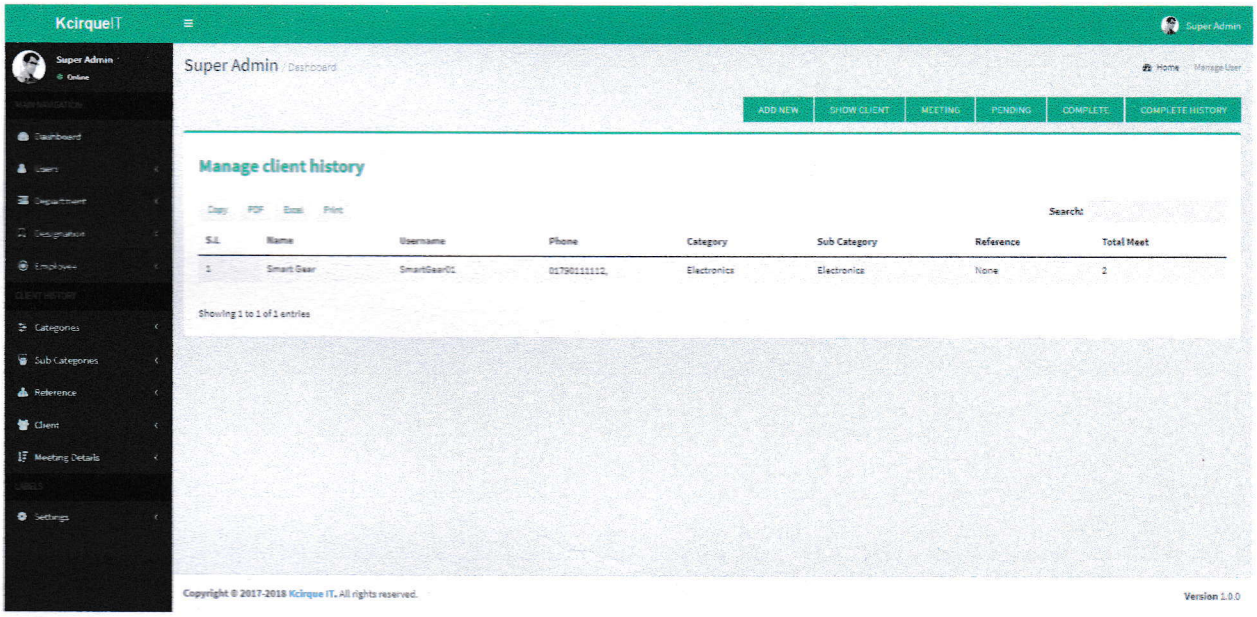


Figure – 4.1.3_20: Manage Total Meet History Design

User Password Change: A form let user to update their account's password.

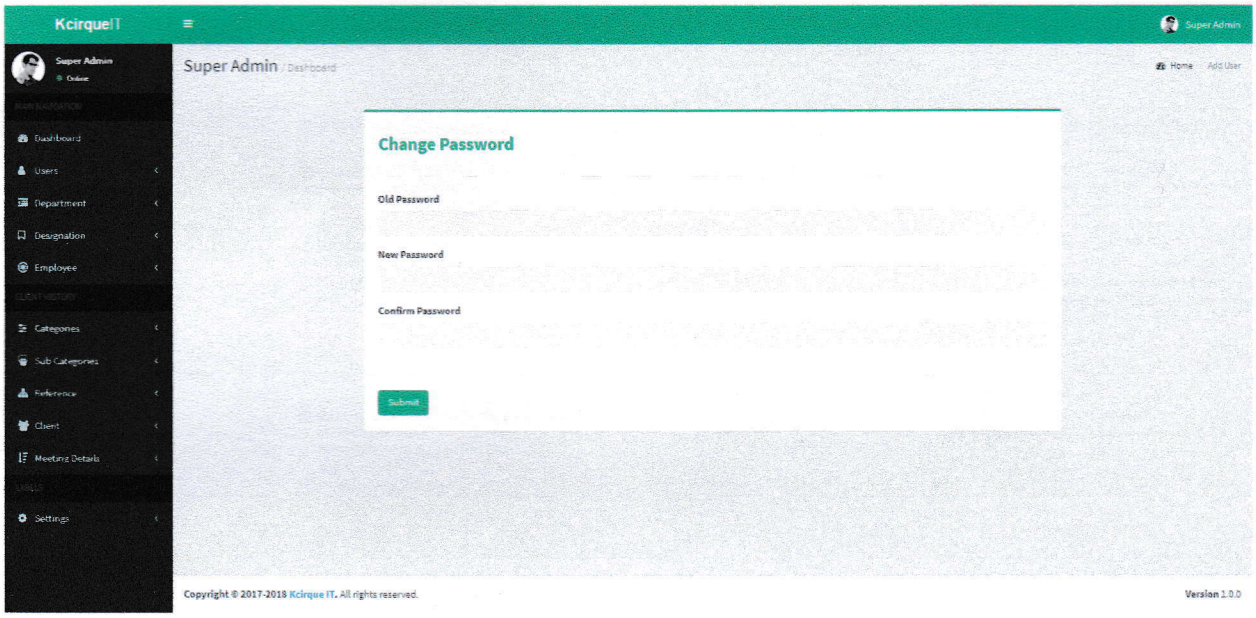


Figure – 4.1.3_21: User Password Change Design

4.1.4 Entity Relationship Diagram

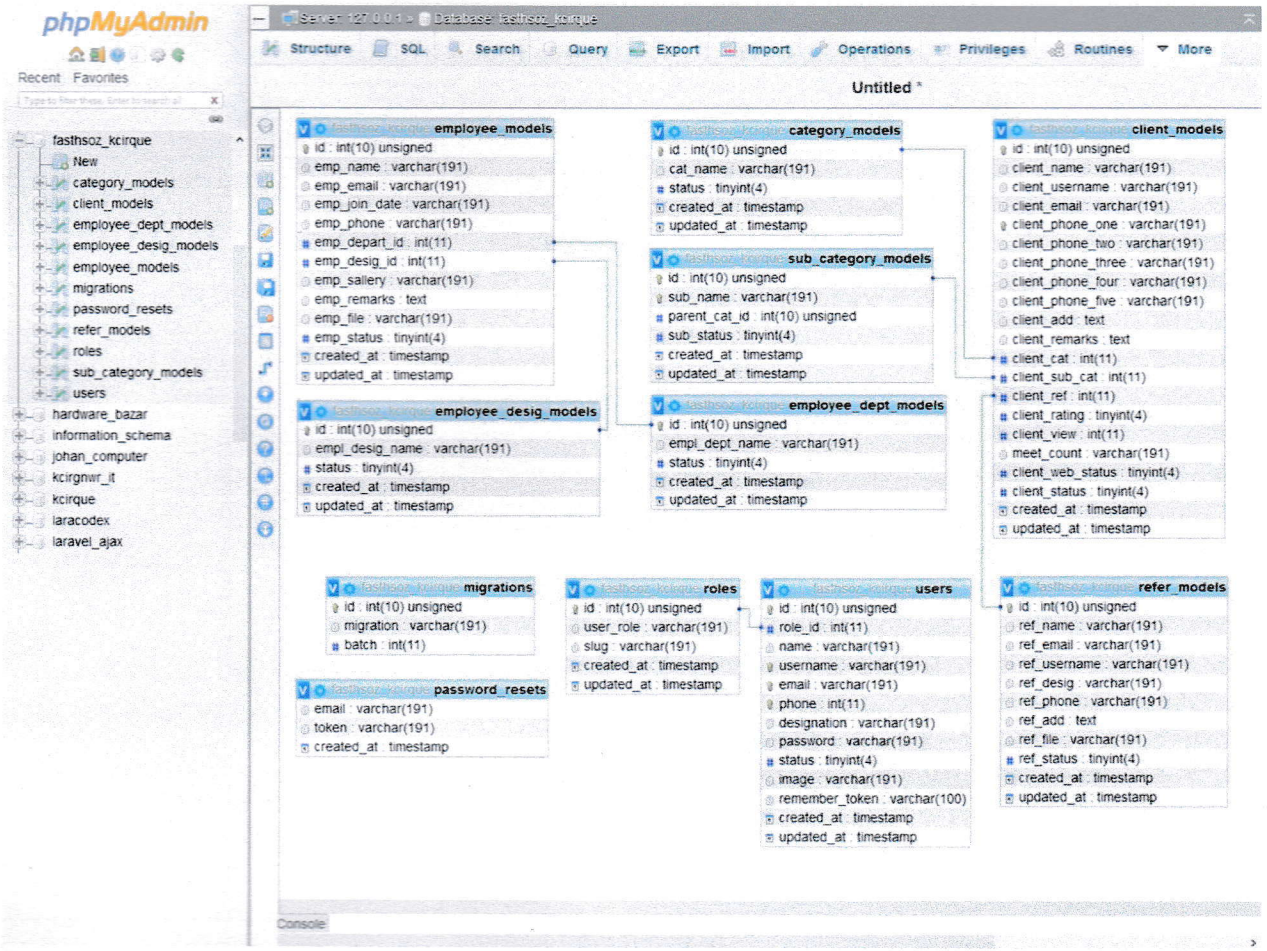


Figure – 4.1.4_1: Entity Relationship Design

4.2 Data Dictionary

2014_10_12_000000_create_users_table: Store all user information

Attributes	Data Type	Description	Nulls
id	Increments	Primary Key	No
role_id	Integer	Foreign key	No
name	String	User's name	No
username	String	User's Username	unique
email	Integer	User email	unique
phone	String	User phone number	unique
designation	String	User designation	No
password	String	User password	No
status	tinyInteger	User's publication status	No
image	String	User avatar	default
	rememberToken	Security token generator	No
	Timestamps	Current time function	No

Table-4.2_1: User table/scheema: users

2018_05_14_054700_create_roles_table:

Attributes	Data Type	Description	Nulls
id	Increments	Primary Key	No
user_role	String	User's role	No
slug	String	url slug	No
	Timestamps	Current time function	No

Table-4.2_2: Role table/Scheema: roles

2018_05_23_083228_create_category_models_table:

Attributes	Data Type	Description	Nulls
id	Increments	Primary Key	No
cat_name	String	Category name	No
status	tinyInteger	User's publication status	No
	Timestamps	Current time function	No

Table-4.2_3: Category table/scheema: category_models

2018_05_28_045342_create_sub_category_models_table:

Attributes	Data Type	Description	Nulls
id	increments	Primary Key	No
sub_name	String	Sub Category name	unique
parent_cat_id	integer	Foreign Key for category table	unsigned
sub_status	tinyInteger	User's publication status	No
	timestamps	Current time function	No

Table-4.2_4: Sub Category table/scheema: sub_category_models

2018_05_24_054218_create_refer_models_table:

Attributes	Data Type	Description	Nulls
id	increments	Primary Key	No
ref_name	string	Reference's name	No
ref_email	integer	Reference's email	nullable
ref_username	string	Reference's Username	nullable
ref_desig	string	Reference's designation	nullable
ref_phone	string	Reference's phone number	No
ref_add	text	Reference's Address field	nullable
ref_file	string	Reference's avatar	default
ref_status	tinyInteger	Reference's publication status	No
	timestamps	Current time function	No

Table-4.2_5: Refference table/scheema: refer_models

2018_05_27_064539_create_client_models_table:

Attributes	Data Type	Description	Nulls
id	increments	Primary Key	No
client_name	string	Client's name	No
client_username	string	Client's email	nullable
client_email	string	Client's Username	nullable
client_phone_one	string	Client's phone number one	nullable
client_phone_two	string	Client's phone number tow	nullable
client_phone_three	string	Client's phone number three	nullable
client_phone_four	string	Client's phone number four	nullable
client_phone_five	string	Client's phone number five	nullable
client_add	text	Client's address	nullable
client_remarks	text	Client's remarks	nullable
client_cat	integer	Reference's Category id	default
client_sub_cat	integer	Reference's Sub Category id	No
client_ref	integer	Client Reference id	No
client_rating	tinyInteger	Client review	nullable
client_view	integer	Client view	default
meet_count	string	How many time meeting with client	default
client_web_status	tinyInteger	Web status positive or negative	nullable
client_status	tinyInteger	Client's publication status	
	timestamps	Current time function	No

Table-4.2_6: Client table/scheema: client_models

2018_06_11_043251_create_employee_desig_models_table:

Attributes	Data Type	Description	Nulls
id	increments	Primary Key	No
empl_desig_name	String	Employee designation name	No
status	tinyInteger	Employee's publication status	No
	timestamps	Current time function	No

Table-4.2_7: Employee designation table/scheema: employee_desig_models

2018_06_11_050100_create_employee_dept_models_table:

Attributes	Data Type	Description	Nulls
id	increments	Primary Key	No
empl_dept_name	String	Employee department name	No
status	tinyInteger	Employee's publication status	No
	timestamps	Current time function	No

Table-4.2_8: Employee department table/scheema: employee_dept_models

2018_06_30_082513_create_employee_models_table:

Attributes	Data Type	Description	Nulls
id	increments	Primary Key	No
emp_name	string	Employee's name	No
emp_email	string	Employee's email	nullable
emp_join_date	string	Employee's joining date	nullable
emp_phone	string	Employee's phone number	nullable
emp_depart_id	integer	Employee's department (id foreign key)	nullable
emp_desig_id	integer	Employee's designation (id foreign key)	nullable
emp_sallery	string	Employee's sallery	default
emp_remarks	text	Employee's remarks	No
emp_file	string	Employee's avatar	No
emp_status	tinyInteger	Client's publication status	
	timestamps	Current time function	No

Table-4.2_8: Employee table/scheema: employee_models

2014_10_12_100000_create_password_resets_table:

Attributes	Data Type	Description	Nulls
email	string	User's email for check authentication	No
token	String	User's security code verification	No
	timestamps	Current time function	No

Table-4.2_9: Password reset table/scheema: password_resets

Chapter 05
System Analysis

5.1 Error Avoidance

At this stage care is to be taken to ensure that input data remains accurate form the stage at which it is recorded up to the stage in which the data is accepted by the system. This can be achieved only by means of careful control each time the data is handled.

5.2 Error Detection

Even though every effort is making to avoid the occurrence of errors, still a small proportion of errors is always likely to occur, these types of errors can be discovered by using validations to check the input data.

5.3 Data Validation

Procedures are designed to detect errors in data at a lower level of detail. Data validations have been included in the system in almost every area where there is a possibility for the user to commit errors. The system will not accept invalid data. Whenever an invalid data is keyed in, the system immediately prompts the user and the user has to again key in the data and the system will accept the data only if the data is correct. Validations have been included where necessary.

The system is designed to be a user friendly one. In other words, the system has been designed to communicate effectively with the user. The system has been designed with popup menus.

5.4 Project Analysis

Finally, we success of our project. It's a web base application software. We can decide our final view of this project.

1. When we go to http://software.laracodex.com/ , the software saw a bellow figure. Hare, we login this software a valid user Email & password.

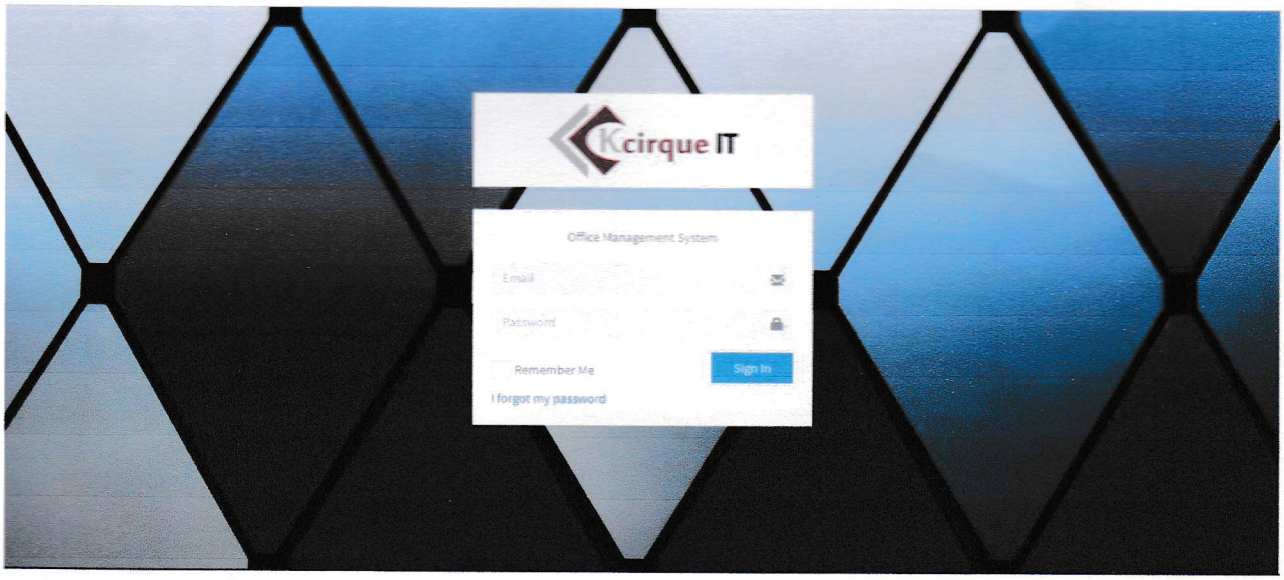


Figure – 5.4_1: Output overview of software

2. After login a valid email & password we can get a bellow view

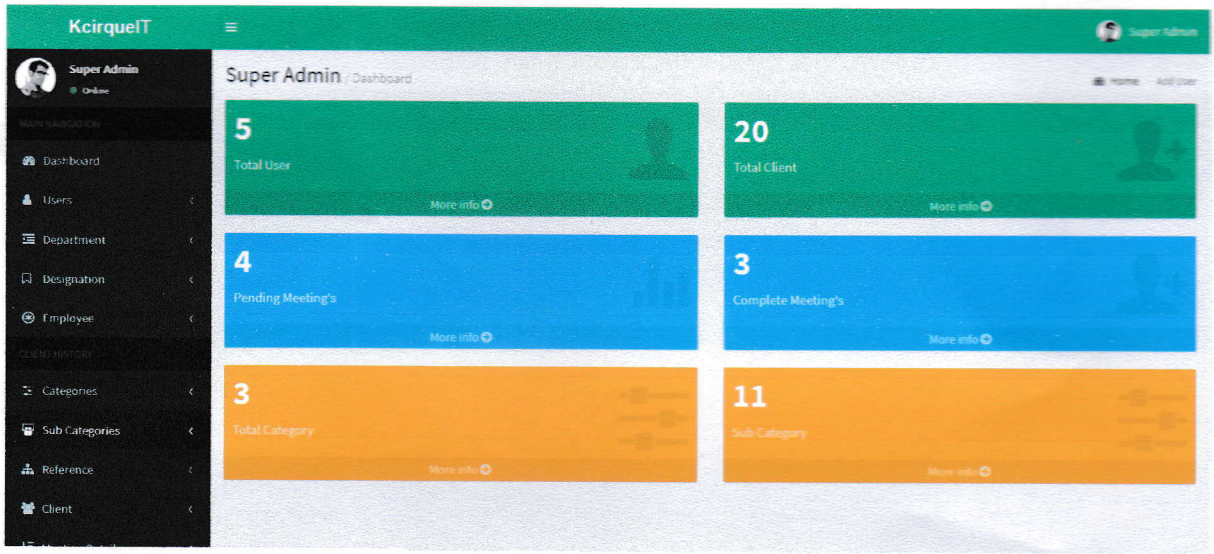


Figure – 5.4_2: Output overview of dashboard

3. All client show in client segment. Overview given bellow

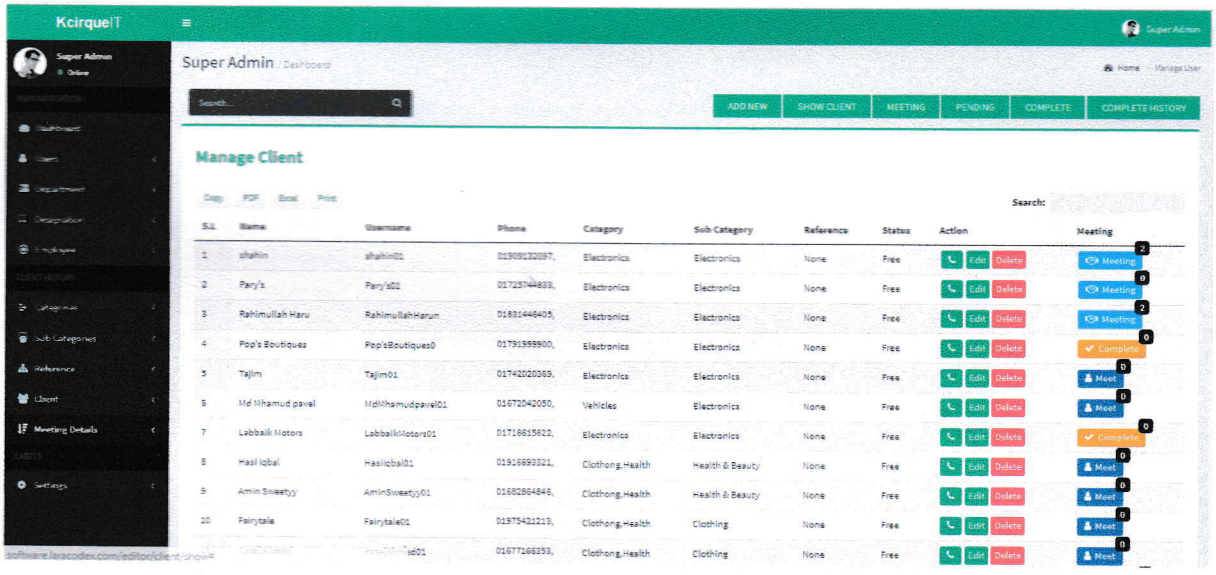


Figure – 5.4_3: All Clients Database

4. We select some client to contact with them via phone call, after a phone call we get number clients who are agree to meet with us. Then we go to meting section. Output given bellow

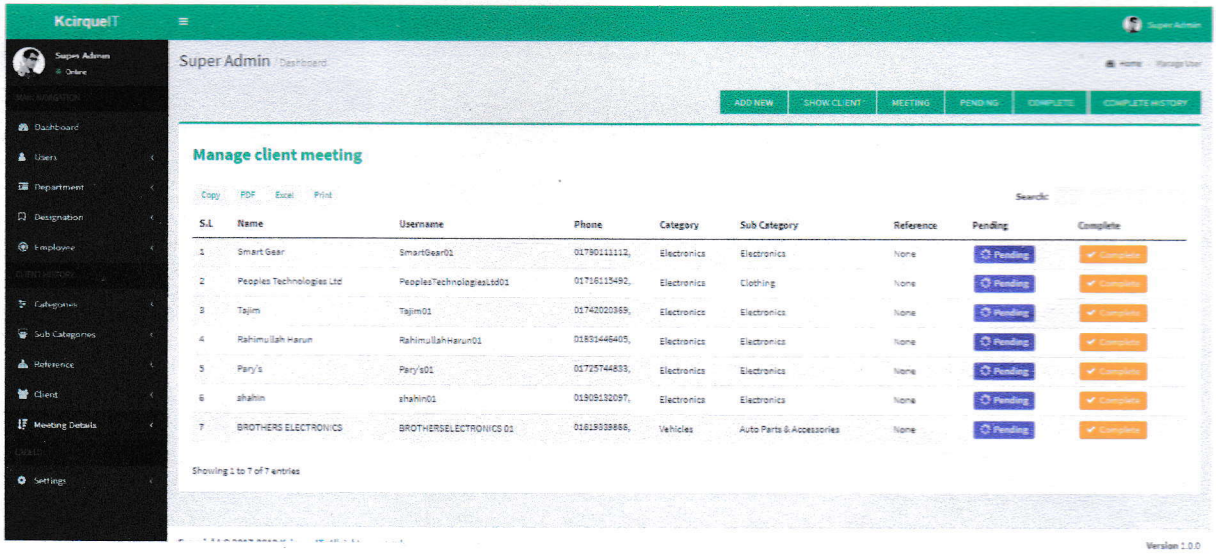


Figure – 5.4_4: Meting List

5. In this section, if meet is pending, we go to pending section. Overview given bellow

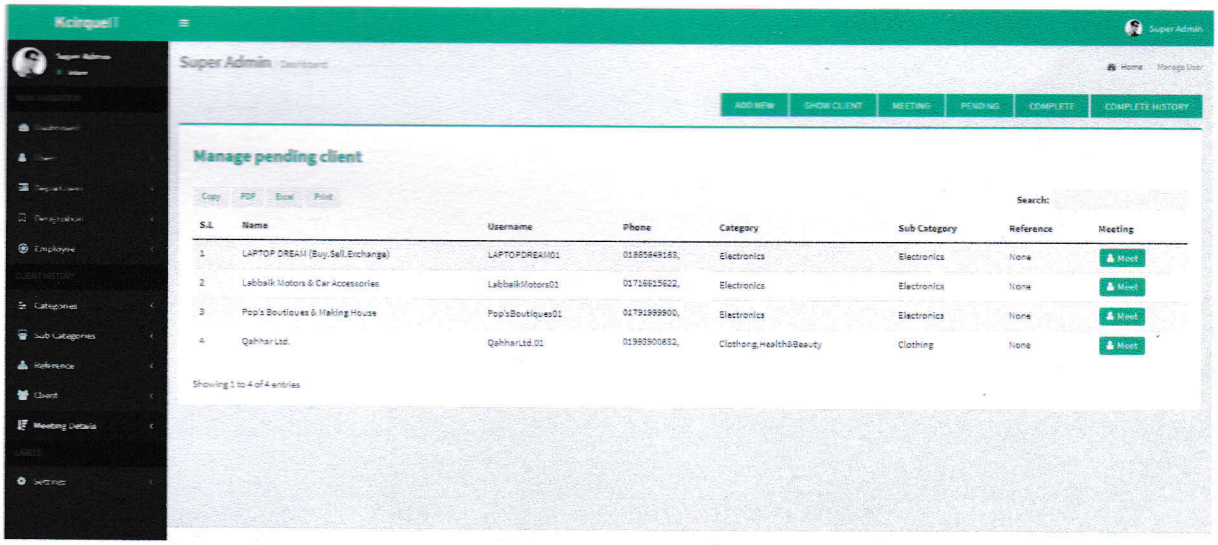


Figure – 5.4_5: Pending Meting List

6. If the meet is complete, we go to complete section.

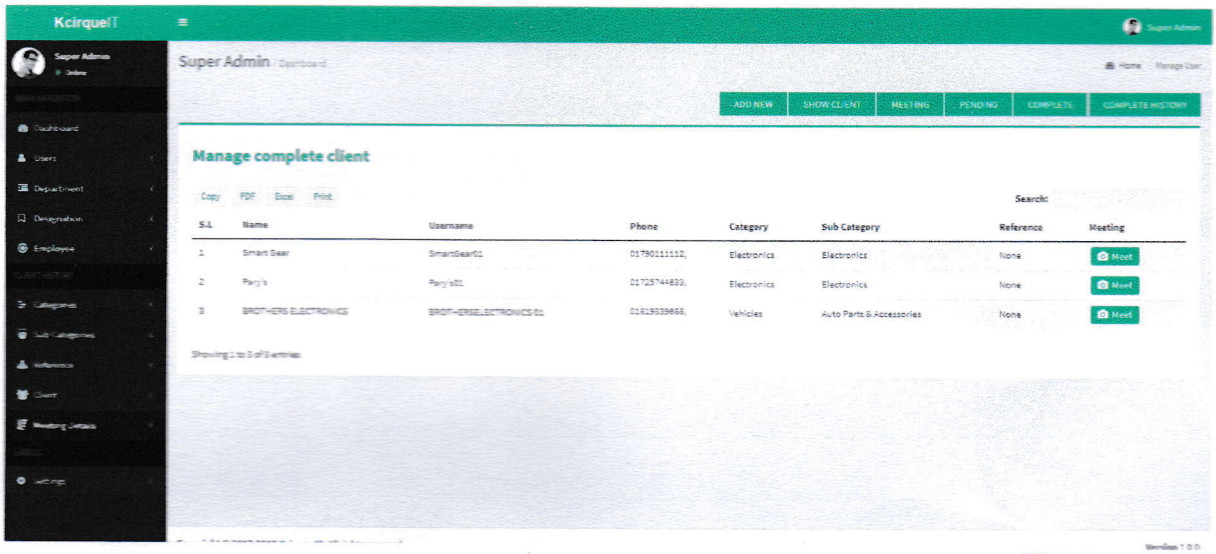


Figure – 5.4_6: Complete Meting List

7. In Complete history segmentation we can see the total meting history.

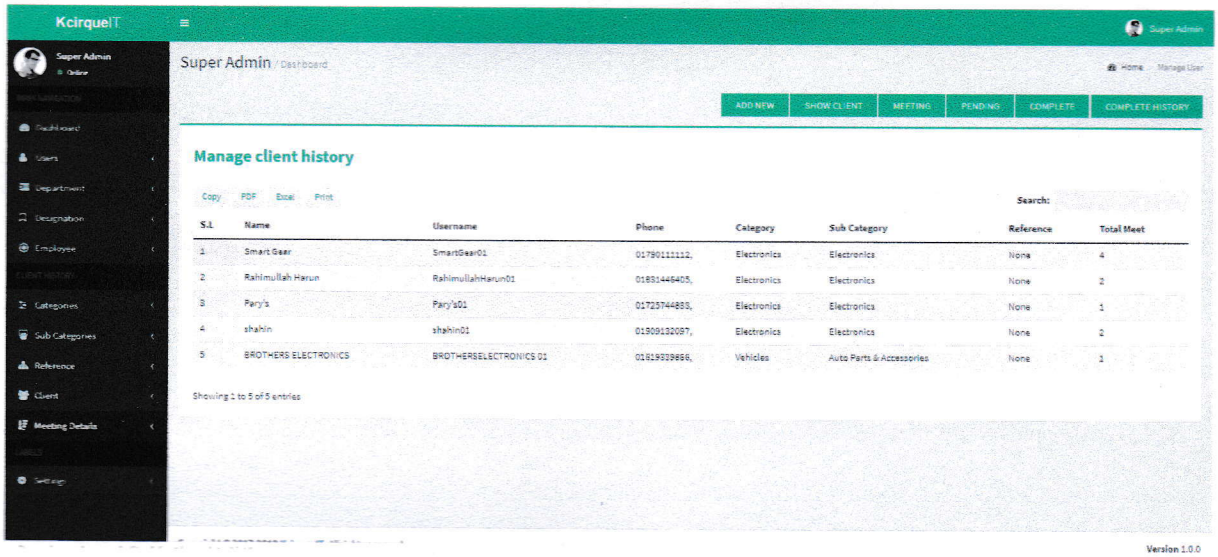


Figure – 5.4_7: Complete Meting History

Chapter 06
Conclusion and Future Scope

6.1 Project review

Firstly, this is a great CMS, just a few niggles here and there but we are savvy with html, css, php and jquery so know how to get around things. In discussion, client leaving is the problem faced by all of the organization. This problem is no method to solve completely because every client was unique and changing every day. This problem was serious because it will directly affect the profit of the company; the method to decrease the number of clients leaving is increasing client loyalty. The proposed solution to decrease the client retention in this project is applying the client management system (CMS) to the organization. This CMS system will help the company to have a more clearly and critically view to the client, then increase the current client's loyalty and stay the clients before they leave.

This project was developed a CMS at the end. This CMS system was achieving the objectives of the project. The objectives were done by different modules of the system. The modules included client segmentation and filtering, system page management, client information and documentation record CMS history.

6.2 Future Enhancement

There are some enhancements available for this project. The first enhancement is the module of the system. This CMS is not complete and still have a lot of space to expand. The module can be added included Sales Force Automation (SFA), Service Automation, Marketing Automation and others. While the system added these modules, this CMS will be more complete and more powerful for the organizations.

Beside the modules, this system can be improved to be more merge able with another Enterprise Resource Planning (ERP) System. The system can add module to customize the connection with other system's database, and make it adaptable to most of the database design of another ERP system. So, this CMS could become more standalone system but adaptable to other systems at the same time.

6.3 Conclusion

The various studies carried out in the achievement of the listed Objectives in this research, show clearly that a CMS finds it much easier to register in the client's mind if the companies increase and maintain their dialogues with their most involved clients and keep them informed and updated with the CMS system. CMS system awareness is related to the strength of the CMS in the memory, as reflected by clients 'ability to identify various CMS elements under different conditions.

It is an established truth that relates to the likelihood that a CMS will come to a client's mind when the client has a high level of awareness and familiarity and the ease with which the client does so, given different types of cues.

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