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## Online Building Materials Inventory System

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**Abstract** The inventory management system is a web-based application designed to keep detailed records of each new or returned product as it enters or leaves a warehouse or point of sale. This assists in the effective management of materials and equipment and thus improve warehouse management, cash flow and saves time. The system incorporates some modules such as: the stock module, the order module and the finance modules. These modules in turn have submodules within them. The system was designed as a client/server web-based system, which was implemented using the two technologies: The Front-end (Graphical User Interface – GUI) was implemented using JavaScript, HTML, Bootstrap and CSS. The Back-end, that is the Database was implemented using MySQL server while the middleware was implemented using PHP and Sublime text for IDE. An evaluation of the system determined that it achieved the set objectives. The developed system is an efficient, usable and reliable inventory management system.

**Keywords** JavaScript, CSS, Bootstrap, PHP, MySQL

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### Introduction

Inventory management deals primarily with determining the size and placement of semi-finished and finished items or goods within a facility or within multiple locations of a supply chain network. It is also concerned with the importance of forecasting the required inventory, availability of physical space and costs in carrying those inventories to maintain the planned course of production against the random fluctuations, or shortage of materials or goods. Inventory constitutes one of the important items of current assets, which permits smooth operation of production and sale process of a firm. A component of supply chain management, inventory management supervises the flow of goods from manufacturers to warehouses and from these facilities to point of sale.

Materials Management is related to planning, procuring, storing and providing the appropriate material of right quality, right quantity at the right place and time so as to co-ordinate and schedule the construction activity in an integrative way for an industrial undertaking. A key function of material management is to keep a detailed record of each new or returned product as it enters or leaves a warehouse or point of sale. One way of doing this is to have a web-based system in place that can instantly track and update the information about such materials. The improper handling and storage of materials has made it difficult to track and locate materials at the time they are needed. A properly implemented Online Building Materials Inventory System (OBMIS) can achieve the effective management of materials and equipment and thus improve warehouse management, cash flow and save time.

### Related works

Navon et al [1] discovered that materials resources constitute a large portion of a project's total cost and this makes them an important and attractive subject to control. Proper control and management of materials can



meaningfully increase productivity by 6%, or more. A model based on automatic, or semiautomatic, data collection for materials management and control has the main benefits of improving materials management, increased productivity and avoiding delays 8-10% productivity gain due to the availability of materials prior to commencing the work; reduction in the man hours that storekeepers, or foremen, currently spend searching for materials and following up purchase orders and reduction in the cost of the materials due to reduced waste. According to a study carried out by Kros et al [2] raw materials are component parts of the stock of inventories carried by a manufacturing firm at a given time. Every organization has inventories of some type and the economics and techniques for inventory management are critical for efficient operation, profitability and survival; especially in a highly competitive environment.

One of the problems facing Manufacturing Company is the growing trend towards the high cost of materials and services and constant shutdown of factories, which erode business profit. Ogbadu et al [3] found out that there is a positive and significant relationship between materials management problems and the frequent breakdown of the plant. It becomes very necessary to re-organize the materials management department, establish good relationship with suppliers of spare parts in order to minimize losses arising from frequent breakdown and improve profitability. It was also discovered that it is important to manage all materials and inventory throughout construction activities and process.

Kasim et al [4] discovered that failure in doing so will result in cost overrun, delays in project completion and reduce overall project performance. To further emphasize this Patil et al [5] discovered that material management brings benefits such as reducing the Overall cost of material, better handling of material, reduction in duplicate orders, improvements in labor productivity and project schedule, quality control.

While it is important that the manual system be replaced by software inventory management it is worth mentioning that some of the existing inventory management software have its own shortfalls:

Fishbowl Inventory Management Software which happens to be one of the existing inventory software available has a difficult user interface and can take a lot of time to learn. It is also expensive to buy and its license cannot be used on more than one computer. It is resource consuming and the hardware requirements can be difficult to meet especially for small business owners.

Another inventory software is Wasp Inventory Control which like the Fishbowl Inventory is also too complex and it is also pricey. It is not equipped with the feature to process orders and as such its inventory control features are limited. There is no means of adding multiple stores to the system which makes it not suitable for managing inventory in multiple warehouses. The aforementioned software can only be accessed with one user account which is not suitable in cases where there are multiple employees in charge of the inventory process [6].

### System Design

This study proposes an online inventory system which has five interconnected systems which are the Order system, Financial System, Stock system, Database and the Inventory management system. In the Order System when an order is made, the sale reflects in the inventory, an invoice is issued and the remaining stock subsequently updated in respect to the goods purchased. The Financial system records the transaction details and Cash Flow/Report, the stock system checks the stock level to avoid Shortage and manages any new stock supplied which is updated in the Inventory management system. The database is where all the data used in the Online Building Materials Inventory system is stored and any changes in data is reflected here.

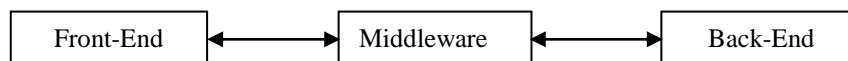


Figure 1: Design Architecture of the system

The OBMIS is structured as shown in Fig 1. There is a front-end or the graphical user interface (GUI), the middleware or the processing subsystem and the back-end or database.



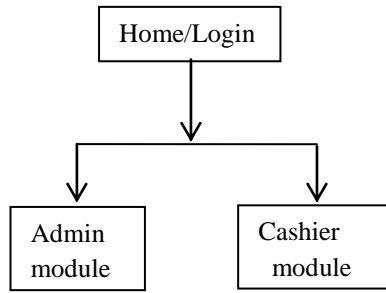


Figure 2: System Front-End structure

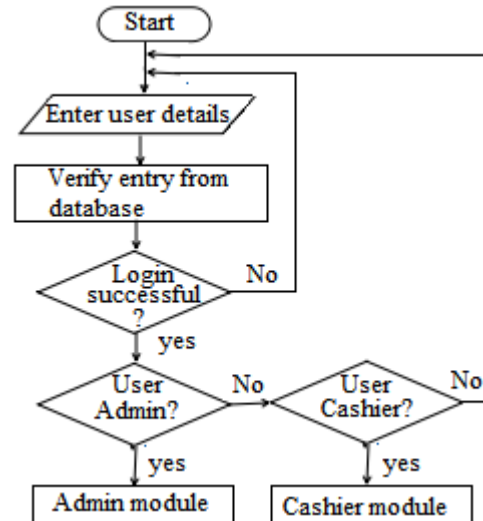


Figure 3: The Home/Login Module

The Front end also known as the graphical user interface (GUI) of the system was designed using CSS, Bootstrap and HTML. The Home tab (Fig 2) has two linked modules: The Admin module and the Cashier module. These can be accessed by only the authorized persons.

*Admin* contains links to other sub modules the admin can access. *Cashier* comprises of features the Cashier has full access to.

The Home/Login module (Fig 3) depicts the login process for the Admin and the Cashier.

**Admin Module** - This module comprises of features accessible to the Admin who is also the store manager. The Admin has access to all the features available on the website. As shown in Fig 4, the admin can add, view, delete, edit products, stores, users, groups, attributes, brands, category, orders. The admin can also edit company information and settings as well as view reports, dashboard and profile.

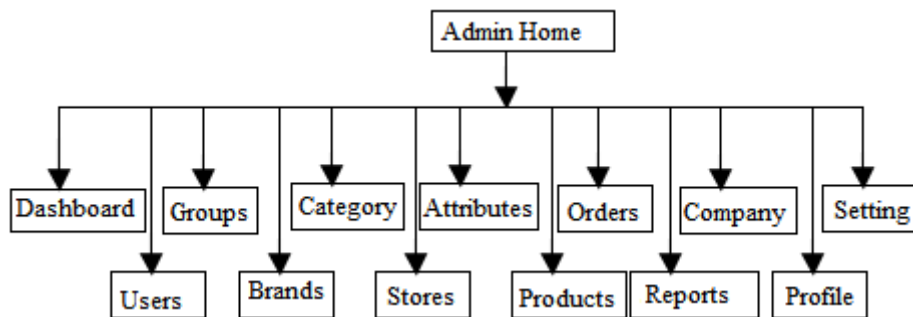


Figure 4: Admin module

**Dashboard module**

The dashboard (Fig 5a) is used to get a quick overview of the OBMIS. At a glance the Admin can see the total number of products, paid orders, number of users and total stores. Only the Admin can access this feature.

**User module**

This module (Fig 5b) is used to add, delete, edit and view users of the Online Building Materials Inventory System (OBMIS). Only the Admin has the privilege to add, delete, edit and view users.

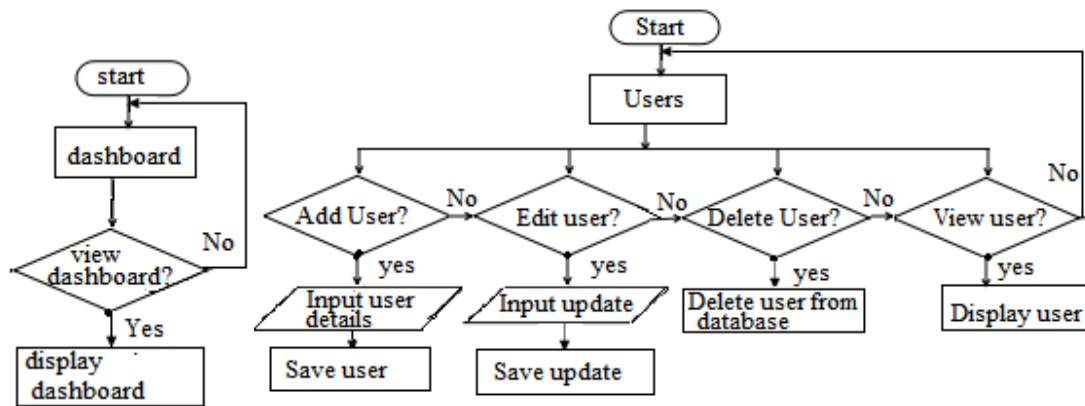


Figure 5: (a) Dashboard module (b) User module

**Group module**

This module deals with the access privileges of the users of the Online Building Materials Inventory System (OBMIS). This makes sure employees are allowed access to only the features that deals with their jobs in the organization. The Admin has the only privilege to view, edit, delete and add groups.

**Brand module**

The brand module allows the Admin or any user with sufficient privileges to view, edit, delete and create new brands for the products in the Online Building Materials Inventory System (OBMIS). The product brand is often the same as the name of the manufacturer.

**Category module**

This module allows the Admin to add, edit, delete and view the category of any product in the OBMIS. The products category is determined by the use of the material.

**Stores module**

This module allows the Admin to add, edit, delete and view the stores in which products are stored in. These stores represent the particular warehouse building materials are located. This is useful for construction companies that have multiple warehouses.

**Attributes module**

Attributes and values of the materials like colour, size can be managed from this module. The Admin can edit, delete, view and create new attributes.

**Orders module**

This module (Fig 6) is used to manage orders in the OBMIS. These orders contain the list of items sold and their cost. This feature is for transparency and accountability purposes. The Admin and the cashier can print, add, delete, edit and view orders. During the modification and creation of orders, details of the order like customer name, address, phone, quantity and cost are entered.

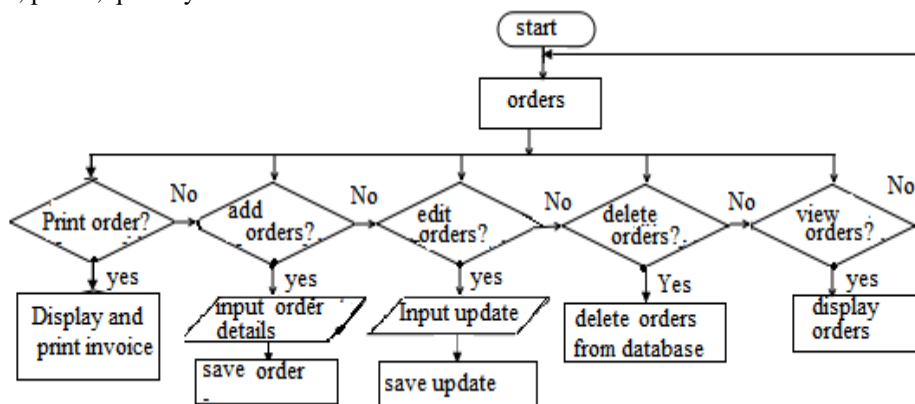


Figure 6: Orders module



**Reports module**

This module (Fig. 7a) is accessible to the Admin and cashier. Here information on paid orders is provided on a monthly and yearly basis. At the end of the page there is a calculation of the total amount of paid orders for each month and the total amount of paid orders for the year. A graph is also shown alongside the report for analysis purposes. Reports can only be viewed.

**Company module**

This module (Fig 7b) is used to enter company information into the system. Some of this information is used when billing customers while the rest are contact information, name and address of the company. The edit operation is the only operation allowed in this module. Only the Admin can access this module.

**Profile module**

This module (Fig 7c) is accessible to the Admin and the cashier. This displays the details of the user currently logged into the system. These details are username, email, address, phone number, Full name and access group. This module only displays user information which can be edited through the setting module.

**Settings module**

This feature is available to the Admin and cashier. This module (Fig 7d) allows the modification of user specific information like username, email, phone number, password, full name and gender of the user currently logged in.

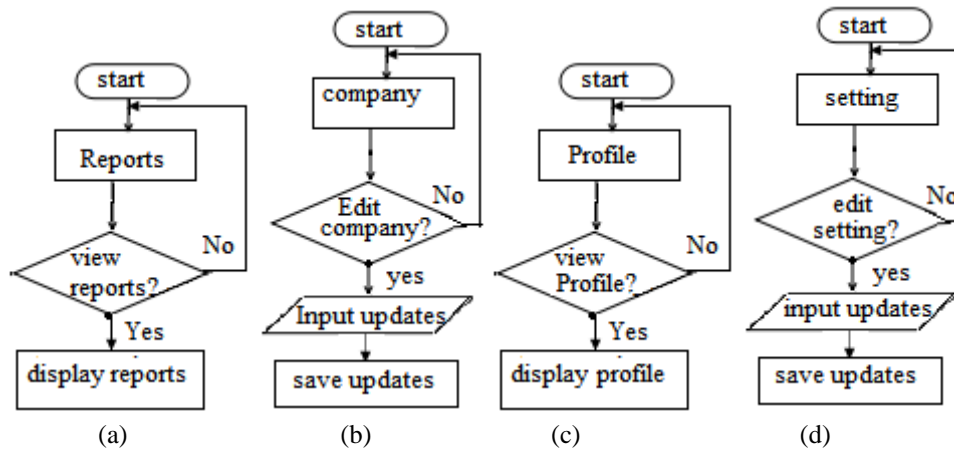


Figure 7: (a) Reports Module (b) Company Module (c) Profile (d) Setting module

**Cashier Module**

This module (Fig 8) comprises of features the Cashier has full access to. The cashier can add, view, delete and edit orders. The cashier can also edit settings as well as view reports and profile. These are the only features the Admin and cashier have in common.

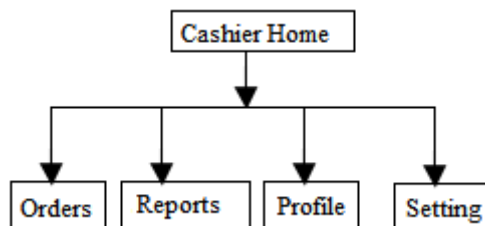


Figure 8: Cashier module

**Middleware**

This is the Middle dynamic content processing and generation level application server. It processes queries and request from the MySQL database and then presents the output in the front end to integrate the interfaces of the Online Building Materials Inventory System (OBMIS). The middleware was implemented using PHP.

**Back-end Designs** – The Database was designed with MySQL.



Table 1 shows the database structure for Brands, Category, Store and Attributes. The *item\_Id* stores unique numbers of the item/record. It is a primary key in this table and can be referenced in another table (foreign key). *Item\_name* stores registered name of the item. *Item\_active* stores the active status of the table item.

**Table 1:** Brands, Category, Store and Attributes Data

Field Name	Data Type
Item_Id	Int(11)
Item_name	varchar(255)
Item_active	Int(11)

Table 2 shows the database structure for Customer's orders. The *order\_bill\_no* stores the bill number of the order. *Customer\_name* stores the name of the customer while *customer\_address* and *customer\_phone* store the address and phone number of the customer. *Date\_time* stores the date and time the order was made. *Gross\_amount* stores the gross amount of the order. *Service\_charge\_rate* and *Service\_charge* store the service charge rate and the service charge of the order. *Vat\_charge\_rate* and *Vat\_charge* store the vat charge rate and the vat charge of the order. *Net\_amount* stores the net amount of the order while *Discount* stores the discount given for the order. *Paid\_status* stores the paid status of the order. *User\_id* stores the id of the user that creates the order in the OBMIS.

Table 3 shows the Database structure for products. *product\_name* stores the name of the product in stock while *Sku* is the Store keeping unit number of the product. *Price* and *Quantity* store the price and the quantity of the product in stock while *Image* stores the Image of the product. *Description* contains a brief description of the product. *Attribute\_value\_id*, *Brand\_id*, *Category\_id* and *Store\_id* store the attributes, brand, category and store identity of the product. *Availability* contains the availability status of the product.

**Table 2:** Customer's Orders

Field Name	Date Type
customer_id	Int(11)
Order_bill_no	varchar(255)
customer_name	varchar(255)
customer_address	varchar(255)
customer_phone	varchar(255)
Date_time	varchar(255)
Gross_amount	varchar(255)
Service_charge_rate	varchar(255)
Service_charge	varchar(255)
Vat_charge_rate	varchar(255)
Vat_charge	varchar(255)
Net_amount	varchar(255)
Discount	varchar(255)
Paid_status	Int(11)
User_id	Int(11)

**Table 3:** Products

Field Name	Date Type
product_id	Int(11)
product_name	varchar(255)
Sku	varchar(255)
Price	varchar(255)
Quantity	varchar(255)
Image	text
Description	text
Attribute_value_id	text
Brand_id	text
Category_id	text
Store_id	Int(11)
Availability	Int(11)





Table 4 shows the database structure for Company Data. *Company\_name* stores the name of the company. *Service\_charge\_value* and *Vat\_charge\_value* store the service charge of the company and the vat charge specified in the company information.

*Address* stores the physical location of the company. *Phone* stores the phone number of the company. *Country* contains the company’s country of residence. *Message* contains a brief description of the registered company. *Currency* stores the accepted currency for transactions.

Table 5 shows the database structure for the User. *User\_id* is an auto number used for identifying the id of the user in the database. *Username* contains the username of the user while *Password* contains the encrypted password of the user. *Email* stores the email address of the user. *Firstname* and *lastname* store the first name and last name of the user. *Phone* stores the phone number of the user while *gender* stores the gender of the user.

Table 4: Company Data		Table 5: User Data	
Field Name	Date Type	Field Name	Date Type
company_id	Int(11)	User_id	Int(11)
Company_name	varchar(255)	Username	varchar(255)
Service_charge_value	varchar(255)	Password	varchar(255)
Vat_charge_value	varchar(255)	Email	varchar(255)
Address	varchar(255)	Firstname	varchar(255)
Phone	varchar(255)	Lastname	varchar(255)
Country	varchar(255)	Phone	varchar(255)
Message	text	Gender	Int(11)
currency	varchar(255)		

Table 6 and 7 store the structure of the Group and User group data. *group\_name* stores the group name. *permission* stores the access privileges of the group. *user\_id* and *group\_id* store the unique identifier of the group user and of the group itself.

Table 6: Group Data		Table 7: User Group	
Field Name	Date Type	Field Name	Date Type
Group_id	Int(11)	User_group_id	Int(11)
Group_name	varchar(255)	User_id	Int(11)
permission	text	Group_id	Int(11)

Table 8 shows the database structure for Attribute Value. *value* stores the name of the attribute value. *attribute\_parent\_id* stores the identifier of the attribute value.

Table 9 shows that of Ordered Items. *order\_id* and *product\_id* stores the identifier of the order and of the product ordered. *qty* stores the quantity of the material ordered. *rate* stores the price of the material. *amount* stores the total price of the quantity ordered.

Table 8: Attribute Value		Table 9: Ordered Items	
Field Name	Date Type	Field Name	Date Type
Attribute_value_id	Int(11)	Ordered_items_id	Int(11)
value	Int(11)	Order_id	Int(11)
Attribute_parent_id	Int(11)	Product_id	Int(11)
		Qty	varchar(255)
		Rate	varchar(255)
		Amount	varchar(255)

### Implementation and Results

Sublime text was used for the coding stages of the software development while php was used for the server programming. Wamp server was also used to create and manage the database with MySQL. The result is a robust, scalable, and fast web development experience with great flexibility and little coding. The Back-End that is the Database was implemented using MySQL server. Its main functionality is storing and retrieving data in a secure manner as requested by applications.

### Home/Login page

At this page users are required to enter a valid email and password as shown in Fig 9 in order to gain access to the OBMIS. After entering the details the users now clicks the sign in button and if login is successful the users is taken to either the Admin page or Cashier page.



**Login**

Sign in to start your session

Email

Password

Remember Me **Sign In**

Figure 9: Home/Login page

**Admin page**

These are the implementation results of the OBMIS as seen from the Admin page.

**A. Dashboard**

Once the Admin logs in the dashboard is the first thing seen as shown in Fig 10. The dashboard gives an overview of the OBMIS. At a glance the Admin can see the total number of products, paid orders, number of users and total stores.

**Dashboard** Control panel

Home > Dashboard

<b>10</b> Total Products More info	<b>1</b> Total Paid Orders More info
<b>3</b> Total Users More info	<b>2</b> Total Stores More info

Figure 10: Dashboard of the Admin after successful login

**B. Users page**

**Add User**

Manage Users

Show 10 entries Search:

Username	Email	Name	Phone	Group	Action
cashier	cashier@admin.com	Dera Pascal	08108179189	Cashier	<input type="checkbox"/> <input type="checkbox"/>
Store	storemanager@admin.com	Chidera Nnaji	08068637258	Store manager	<input type="checkbox"/>

(a)

**Add User**

Groups

**Username**

**Email**

**Password**

**Confirm password**

**Save Changes** **Back**

(b)



**Edit User**

**Groups**

Cashier

**Username**

Cashier

**Email**

Cashier@admin.com

**First name**

Dera

**Last name**

Pascal

Save Changes Back

(c)

Manage Users

Do you really want to remove ?

Confirm Cancel

(d)

Figure 11: a. Users page b. Add users page c. Edit user page d. Delete user page

From this page the Admin carries out the managerial action like manage users (view, add, edit and delete users) of the OBMIS. The Admin views the users of the OBMIS from the users page shown in Fig 11a. To add new users the Admin selects the Add user option which takes the Admin to the Add user page shown in Fig 11b. The Admin now fills in the details of the new user and clicks on the save changes button to save the user to the database. To edit a user the Admin clicks on the edit icon from the User page which now takes the Admin to the Edit user page shown in Fig 11c. The Admin now modifies the user details then clicks on the save changes button to update the user. To delete a user, the Admin clicks on the delete icon from the User page which now takes the Admin to the delete user page shown in Fig 11d. The Admin now clicks on the confirm button to delete the user.

**C. Groups page**

This page allows the Admin to set the features that are available to the users of the OBMIS. The group feature give the users of the OBMIS difference access privileges. From this page the Admin carries out managerial actions (view, add, edit and delete) on the groups . Fig 12a shows the group page from which the Access groups can be viewed. To add a group, the Admin clicks on the Add group button which directs to the Add group page shown in Fig 12b the Admin now fills in the new group detail and selects the save changes button. To edit a group, the Admin clicks on the edit icon which directs to the Edit group page shown in Fig 12c the Admin now updates the group details and selects the save changes button. To delete a group, the Admin clicks on the delete group icon which directs to the delete group page shown in Fig 12d, the Admin selects the confirm button to delete the group.

Add Group

**Manage Groups**

Show 10 entries Search:

Group Name	Action
Cashier	
Store manager	

(a)

**Add Group**

**Group Name**

Enter group name

**Permission**

Create Update View Delete

Users

Groups

Brands

Category

Stores

Save Changes Back

(b)



**Edit Group**

**Group Name**

**Permission**   **Create**   **Update**   **View**   **Delete**

Users	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groups	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Category	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(c)

**Manage Groups**

Do you really want to remove ?

(d)

Figure 12: a. Groups page b. Add group page c. Edit group page d. Delete group page

**D. Brands page**

Here the brands of the various materials in the OBMIS can be managed by the Admin. From this page they can be viewed, edited, deleted and new ones created. Fig 13a shows the brand page from which the brands can be seen. To add a brand the Admin clicks on the Add brand button which leads to the Add brand page shown in Fig 13b. The Admin now enters the details of the new brand and clicks the save changes button to add brand to the database. To edit a brand the Admin clicks on the edit icon next to the brand list, this now leads to the edit brand page shown in Fig 13c where the details of the brand are now altered. The save changes button is selected which now updates the brand details. To delete a brand the Admin clicks on the delete icon from the brand page which now directs to the delete page shown in Fig 13d. The save changes button is now selected to delete the brand.

**Manage Brands**

Show  entries

Brand Name	Status	Action
Dangote	<input type="button" value="Active"/>	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Guardian Glass	<input type="button" value="Active"/>	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

(a)

**Add Brand**

**Brand Name**

**Status**

(b)

**Edit Brand**

**Brand Name**

**Status**

(c)

**Remove Brand**

Do you really want to remove?

(d)

Figure 13: a. Brand page b. Add brand page c. Edit brand page d. Delete brand page

**E. Category page**

Here the category of the various materials in the OBMIS can be managed by the Admin. From this page they can be viewed, edited, deleted and new ones created. Fig 14a shows the category page from which the materials categories can be seen. To add a category the Admin clicks on the Add category button which leads to the Add category page shown in Fig 14b. The Admin now enters the details of the new category and clicks the save changes button to add the category to the database. To edit a category the Admin clicks on the edit icon next to the category, this now leads to the edit category page shown in Fig 14c where the details of the category are now altered. The save changes button is selected which now updates the category details. To delete a category the Admin clicks on the delete icon from the category page which now directs to the delete page shown in Fig 14d. The save changes button is now selected to delete the brand.

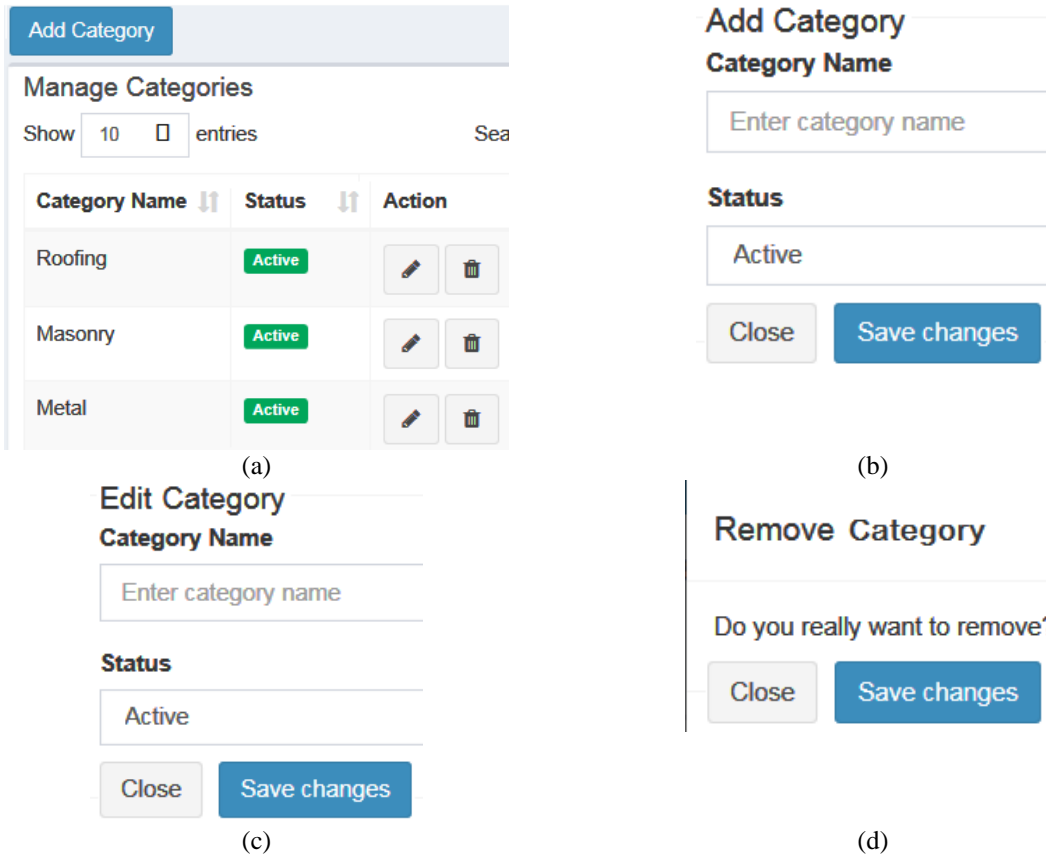


Figure 14: a. Category page b. Add category page c. Edit Category page d. Delete category page

**F. Stores page**

Here the stores of the various materials in the OBMIS can be managed by the Admin. From this page they can be viewed, edited, deleted and new ones created. Fig 15a shows the stores page from which the materials stores can be seen. To add a store the Admin clicks on the Add store button which leads to the Add store page shown in Fig 15b. The Admin now enters the details of the new store and clicks the save changes button to add the store to the database. To edit a store the Admin clicks on the edit icon next to the store, this now leads to the edit store page shown in Fig 15c where the details of the store are now altered. The save changes button is selected which now updates the store details. To delete a store the Admin clicks on the delete icon from the store page which now directs to the delete page shown in Fig 15d. The save changes button is now selected to delete the store.

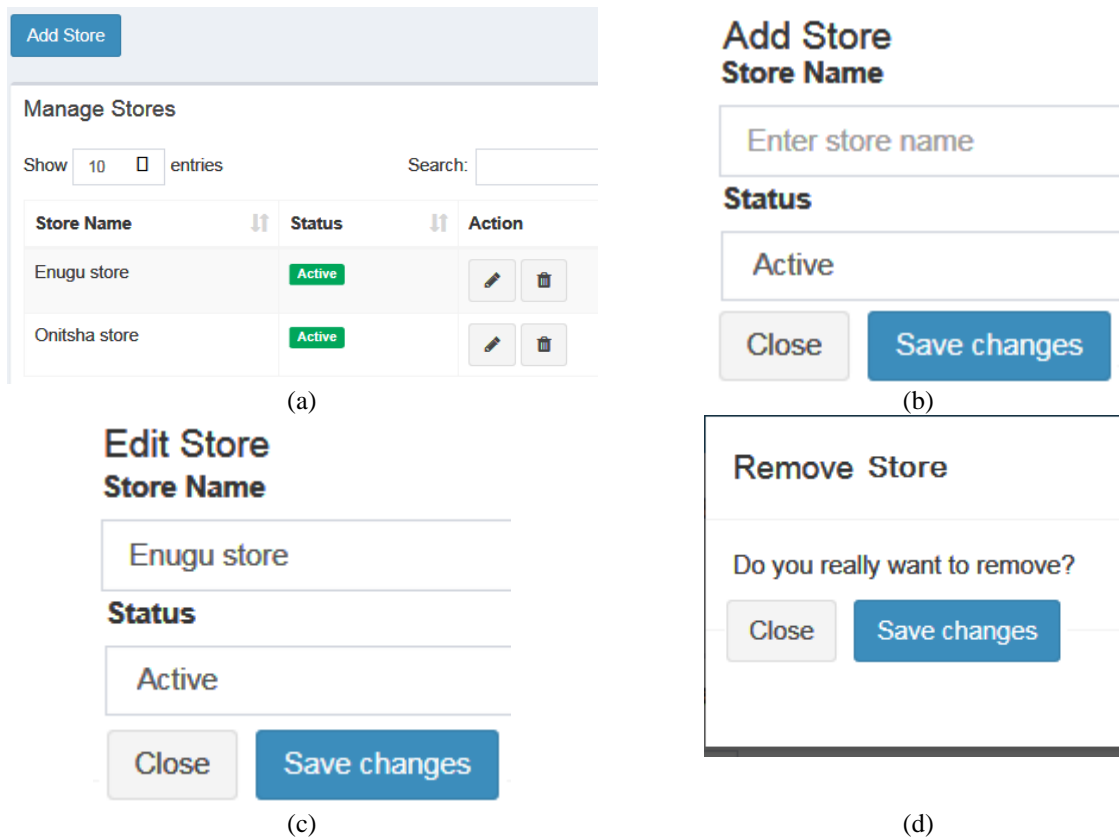
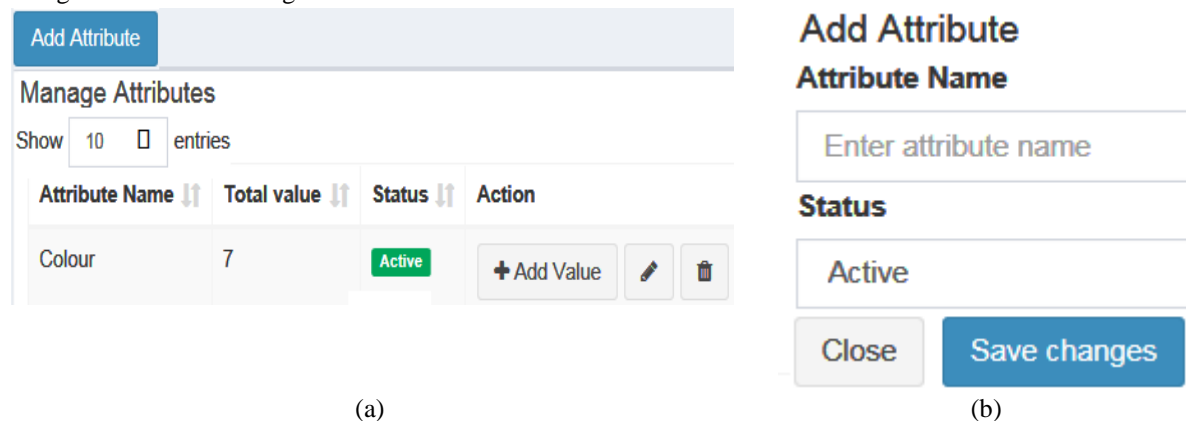


Figure 15: a. Stores page b. Add store page c. Edit store page d. Delete store page

**G. Attributes page**

Here attributes like colour of the various materials in the OBMIS can be managed by the Admin. From this page they can be viewed, edited, deleted and new attributes created. Fig 16a shows the attributes page from which the materials attributes can be seen. To add an attribute the Admin clicks on the Add attribute button which leads to the Add attribute page shown in Fig 16b. The Admin now enters the details of the new attribute and clicks the save changes button to add the attribute to the database. To edit an attribute the Admin clicks on the edit icon next to the attribute, this now leads to the edit attribute page shown in Fig 16c where the details of the attribute are now altered. The save changes button is selected which now updates the attribute details. To delete an attribute the Admin clicks on the delete icon from the attribute page which now directs to the delete page shown in Fig 16d. The save changes button is now selected to delete the attribute.



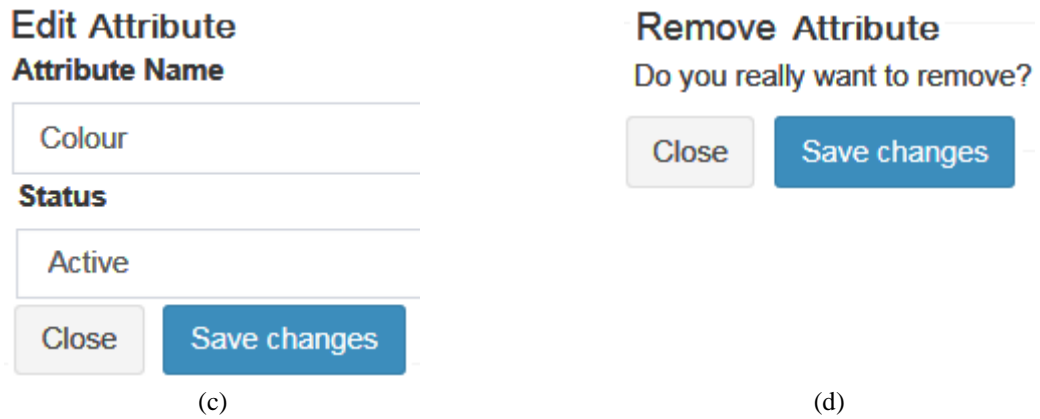


Figure 16: a. Attributes page b. Add attribute page c. Edit attributes page d. Delete attribute page

**H. Attribute Value page**

Here attribute value (red, blue etc) of the attributes can be managed by the Admin. From this page they can be viewed, edited, deleted and new attributes value created. Fig 17a shows the attributes value page from which the attributes value can be seen. To add an attribute value the Admin clicks on the Add value button which leads to the Add attribute value page shown in Fig 17b. The Admin now enters the details of the new value and clicks the save changes button to add the value to the database. To edit a value the Admin clicks on the edit icon next to the value, this now leads to the edit attribute value page shown in Fig 17c where the details of the attribute value are now altered. The save changes button is selected which now updates the value details. To delete an attribute value the Admin clicks on the delete icon from the attribute value page which now directs to the delete page shown in Fig 17d. The save changes button is now selected to delete the attribute.

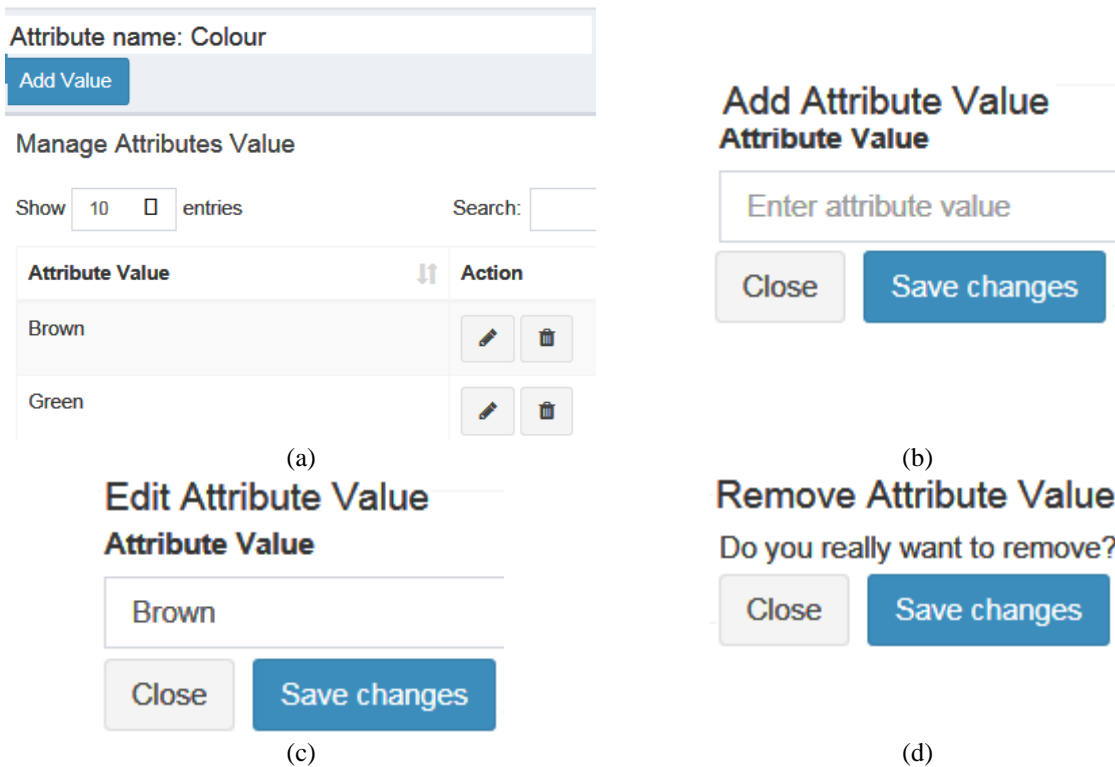


Figure 17: a. Attribute value page b. Add attribute value page c. Edit attribute value page d. Delete attribute page

**I. Products page**

Here the materials in the OBMS can be managed by the Admin. From this page they can be viewed, edited, deleted and new building materials added. Fig 18a shows the products page from which the materials can be seen. To add a product the Admin clicks on the Add product button which leads to the Add product page shown in Fig 18b. The Admin now enters the details of the new product and clicks the save changes button to add the attribute to the database. To edit a product the Admin clicks on the edit icon next to the product, this now leads to the edit product page shown in Fig 18c where the details of the product are now altered. The save changes button is selected which now updates the product details. To delete a product the Admin clicks on the delete icon from the product page which now directs to the delete page shown in Fig 18d. The save changes button is now selected to delete the product.

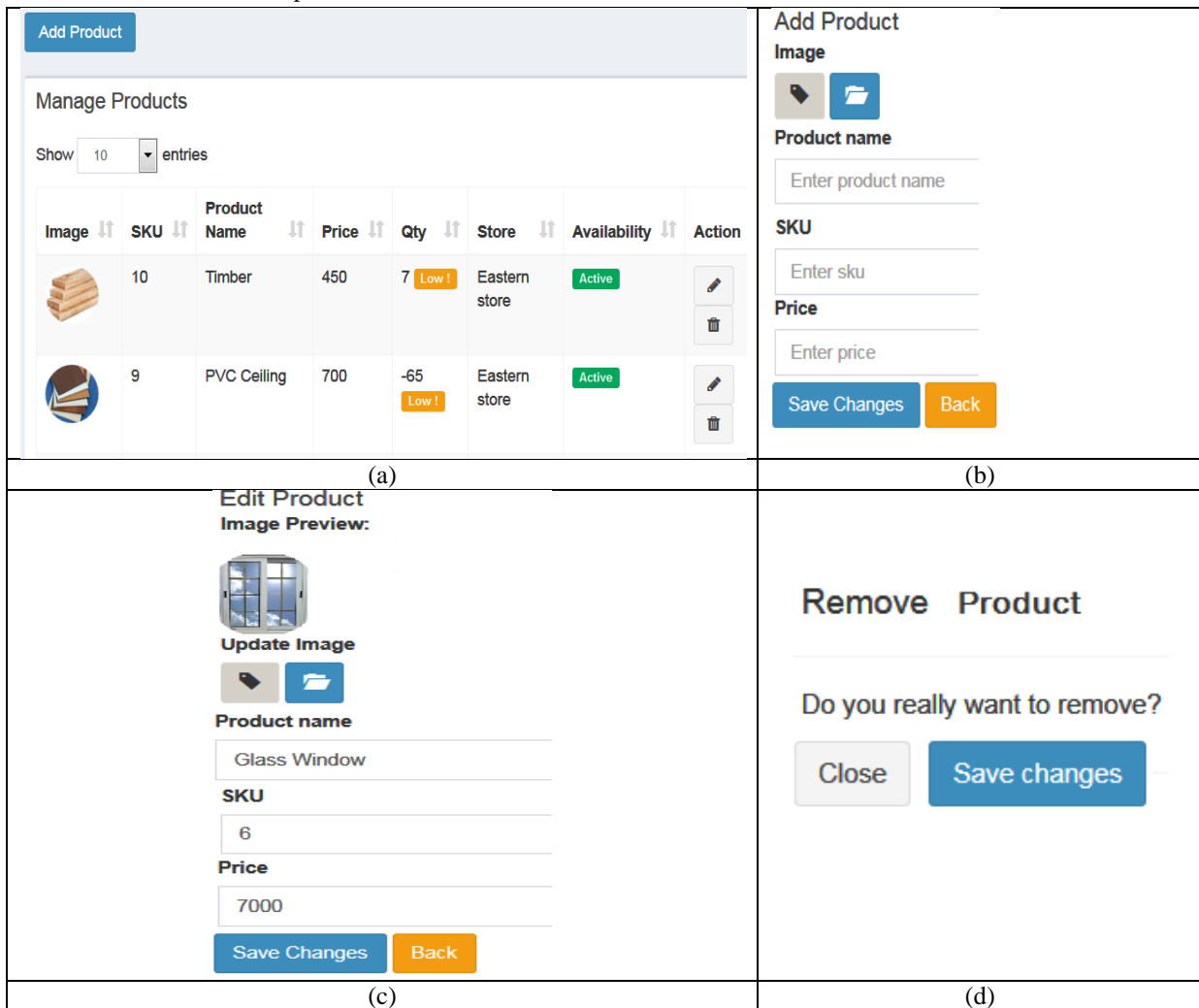


Figure 18: a. Products page b. Add product page c. Edit products page d. Delete product page

**J. Orders page**

This page is used by the Admin and the Cashier to manage orders in the OBMS. From this page orders can be viewed, edited, deleted and new orders created. Fig 19a shows the orders page from which the materials orders can be seen. To add a new order the Admin or cashier clicks on the Add order button which leads to the Add order page shown in Fig 19b. The details of the new order are now entered and save changes button is clicked to add the order to the database. To edit an order the Admin or cashier clicks on the edit icon next to the order, this now leads to the edit order page shown in Fig 19c where the details of the order are now altered. The save changes button is selected which now updates the order details. To delete an order the Admin or cashier clicks on the delete icon from the order page which now directs to the delete page shown in Fig 19d. The save changes

button is now selected to delete the order. To print an order the Admin or Cashier clicks on the print icon on the order page which leads to the print order page (Fig 19e) where the user now prints the order invoice.

**Add Order**

### Manage Orders

Show  entries Search:

Bill no	Customer Name	Customer Phone	Date Time	Total Products	Total Amount	Paid status	Action
BILPR-8941	Pascal	08068637258	16-08-2018 08:00 pm	4	35174.50	Paid	  
BILPR-BC9C	Dera	08108179189	16-08-2018 07:48 pm	2	560217.00	Not Paid	  

(a)

**Add Order**  
Date: 2018-09-03  
Date: 05:50 pm

**Customer Name**

**Customer Address**

**Customer Phone**

Product	Qty	Rate	Amount
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

(b)

**Edit Order**  
Date: 2018-09-03  
Date: 06:05 pm

**Customer Name**

**Customer Address**

**Customer Phone**

Product	Qty	Rate	Amount
Cement Block <input type="text"/>	<input type="text" value="5"/>	<input type="text" value="3"/>	<input type="text" value="1500.00"/>

(c)

### Remove Order

Do you really want to remove?

(d)

**Bill ID:** BILPR-BC9C  
**Name:** Dera  
**Address:** Abakpa  
**Phone:** 08108179189

Product name	Price	Qty	Amount
Glass Window	7000	70	490000.00
PVC Ceiling	700	77	53900.00
<b>Gross Amount:</b>			543900.00
<b>Vat Charge (3%)</b>			16317.00
<b>Discount:</b>			
<b>Net Amount:</b>			560217.00
<b>Paid Status:</b>			Unpaid

(e)

Figure 19: a. Orders page b. Add Order page c. Edit order page d. Delete order page e. Print order page



**K. Report page**

This page is used by both the Admin and the Cashier to view reports. These reports cannot be edited or deleted. They are used for analysis purposes to calculate the monthly and yearly paid orders. A graph is also provided to enhance readability.

**L. Company page**

This page contains information about the company. These are the personal details of the company which include the company name, charge amount, vat charge, address, phone number, company description, country and currency of transaction. The details in this page can only be edited by the Admin and the Cashier. To edit go to the company page shown in Fig 21, enter the details then select the save changes button to update the company details.

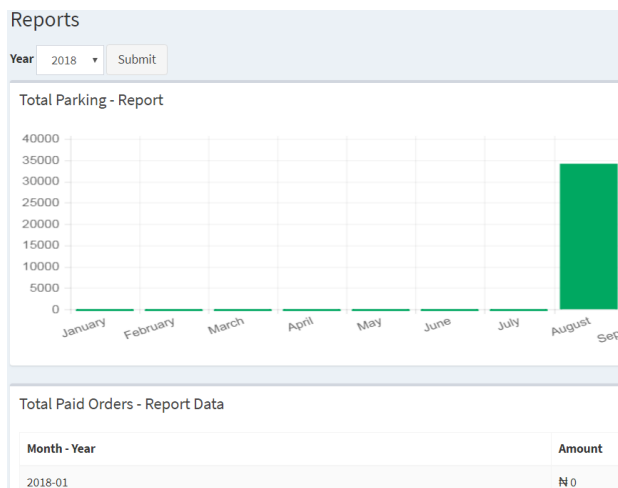


Figure 20: Report page

The screenshot shows a form for company details. Fields include: 'Address' (186 Nike Road), 'Phone' (08068637258), 'Country' (Nigeria), 'Message' (with a rich text editor showing 'Normal text', 'Bold', 'Italic', 'Underline', 'Small', and 'Quote' options), and 'Currency' (NGN). A blue 'Save Changes' button is at the bottom.

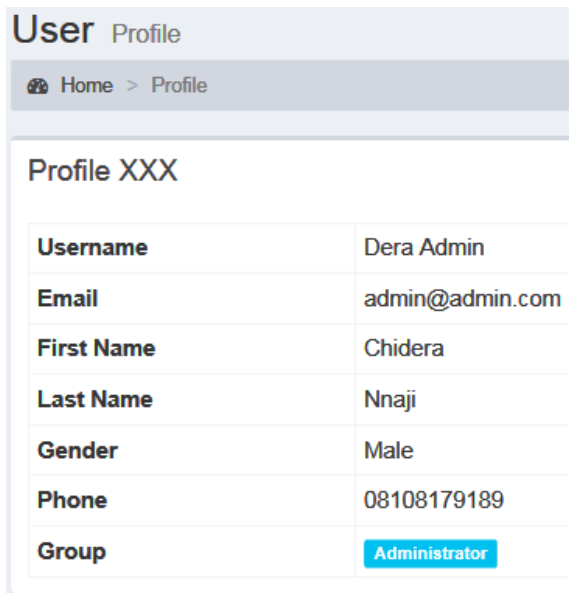
Figure 21: Company page

**M. Profile page**

This page contains the profile details of the user currently logged in the OBMIS. These details are the username, email, full name, gender, phone number and Access group. The details in this page can be accessed by the Admin and the Cashier. The details can be viewed but can only be modified through the setting page shown in Fig 22.

**N. Setting page**

This part of the system allows changes to the user’s profile information. The changes are made to the user currently logged into the system and will reflect on the profile page shown in Fig 23. To edit the user profile information, go to the setting page, enter the details, then select the save changes button to update the user details.



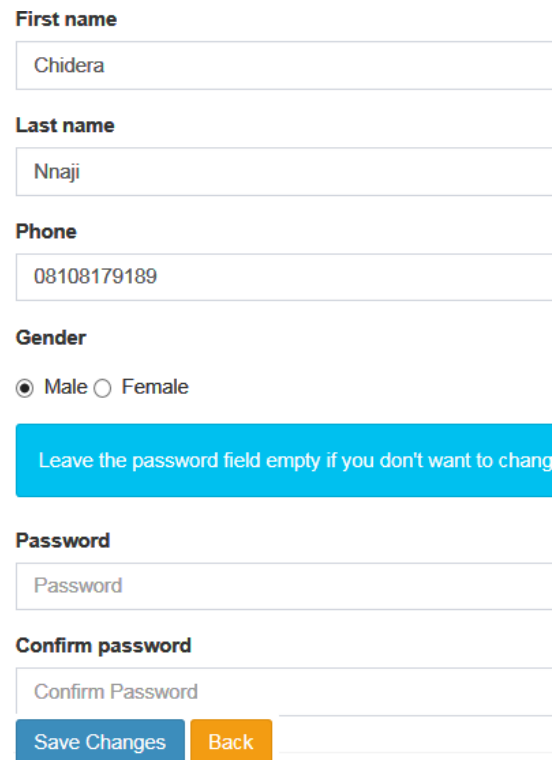
User Profile

Home > Profile

Profile XXX

Username	Dera Admin
Email	admin@admin.com
First Name	Chidera
Last Name	Nnaji
Gender	Male
Phone	08108179189
Group	Administrator

Figure 22: Profile page



First name

Chidera

Last name

Nnaji

Phone

08108179189

Gender

Male  Female

Leave the password field empty if you don't want to change

Password

Password

Confirm password

Confirm Password

Save Changes Back

Figure 23: Setting page

### Cashier page

These are the implementation results as seen from the Cashier page. As mentioned previously, the Cashier has full access to the orders, report, profile and setting pages.

### Conclusion

The OBMIS (Online Building Material Inventory System) is a web based inventory system which will not only replace the old system but will have some improvements. The OBMIS is designed with a simple user interface which makes it easy for first time users to learn. It has a store feature which specifies the physical warehouse in which the building materials are stored. This is useful for building materials companies with multiple warehouses. There are also different access privileges for the users of the OBMIS, this ensures that those in charge of the inventory process can access the system simultaneously. The OBMIS is not expensive to set up and can be accessed from more than one computer. It is also equipped with an order and report feature which ensures transparency, which is useful for audits. The system developed was able to meet all the basic requirements specified. The management of the physical warehouse will also benefit from the proposed system as it will automate the building material inventory process. The implementation of the system will considerably reduce data entry time and also provide readily calculated reports.

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