
Lab Report on
Courier Management System

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Software Requirements Specification

FOR

Courier Management System

Version 1.2

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1. Abstract

Courier Management System is a web-based courier system which supports the high accessibility of courier services to the companies and to the customers. This system is being used for day-to-day activities such as booking a courier, maintain customer details, track the parcel.

When transferring their goods via a courier service, people want to know if their items have been delivered safely, when they will be delivered, and where they are located. Manually keeping track of all this data is an extremely challenging and time-consuming procedure. We need a system that can track the package on time to reduce these complications.

The web-based Courier Management System facilitates the increased accessibility of courier services for both clients and businesses. Daily tasks like scheduling a courier, keeping track of customer information, and tracking packages are all done with this system. The courier industry's traditional method produces a lot of false results and very little productivity. Therefore, we prefer to make improvements and introduce fresh changes for this \$1 trillion sector worldwide.

2. Introduction

The Courier Management System Project have different modules. The login section will have login facility for the admin who will operate this system. While taking orders from its customers, it will take all the details of its customers who is placing the order and all the details for the recipient such as its address, name, mobile number. During billing process system will generate a tracking id or reference number for their products. Using this reference number, customers or its recipient will be able to track their products from any location using internet. It will provide tracking status of the product after placing order.

Companies that deliver parcel were disadvantage in that they had to keep all information of parcel there are delivering on paper and also they spent a lot trying to get the person who will receive the parcel by calling them which cost a lot of money to the company but by use of this system it will get rid of paper work and also the information of what was being delivered will be kept for future reference which will make easier and convenient when it is being searched and furthermore client will be able to get a forehand information about their parcel on what time they will receive so that they will plan and by doing this it will enable the customers to have confidence on what is being offered in the company thus leading to higher returns to the company the to the paper work.

The **purpose** of the proposed system is to help customers to keep track of their shipments anytime, anywhere using the courier website. Also creating the accounts for courier officers allows us to keep the database secure as only the authorized can access the database. The proposed system is a lightweight courier system built entirely using php and frontend languages for smooth and better user experience.

Motivation –

These days all the data is store in the database. But few departments still make use of traditional way of storing shipment details using paper and pen (forms). This system allows us to take advantage of the technology and hence making managing database much more efficient and easier.

People when transfer their products using any parcel service wants to know whether their product has been shifted to their right place or not, if not then by what time it will be shifted and where it is now. Taking all this information manually is very difficult and time taking process. To handle all these activities, include various processes and paper work from the management side also.

Problem Statement –

People when transfer their products using any courier service wants to know whether their product has been shifted to their right place or not, if not then by what time it will be shifted and where it is now. Taking all this information manually is very difficult and time taking process. To handle all these activities, include various processes and paper work from the management side also.

Tracking all this information manually is very difficult and time taking process. To minimize these complexities, we require some system which can track the parcel on time basis.

3. Entity & Attributes

1. Branches

- **Attributes:**
 - id (int, auto-increment, primary key)
 - branch_code (varchar)
 - street (text)
 - city (text)
 - state (text)
 - zip_code (varchar)
 - country (text)
 - contact (varchar)
 - date_created (datetime)

2. Parcels

- **Attributes:**
 - id (int, auto-increment, primary key)
 - reference_number (varchar)

- sender_name (text)
- sender_address (text)
- sender_contact (text)
- recipient_name (text)
- recipient_address (text)
- recipient_contact (text)
- type (int)
- from_branch_id (varchar)
- to_branch_id (varchar)
- weight (varchar)
- height (varchar)
- width (varchar)
- length (varchar)
- price (float)
- status (int)
- date_created (datetime)

3. Parcel Tracks

- **Attributes:**
 - id (int, auto-increment, primary key)
 - parcel_id (int, foreign key)
 - status (int)
 - date_created (datetime)

4. System Settings

- **Attributes:**
 - id (int, auto-increment, primary key)
 - name (text)
 - email (varchar)
 - contact (varchar)
 - address (text)
 - cover_img (text)

5. Users

- **Attributes:**
 - id (int, auto-increment, primary key)
 - firstname (varchar)
 - lastname (varchar)
 - email (varchar)
 - password (text)
 - type (tinyint)

- branch_id (int, foreign key)
- date_created (datetime)

4. Proposed System

Overview–

Will have login facility for admin which will give him access to operate the system and whose user id and password will be securely stored in the database. Admin can take order from the customers and add the shipment details into the system which will be stored in the database. Admin can also update the shipment details including the tracking status. All the shipments in the database will be sorted date wise and delivered shipments will be separated. All these will be visible to the admin in his/her login. Customers can track the status of the shipment using the consignment number of the particular order.

The tracking result will contain the following info –

- Current status
- Pickup date
- Comments
- Etc.

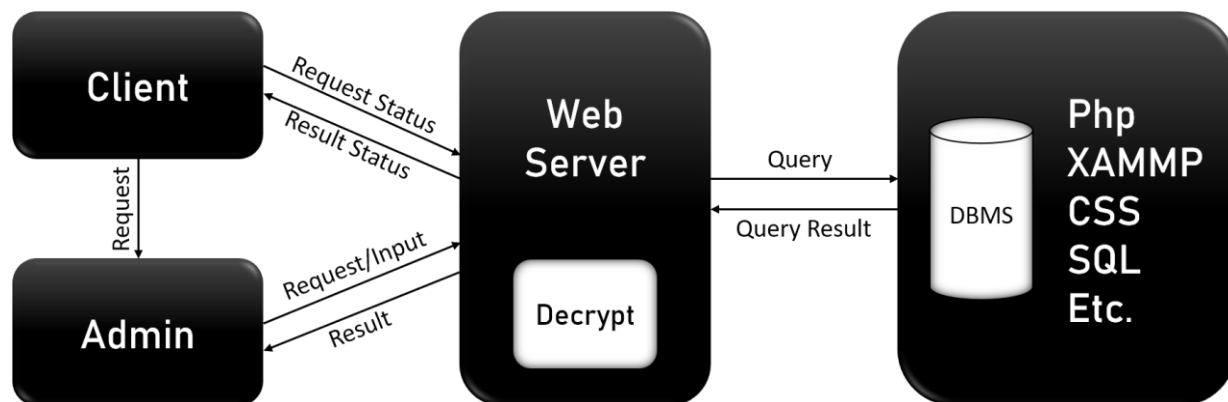


Figure 1 : System Architecture

Graphical representation for the courier management system developed, client gives request through the website and place their choice of order or email to admin or if he/she is an old user they and want to see the package detail they request to the webserver and then it provides the status for the order. The webserver and the website runs on the front end developed on html and css also the backend used to store the database for every shipment detail and every client detail is developed using sql and xampp server.

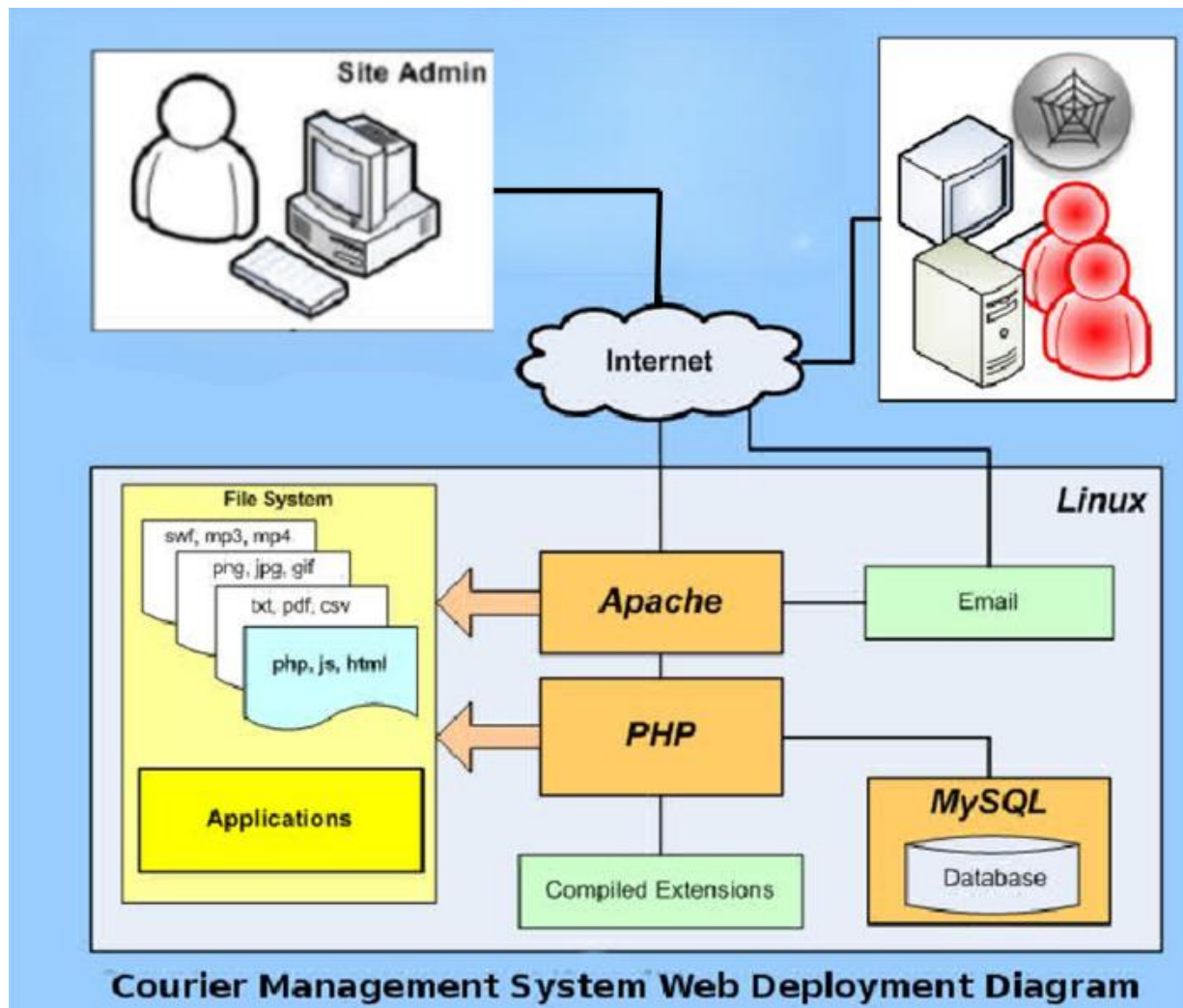


Figure 2 : This is the pictorial representation for the system architecture used in the system

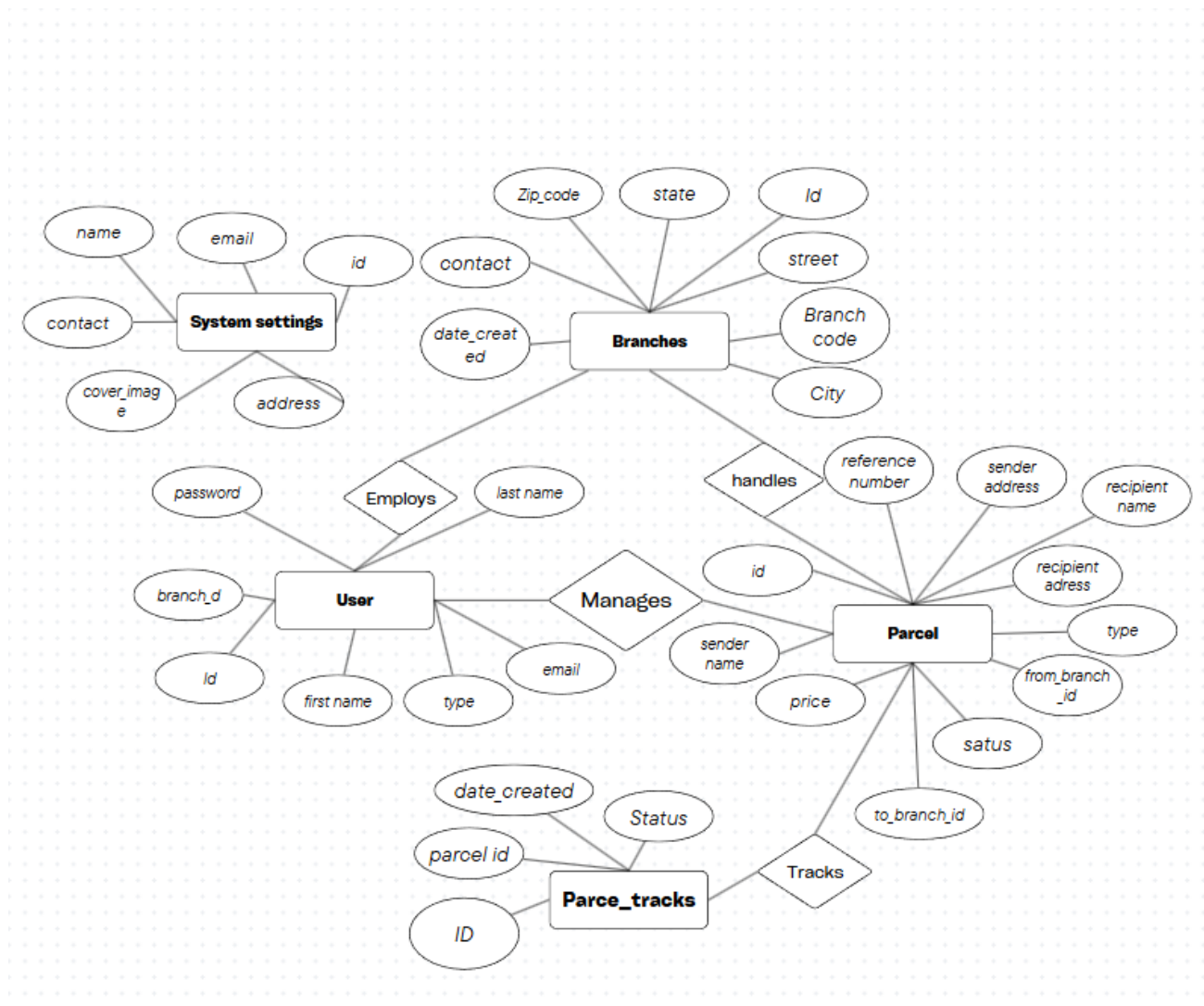


Figure 3 : ER Diagram

ER diagram which is used for depicting the entity, attributes connectivity and dependency on each other.

Relationships Summary

- **Branches** ↔ **Users**: One-to-Many (One branch can have multiple users).
- **Branches** ↔ **Parcels**: One-to-Many (One branch can send/receive multiple parcels).
- **Parcels** ↔ **Parcel Tracks**: One-to-Many (One parcel can have multiple tracking records).

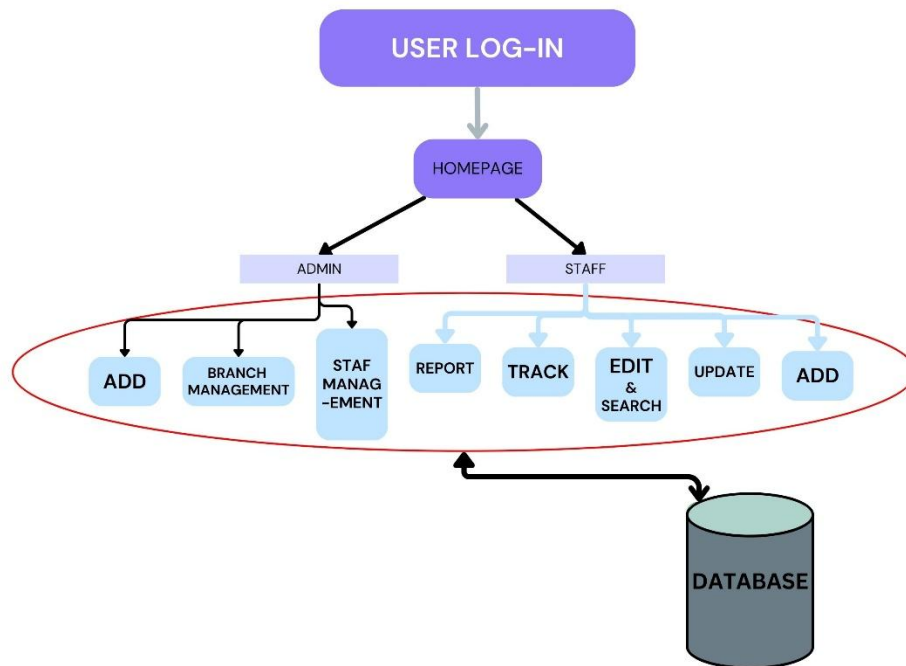


Figure 4 : Functional Architecture

The diagram illustrates the system flow and role-based functionality of a **Courier Management System**. The system begins with a **Homepage**, which acts as the entry point for users. Upon logging in, users are directed to specific functionalities based on their roles, which are classified as **Admin** and **Staff**. Each role is granted access to distinct operations aligned with their responsibilities.

The **Admin** role is equipped with several capabilities, including the ability to **Add** new entities such as branches, staff, or other records. Admins can also perform **Branch Management** to oversee branch details and configurations and handle **Staff Management** to maintain staff records and assign roles. These operations highlight the administrative control over the system's core components.

On the other hand, the **Staff** role focuses on operational tasks. Staff members can generate and view **Reports**, update and monitor parcel tracking through the **Track** feature, and **Edit & Search** existing records for efficient management. Additionally, staff can **Update** parcel details and **Add** new entries such as incoming parcels into the system.

A **Database** serves as the backbone of the system, enabling both Admin and Staff to store, retrieve, and manage critical information, including branches, users, parcels, and tracking logs. This centralized database ensures seamless synchronization between all modules and provides a robust foundation for data integrity and accessibility.

Overall, the diagram depicts a modular and role-based architecture, emphasizing the separation of responsibilities between Admin and Staff while showcasing their interdependence on the centralized database to perform their respective operations efficiently.

5. Implementation

Software Details –

- Web Server (XAMMP server)
- PHP: All the business and frontend logic has been implemented in PHP
- HTML: Page layout has been designed in HTML
- CSS: CSS has been used for all the designing part
- Bootstrap: a css framework.
- JavaScript(jQuery/Ajax): All the validation task and animations has been developed by JavaScript
- MYSQL: MYSQL database has been used as database for the project
- Apache: Project will be run over the Apache server

Screenshots –

Tables -

```
CREATE TABLE `branches` (  
  `id` int(30) NOT NULL,  
  `branch_code` varchar(50) NOT NULL,  
  `street` text NOT NULL,  
  `city` text NOT NULL,  
  `state` text NOT NULL,  
  `zip_code` varchar(50) NOT NULL,  
  `country` text NOT NULL,  
  `contact` varchar(100) NOT NULL,  
  `date_created` datetime NOT NULL DEFAULT current_timestamp()  
)
```

```
Sql> SELECT * FROM `branches`
```

	id	branch_code	street	city	state	zip_code	country	contact	date_created
<input type="checkbox"/> Edit Copy Delete	1	ch001	Mansurabad	Chittagong	Chittagong	4000	Bangladesh	+880123456789	2025-01-25 10:30:00
<input type="checkbox"/> Edit Copy Delete	2	dh002	Gulshan Avenue	Dhaka	Dhaka	1212	Bangladesh	+880987654321	2025-01-25 11:00:00
<input type="checkbox"/> Edit Copy Delete	3	ct003	Agrabad	Chittagong	Chittagong	4100	Bangladesh	+8801122334455	2025-01-25 11:30:00

Figure 5: Branches table.

```
CREATE TABLE `parcels` (  

```

```

`id` int(30) NOT NULL,
`reference_number` varchar(100) NOT NULL,
`sender_name` text NOT NULL,
`sender_address` text NOT NULL,
`sender_contact` text NOT NULL,
`recipient_name` text NOT NULL,
`recipient_address` text NOT NULL,
`recipient_contact` text NOT NULL,
`type` int(1) NOT NULL COMMENT '1 = Deliver, 2=Pickup',
`from_branch_id` varchar(30) NOT NULL,
`to_branch_id` varchar(30) NOT NULL,
`weight` varchar(100) NOT NULL,
`height` varchar(100) NOT NULL,
`width` varchar(100) NOT NULL,
`length` varchar(100) NOT NULL,
`price` float NOT NULL,
`status` int(2) NOT NULL DEFAULT 0,
`date_created` datetime NOT NULL DEFAULT current_timestamp()
)

```

Sql> SELECT * FROM `parcels`

id	reference_number	sender_name	sender_address	sender_contact	recipient_name	recipient_address	recipient_contact	type 1 = Deliver, 2 = Pickup	from_branch_id	to_branch_id	weight	height	width	length	price	status	date_created
1	20140	Mitur	Dhaka, Bangladesh	+8801712345678	Rifat Karim	Agrabad, Chattogram, Bangladesh	+8801612345678	1	1	0	30kg	12m	12m	15m	2500	7	2020-11-26 16:15:46
2	117967	Mitur	Dhaka, Bangladesh	+8801912345678	Afsana Jahan	Zindabazar, Sylhet, Bangladesh	+8801512345678	2	1	3	30kg	12m	12m	15m	2500	1	2020-11-26 16:46:03
3	983186540795	Sharmin Akhter	Mohammadpur, Dhaka, Bangladesh	+8801812345678	Nayeem Islam	Barguna, Barisal, Bangladesh	+8801719876543	2	1	3	20Kg	10m	10m	10m	1500	2	2020-11-26 16:46:03
4	514912669061	Tania Rahman	Nasirabad, Chattogram, Bangladesh	+8801918765432	Rakibul Alam	Sonadanga, Khulna, Bangladesh	+8801715432198	2	4	1	23kg	12m	12m	15m	1900	0	2020-11-27 13:52:14
5	897856905844	Fahmida Parvin	Gulshan, Dhaka, Bangladesh	+8801617654321	Tanvir Ahmed	Boyra, Khulna, Bangladesh	+8801713547865	2	4	1	30kg	10m	10m	10m	1450	0	2020-11-27 13:52:14
6	505604160988	Imran Hossain	Banani, Dhaka, Bangladesh	+8801712348765	Sadia Sultana	Sherpur, Mymensingh, Bangladesh	+8801912348765	1	1	0	23kg	12m	12m	15m	2500	1	2020-11-27 14:06:42

Figure 6: parcel table.

```

CREATE TABLE `parcel_tracks` (
  `id` int(30) NOT NULL,
  `parcel_id` int(30) NOT NULL,
  `status` int(2) NOT NULL,
  `date_created` datetime NOT NULL DEFAULT current_timestamp()
)

```

Sql> SELECT * FROM `parcel_tracks`

id	parcel_id	status	date_created
1	2	1	2025-01-27 09:53:27
2	3	1	2025-01-27 09:55:17
3	1	1	2025-01-27 10:28:01
4	1	2	2025-01-27 10:28:10
5	1	3	2025-01-27 10:28:16
6	1	4	2025-01-27 11:05:03
7	1	5	2025-01-27 11:05:17
8	1	7	2025-01-27 11:05:26
9	3	2	2025-01-27 11:05:41
10	6	1	2025-01-27 14:06:57

Figure 7: parcel tracks table.

```
CREATE TABLE `system_settings` (
  `id` int(30) NOT NULL,
  `name` text NOT NULL,
  `email` varchar(200) NOT NULL,
  `contact` varchar(20) NOT NULL,
  `address` text NOT NULL,
  `cover_img` text NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

```
Sql> SELECT * FROM `system_settings`
```

id	name	email	contact	address	cover_img
1	Developed by Eshan & Niloy	info@sample.com	0155556666	Chattogram, Bangladesh	

Figure 8: system settings table.

Sample Code –

Code of HOME page:

```
<?php include('db_connect.php') ?>
<?php
$where = "";
if($_SESSION['login_type'] != 1)
  $where = " ";
?>

<!-- Info boxes -->
<?php if($_SESSION['login_type'] == 1): ?>
pg. 13
```

```

<div class="row">
  <div class="col-12 col-sm-6 col-md-4">
    <div class="small-box bg-light shadow-sm border">
      <div class="inner">
        <h3><?php echo $conn->query("SELECT * FROM branches")->num_rows; ?></h3>

        <p>Total Branches</p>
      </div>
      <div class="icon">
        <i class="fa fa-building"></i>
      </div>
    </div>
  </div>
  <div class="col-12 col-sm-6 col-md-4">
    <div class="small-box bg-light shadow-sm border">
      <div class="inner">
        <h3><?php echo $conn->query("SELECT * FROM parcels")->num_rows; ?></h3>

        <p>Total Parcels</p>
      </div>
      <div class="icon">
        <i class="fa fa-boxes"></i>
      </div>
    </div>
  </div>
  <div class="col-12 col-sm-6 col-md-4">
    <div class="small-box bg-light shadow-sm border">
      <div class="inner">
        <h3><?php echo $conn->query("SELECT * FROM users where type != 1")->num_rows; ?></h3>

        <p>Total Staff</p>
      </div>
      <div class="icon">
        <i class="fa fa-users"></i>
      </div>
    </div>
  </div>
</div>
<hr>
<?php
    $status_arr = array("Item Accepted by Courier","Collected","Shipped","In-Transit","Arrived At Destination","Out for Delivery","Ready to Pickup","Delivered","Picked-up","Unsuccessfull Delivery Attempt");
    foreach($status_arr as $k => $v):
      ?>
    <div class="col-12 col-sm-6 col-md-4">
      <div class="small-box bg-light shadow-sm border">
        <div class="inner">

```

```

        <h3><?php echo $conn->query("SELECT * FROM parcels where status = {$k} ")
        >num_rows; ?></h3>

```

```

        <p><?php echo $v ?></p>
    </div>
    <div class="icon">
        <i class="fa fa-boxes"></i>
    </div>
</div>
</div>
<?php endforeach; ?>
</div>

```

```

<?php else: ?>
    <div class="col-12">
        <div class="card">
            <div class="card-body">
                Welcome <?php echo $_SESSION['login_name'] ?>!
            </div>
        </div>
    </div>
</div>

<?php endif; ?>

```

Code of HOME page:

```

<?php
$conn = mysqli_connect("localhost", "root", "admin12", "courier_m");

if (!$conn) {
    die("Connection failed!");
}

```

Website Screenshot –

LOGO:



Figure 9: Logo.

Home Page:

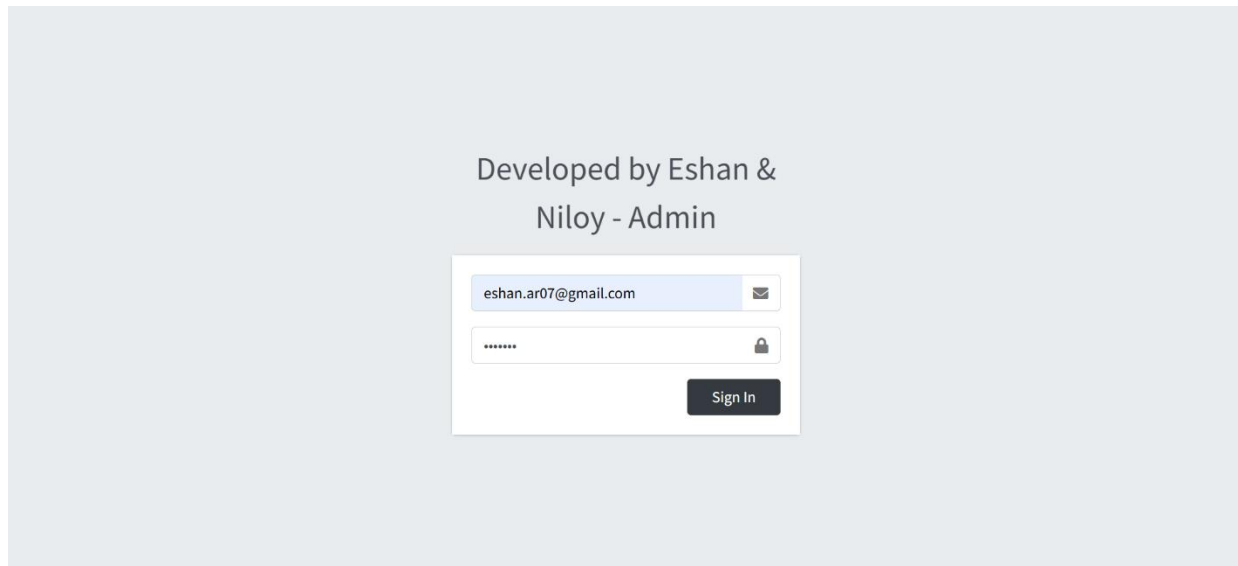


Figure 10: Log in page.

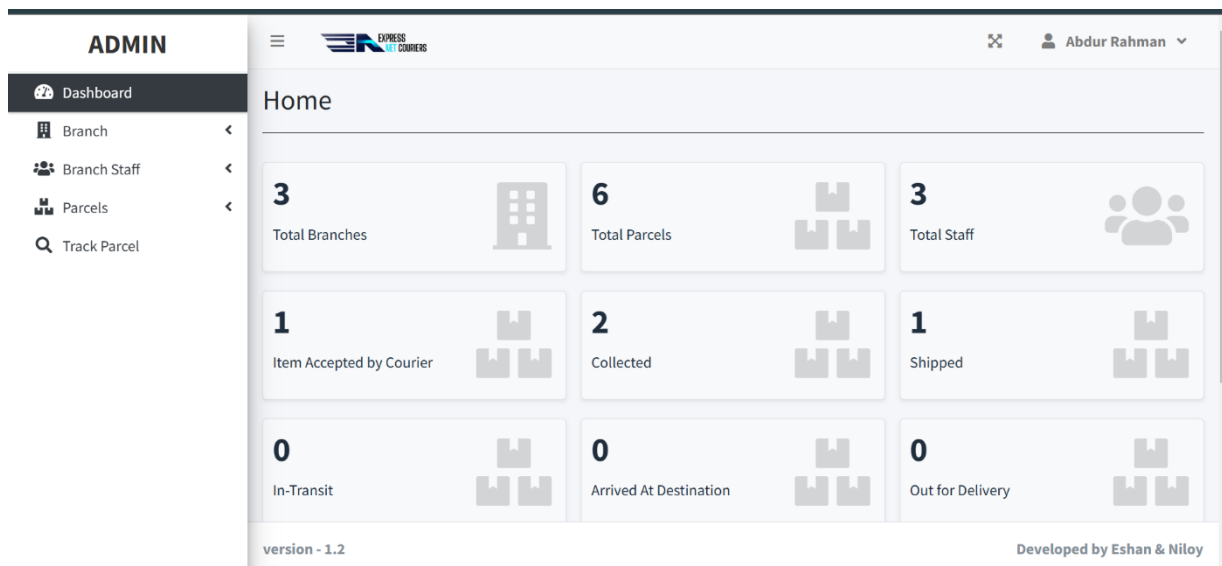


Figure 11: Admin page after login.

ADMIN

- Dashboard
- Branch**
 - Add New
 - List
- Branch Staff
- Parcels
- Track Parcel

New Branch

Street/Building

City

State

Zip Code/ Postal Code

Country

Contact #

Save **Cancel**

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Figure 12: Admin page adding branch.

ADMIN

- Dashboard
- Branch**
 - Add New
 - List
- Branch Staff
- Parcels
- Track Parcel

Branch List

[+ Add New](#)

Show 10 entries Search:

#	Branch Code	Street/Building/Brgy.	City/State/Zip	Country	Contact #	Action
1	ct003	Agrabad	Chittagong, Chittagong, 4100	Bangladesh	+8801122334455	Edit Delete
2	dh002	Lokkhipur	Lakkipur, Dhaka, 1212	Bangladesh	+880987654321	Edit Delete
3	ch001	Mansurabad	Chittagong, Chittagong, 4000	Bangladesh	+880123456789	Edit Delete

Showing 1 to 3 of 3 entries

Previous **1** Next

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Figure 5: Added branch list.

ADMIN

- Dashboard
- Branch
- Branch Staff
 - Add New
 - List
- Parcels
- Track Parcel

EXPRESS COURIERS

Abdur Rahman

New Staff

First Name

Last Name

Branch

Please select here

Email

Password

Save

Cancel

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Figure 14: Staff management for admin.

ADMIN

- Dashboard
- Branch
- Branch Staff
- Parcels
 - Add New
 - List All
 - Item Accepted
 - by Courier
 - Collected
 - Shipped
 - In-Transit
 - Arrived At
 - Destination
 - Out for Delivery
 - Ready to Pickup
 - Delivered
 - Picked-up
 - Unsuccessfull
 - Delivery Attempt
- Track Parcel

EXPRESS COURIERS

Abdur Rahman

New Parcel

Sender Information

Recipient Information

Name

Address

Contact #

Type

Pickup

Deliver = Deliver to Recipient Address , Pickup = Pickup to nearest Branch

Pickup Branch

Please select here

Parcel Information

Weight	Height	Length	Width	Price	
Total				0.00	

Add Item

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Figure 15: Parcel management for admin.

ADMIN

Dashboard

Branch

Branch Staff

Parcels

Add New

List All

Item Accepted

by Courier

Collected

Shipped

In-Transit

Arrived At

Destination

Out for Delivery

Ready to Pickup

Delivered

Picked-up

Unsuccessfull

Delivery Attempt

Track Parcel

Parcel List

Show 10 entries

Search:

+ Add New

#	Reference Number	Sender Name	Recipient Name	Status	Action
1	505604168988	Nahid	Niloy	Collected	
2	897856905844	Safin	Eshan	Unsuccessful Delivery Attempt	
3	514912669061	Tasrik	Raihan	Item Accepted by Courier	
4	983186540795	Raihan	Tasrik	Shipped	
5	117967400213	Niloy	Nahid	Collected	
6	201406231415	Eshan	Niloy	Delivered	

Showing 1 to 6 of 6 entries

Previous

1

Next

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Figure 16: List of parcel edits from Admin panel.

ADMIN

Dashboard

Branch

Branch Staff

Parcels

Add New

List All

Item Accepted

by Courier

Collected

Shipped

In-Transit

Arrived At

Destination

Out for Delivery

Ready to Pickup

Delivered

Picked-up

Unsuccessfull

Delivery Attempt

Track Parcel

Parcel's Details

Tracking Number: 505604168988

Sender Information

Name: Nahid

Address: Uttara, Dhaka

Contact: +8806677889900

Recipient Information

Name: Niloy

Address: Chandgaon, Chittagong

Contact: +8804433221100

Parcel Details

Weight: 22kg

Width: 13in

Height: 13in

length: 16in

Price: 2,100.00

Type: Deliver to Recipient

Branch Accepted the Parcel: Mansurabad, Chittagong, Chittagong, 4000, Bangladesh

Status: Collected

Update Status

Close

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Figure 17: Information of a single parcel.

ADMIN

Dashboard

Branch

Branch Staff

Parcels

Track Parcel

EXPRESS COURIERS

Abdur Rahman

Edit Parcel

Sender Information

Name

Nahid

Address

Uttara, Dhaka

Contact #

+8806677889900

Recipient Information

Name

Niloy

Address

Chandgaon, Chittagong

Contact #

+8804433221100

Type

Deliver

Deliver = Deliver to Recipient Address , Pickup = Pickup to nearest Branch

Parcel Information

Weight	Height	Length	Width	Price
22kg	13in	16in	13in	2100

Save

Cancel

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Figure 18: Edit a parcel info.

STAFF

Dashboard

Parcels

Track Parcel

EXPRESS COURIERS

Md

Home

Welcome Md S Raihan!

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Figure 19: Staff login page.

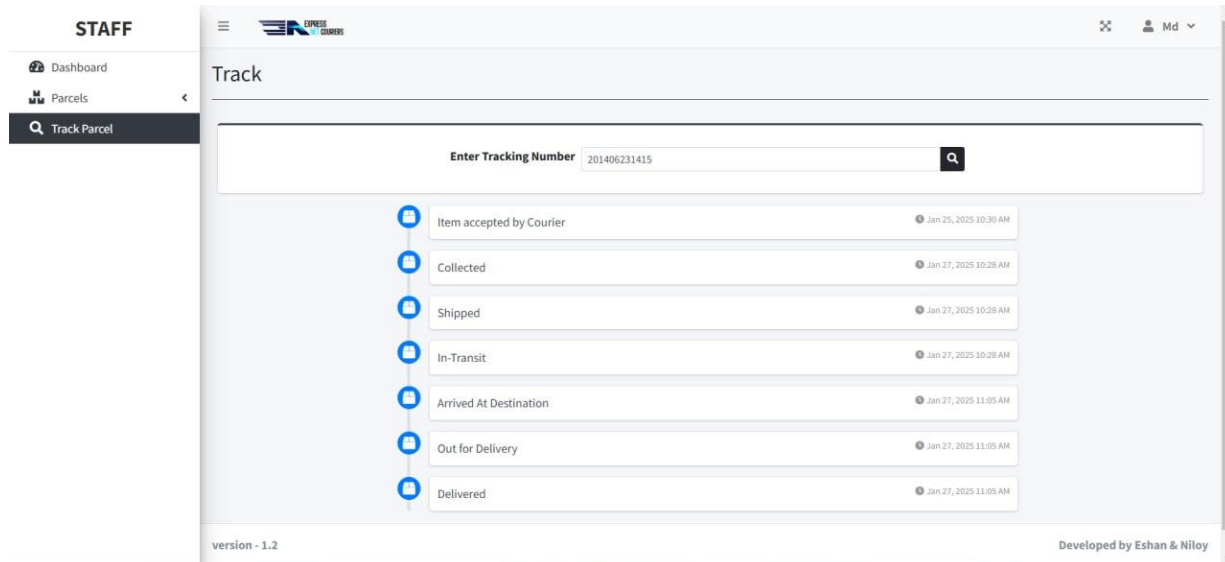


Figure 20: tracking using Reference number.

6. Conclusion

The goal of the Courier Management System (HMS) project is to computerize courier firm operations. The program meets all the needs of a typical courier system and can store client-provided cargo information easily and effectively. It can also provide regular updates on the courier location's status provides prescription details, including the status, and sorts the couriers by date. The staff may more easily check the courier status online at any time and from any location thanks to the website's current design and layout.