



Department of Computer Science and Engineering

Software Engineering Project Report on  
“Web-Based Billing System”

Group-5

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## Abstract:

This Web-based Billing Software (WBS) tool allows company owners to set up online bill management, consumers to read bills, and owners to save or download invoices for new businesses. It is developed on a network of department stores around the country.

In addition, the developer is creating an online billing webpage to handle invoices in the system and to assist clients in creating, updating, and calculating bills/invoices without having to manually list them. This software system will rely only on the internet to provide a user-friendly environment for both owners and customers.

## Introduction:

The main objective of this project is to make Billing management much easier for Business Enterprises. In this project, we have developed a “Web-based Billing Software” which is an application to automate the process of billing and managing a departmental store, which would be responsive by using HTML, CSS, Bootstrap, and

JavaScript as front end tools and the background is managed by a database (MySQL), PHP, and phpMyAdmin.

This project includes several modules such as the register/login module, the admin module, the bill management module, and the report generation & giveaway module. This software allows company owners to set up an online bill management system, consumers to read bills, and owners to save or download invoices for new businesses. It is developed on a network of department stores around the country. It also assists clients in creating, updating, and calculating bills/invoices without manually listing them.

Also, this application leads to a secure reliable, error-free, and fast management system for maintaining bills/invoices or computing whole bill computations. This also maintains computerized records of data and this data can be stored for a certain period and provides summary reports to owners monthly or weekly & yearly with easy accessing.

## Literature Review:

### **i. Problem:**

This project is an application to automate the process of billing and managing a Departmental store.

### **ii. Understand the Root Causes:**

Existing systems include a lot of paperwork and require a lot of manual labour; this may be remedied by automating the process with a web-based GUI.

### **iii. Identify the Stakeholder and Users:**

Stakeholders - admin, developers, target audience, funders, and clients.

Users - Businessmen, Enterprises, Shopkeepers, Vendors, Govt, and officers.

### **iv. Identifying the constraints to be imposed on the solution:**

- a. Customers without Internet Access.
- b. Information Privacy.
- c. not cost-effective for small scale business owners.

## System Requirements:

S.No	Tools/Technology Needed	Description and Uses	Type
1	HTML5	Appearance of website	Front-end Software
2	CSS3	Appearance of website	Front-end Software
3	JavaScript	Adding interactive user behavior to web pages	Front-end Software
4	Bootstrap	Front-end framework used for	Front-end

		UI	Software
5	PHP	Server-side programming and interactive with phpMyAdmin	Back-end Software
6	MySQL	For the purpose of a web database and logging application	Database Software
7	phpMyAdmin	Management of databases, tables, indexes, permissions	Database Software
8	Heroku	A container-based cloud Platform as a Service to deploy, manage, scale apps	Database Software
9	Visual Studio Code	a code editor redefined, optimized for building, debugging web apps	Desktop Software
10	Chrome	a cross-platform web browser	Application
11	Windows Software	an operating system for building apps	OS
12	PC/Laptop	Intel-based processor-run computer system, which have keyboard and mouse as input devices.	Hardware

## Proposed Scheme:

- a. Generating and Managing Invoices in a matter of few seconds.
- b. Maintain all the products with their shorthand notation.
- c. Provides summary reports to the owner monthly or weekly and yearly.
- d. Provides a convenient solution to the billing pattern.
- e. Make an easy to use environment for owners and customers.
- f. Secured User Authentication and Validation.
- g. User Giveaway generator.

# Results/Screenshots:

## User Signup/Login:

```

signup.php > ...
<form method="post" action="" class="login">
  <header>SIGNUP</header>
  <div class="field">
    <span class="fa fa-user"></span>
    <input type="text" name="name" placeholder="Store Name" required>
  </div>
  <div class="field">
    <span class="fa fa-envelope"></span>
    <input type="email" name="email" placeholder="Email" required>
  </div>
  <div class="field">
    <span class="fa fa-phone"></span>
    <input type="phone" name="mob" placeholder="Mobile No." required>
  </div>
  <div class="field">
    <span class="fa fa-lock"></span>
    <input type="password" name="pass" placeholder="Password" required>
  </div>
  <div class="field">
    <span class="fa fa-vcard-o"></span>
    <input type="text" name="gst" placeholder="GSTIN / UIN" >
  </div>
  <input type="submit" class="submit" name="submit" value="CREATE ACCOUNT">

  <span class="login-form-copy">Already have an account? <a href="login.php" class="login-form__sign-up">Login</a></span>
</form>
<?php
if ($_SERVER["REQUEST_METHOD"] == "POST")
{
    $name = $_POST['name'];
    $email = $_POST['email'];
    $mobile = $_POST['mob'];
    $pass = $_POST['pass'];
    $gst = $_POST['gst'];
    $query = "SELECT * FROM details WHERE email='$email'";
    $result = mysqli_query($conn, $query) or die(mysqli_error($conn));
    $num = mysqli_num_rows($result);
    if ($num != 0) {
        echo '<script>alert("Email Already exists")</script>';
    } else {
        $sql = "INSERT INTO details(name,email,mobile,password,gst) VALUES ('$name','$email','$mobile','$pass','$gst')";
        $result = mysqli_query($conn, $sql);
        header('location: login.html');
    }
}

```

```

login.php > ...
1 <form method="post" action="" class="login">
2 <header>LOGIN</header>
3 <div class="field">
4   <span class="fa fa-user"></span>
5   <input type="email" name="email" placeholder="Email ID">
6 </div>
7 <div class="field">
8   <span class="fa fa-lock"></span>
9   <input type="password" name="pass" placeholder="Password">
10 </div>
11 <div class="forgot-password">
12   <a href="#">Forgot password?</a>
13 </div>
14 <input type="submit" class="submit" value="LOGIN">
15 <span class="login-form-copy">Don't have an account? <a href="signup.php" class="login-form__sign-up">Sign up</a></span>
16 </form>
17 <?php
18 if ($_SERVER["REQUEST_METHOD"] == "POST")
19 {
20     $email = $_POST['email'];
21     $pass = $_POST['pass'];
22     $query = "SELECT * FROM details WHERE email='$email' AND password='$pass'";
23     $result = mysqli_query($conn, $query) or die(mysqli_error($conn));
24     $num = mysqli_num_rows($result);
25     if ($num == 0) {
26         echo '<script>alert("Invalid Credentials")</script>';
27     } else {
28         $row = mysqli_fetch_array($result);
29         $_SESSION['email'] = $row['email'];
30         $_SESSION['user_id'] = $row['id'];
31         $_SESSION['name'] = $row['name'];
32         header('location: index.php');
33     }
34 }
35 >

```

```
logout.php
1 <?php
2     require("connect.php");
3     session_unset();
4     session_destroy();
5     header('location: login.php');
6 ?>
```

Output:

Homepage:

```
<!-- Vertical navbar -->
<div class="vertical-nav bg-white" id="sidebar">
  <div class="py-4 px-3 mb-4 bg-light">
    <div class="media d-flex align-items-center">
      
      <div class="media-body">
        <h4 class="m-0"><?php echo $_SESSION['name']; ?></h4>
      </div>
    </div>
  </div>
</div>

<ul class="nav flex-column bg-white mb-0">
  <li class="nav-item">
    <a href="index.php" class="nav-link text-dark">
      <i class="fa fa-home mr-3 text-dark fa-fw"></i>
      Home
    </a>
  </li>
</ul>
<br>
```

```

<p class="text-dark font-weight-bold text-uppercase px-3 small pb-4 mb-0">Operations</p>
<ul class="nav flex-column bg-white mb-0">
  <li class="nav-item">
    <a href="createbill.php" class="nav-link text-dark bg-light">
      <i class="fa fa-pencil-square-o mr-3 text-dark fa-fw"></i>
      Create Bill
    </a>
  </li>
  <li class="nav-item">
    <a href="managebill.php" class="nav-link text-dark">
      <i class="fa fa-bar-chart mr-3 text-dark fa-fw"></i>
      Manage Bill
    </a>
  </li>
  <li class="nav-item">
    <a href="generatereport.php" class="nav-link text-dark">
      <i class="fa fa-window-restore mr-3 text-dark fa-fw"></i>
      Generate Report
    </a>
  </li>
  <li class="nav-item">
    <a href="productshorthand.php" class="nav-link text-dark">
      <i class="fa fa-th-list mr-3 text-dark fa-fw"></i>
      Product Shorthand
    </a>
  </li>
  <li class="nav-item">
    <a href="giveawaygenerator.php" class="nav-link text-dark">
      <i class="fa fa-gift mr-3 text-dark fa-fw"></i>
      Giveaway Generator
    </a>
  </li>
</ul>

<div class="mt-5 text-center">
  <button type="button" class="btn btn-dark"><a href="logout.php" style="color:white;text-decoration: none;">Logout</a></button>

```

Output:

Hydra

Home

OPERATIONS

✔
Create Bill

|
Manage Bill

📄
Generate Report

☰
Product Shorthand

🎁
Giveaway Generator

Logout

≡ MENU

## WEB BASED BILLING SOFTWARE

This Web-based Billing Software (WBS) tool allows organizations to set up online bill management, consumers to read bills, and owners to save or download invoices for new businesses. In addition, the developer is creating an online billing webpage to handle invoices in the system and to assist clients in creating, updating, and calculating bills/invoices without having to manually list them.

This software system will rely only on the internet to provide a user-friendly environment for both owners and customers. This solution is designed for Businessmen, Enterprises, Shopkeepers, Vendors, and Government Officers who don't want to spend time manually maintaining bills/invoices or computing whole bill computations.



### Create Bill:

```
<?php
if (isset($_POST['addbill']))
{
    $userid=$_SESSION['user_id'];
    $billid = $_SESSION['billno'];
    $mode=$_POST['mode'];
    $_SESSION['mode']=$mode;

    $cust_name=$_POST['name'];
    $_SESSION['cust_name']=$cust_name;

    $cust_addr=$_POST['addr'];
    $_SESSION['cust_addr']=$cust_addr;

    $cust_mob=$_POST['mob'];
    $_SESSION['cust_mob']=$cust_mob;

    $cust_email=$_POST['email'];
    $_SESSION['cust_email']=$cust_email;


    $prod_code=$_POST['pcode'];
    $prod_quantity=$_POST['quantity'];
    $prod_price=$_POST['price'];
    $query = "INSERT INTO bills(user_id,bill_id,mode,cust_name,cust_addr,cust_mob,cust_email,prod_code,prod_quantity,prod_price) VALUES ('$userid','$billid','$mode','$cust_name','$cust_addr','$cust_mob','$cust_email','$prod_code','$prod_quantity','$prod_price')";
    $result = mysqli_query($conn, $query)or die(mysqli_error($conn));
    echo("<meta http-equiv='refresh' content='1'>");
}
$user=$_SESSION['user_id'];
$sql = "SELECT * FROM bills WHERE user_id='$user' AND bill_id='$val1'";
$result = mysqli_query($conn, $sql);
$sql1="SELECT SUM(prod_quantity*prod_price) AS TOTAL FROM bills WHERE user_id='$user' AND bill_id='$val1'";
$result1=mysqli_query($conn, $sql1);
$row1 = mysqli_fetch_assoc($result1);
echo "<div class='container-fluid'><hr style='border-top: 1px dashed rgb(255, 255, 255);'><center><table class='table'><tr><th>ID</th><th>Item Name</th><th>Quantity</th><th>Price</th><th>Total</th></tr><tbody><tr><td>1</td><td>Item Name</td><td>1</td><td>100</td><td>100</td></tr></tbody></table></div>";
while($row = mysqli_fetch_assoc($result))
{
    echo "<tr><td>". $count. "</td><td>". $row['prod_code']. "</td><td>". $row['prod_quantity']. "</td><td>". $row['prod_price']. "</td><td>". $row['prod_price'] * $row['prod_quantity']. "</td></tr>";
    $count++;
}
echo "<tr><td></td><td></td><td></td><td></td><td><b>Total: RS ". $row1['TOTAL']. "</b></td></tr>";
echo "</table><center></div>";
?>
```

```

$prod_code=$POST['pcode'];
$prod_quantity=$POST['quantity'];
$prod_price=$POST['price'];
$query = "INSERT INTO bills(user_id,bill_id,mode,cust_name,cust_addr,cust_mob,cust_email,prod_code,prod_quantity,prod_price) VALUES ('$userid','$billid','$mode','$cust_name','$cust_addr','$cust_mob','$cust_email','$prod_code','$prod_quantity','$prod_price')";
$result = mysqli_query($conn, $query) or die(mysqli_error($conn));
echo("<meta http-equiv='refresh' content='1'>");
}
$user=$SESSION['user_id'];
$sql = "SELECT * FROM bills WHERE user_id='$user' AND bill_id='$vall'";
$result = mysqli_query($conn, $sql);
$sql1="SELECT SUM(prod_quantity*prod_price) AS TOTAL FROM bills WHERE user_id='$user' AND bill_id='$vall'";
$result1=mysqli_query($conn, $sql1);
$row1 = mysqli_fetch_assoc($result1);
echo "<div class='container-fluid'><hr style='border-top: 1px dashed rgb(255, 255, 255);'><center><table class='table'><tr><th>ID</th><th>Item Name</th><th>Quantity</th><th>Price</th><th>Total</th></tr><tbody><tr><td>1</td><td>Bills</td><td>1</td><td>1</td><td>1</td></tr></tbody></table></div>";
}
}
?>
</div> <br>
<div style="display: flex; justify-content:center" class="text-center">
    <form action="savebill.php" method="POST">
        <button type="submit" name="savebill" class="btn btn-light">Save Bill</button>
    </form>
</div>

```

Output:



Hydra

Home

OPERATIONS

- Create Bill
- Manage Bill
- Generate Report
- Product Shorthand
- Giveaway Generator

Logout

MENU

CREATE BILL

NEW BILL

Bill no.

164

Mode

UPI

Name

OLIV Store

Address

VITAP Campus

Mobile No.

7846301229

Email

oliv@gmail.com

Code

Item

Quantity

Price

Add

ID	Item Name	Quantity	Price	Amount
1	SILK	5	100	500
2	A70	3	29000	87000
3	PB	2	1000	2000
Total:				RS 89500

## Generate Report:

```

<?php
$con = mysqli_connect("localhost","root","","billing");

if(isset($_POST['from_date']) && isset($_POST['to_date']))
{
    $from_date = $_POST['from_date'];
    $_SESSION['from_date'] = $_POST['from_date'];
    $to_date = $_POST['to_date'];
    $_SESSION['to_date'] = $_POST['to_date'];
    $sesid=$_SESSION['user_id'];

    $query = "SELECT bill_id, mode, cust_name, cust_mob, prod_quantity, prod_price*prod_quantity AS totalcost FROM
bills WHERE user_id='$sesid' AND date BETWEEN '$from_date' AND '$to_date' GROUP BY cust_mob";
    $query_run = mysqli_query($con, $query);
    $countervar = 1;

    if(mysqli_num_rows($query_run) > 0)
    {
        foreach($query_run as $row)
        {
            <tr>
            <td><?php echo $countervar; ?></td>
            <td><?= $row['bill_id']; ?></td>
            <td><?= $row['mode']; ?></td>
            <td><?= $row['cust_name']; ?></td>
            <td><?= $row['cust_mob']; ?></td>
            <td><?= $row['prod_quantity']; ?></td>
            <td><?= $row['totalcost']; ?></td>
            </tr>
            <?php
            $countervar++;
        }
    }
    else
    {
        echo "<span class='text-white'>". "No Record Found". "</span> <br>";
    }
}

?>
</tbody>
</table> <br>
<div style="display: flex; justify-content:center" class="text-center">
    <form action="reportaspdf.php" method="POST">

```

```

reportaspdf.php > ...
1  <?php
2      include 'connect.php';
3      require_once('../tcpdf/tcpdf.php');
4      $obj_pdf = new TCPDF('P', PDF_UNIT, PDF_PAGE_FORMAT, true, 'UTF-8', false);
5      $obj_pdf->SetCreator(PDF_CREATOR);
6      $obj_pdf->SetTitle("YOUR BILL REPORT");
7      $obj_pdf->SetHeaderData('', '', PDF_HEADER_TITLE, PDF_HEADER_STRING);
8      $obj_pdf->setHeaderFont(array(PDF_FONT_NAME_MAIN, '', PDF_FONT_SIZE_MAIN));
9      $obj_pdf->setFooterFont(array(PDF_FONT_NAME_DATA, '', PDF_FONT_SIZE_DATA));
10     $obj_pdf->setDefaultMonospacedFont('helvetica');
11     $obj_pdf->SetFooterMargin(PDF_MARGIN_FOOTER);
12
13     $obj_pdf->SetMargins(PDF_MARGIN_LEFT,'0',PDF_MARGIN_RIGHT);
14     $obj_pdf->setPrintHeader(false);
15     $obj_pdf->setPrintFooter(false);
16     $obj_pdf->SetAutoPageBreak(TRUE, 10);
17     $obj_pdf->SetFont('helvetica', '', 12);
18     $obj_pdf->setPrintHeader(false);
19     $obj_pdf->AddPage();
20
21     $content = "";
22     $content .= "
23     <center><h3>Your Bill Report</h3></center><br><hr><br><br>
24     <table class='table text-white table-border'>
25         <thead>
26             <tr>
27                 <th>Id</th>
28                 <th>Bill Id</th>
29                 <th>Mode</th>
30                 <th>Name</th>
31                 <th>Mobile</th>
32                 <th>Quantity</th>
33                 <th>Total Cost</th>
34             </tr>
35         </thead>
36         <tbody>";

```

## Output:

Home

OPERATIONS

Create Bill

Manage Bill

Generate Report

Product Shorthand

Giveaway Generator

Logout

From Date

01/11/2021

To Date

15/11/2021

Click to Filter

Submit

Id	Bill Id	Mode	Customer Name	Customer Mobile	Quantity	Total Cost
1	150	UPI	Shivaji	6768221479	2	340
2	160	Cash	Sai	7676767676	2	40
3	164	UPI	OLIV Store	7846301229	5	500
4	163	UPI	Nikki	8309908635	2	58000
5	151	UPI	Prasad	8787878787	2	40
6	157	Cash	Gudi	9398589364	5	500
7	156	Cash	Raju	9785463211	4	80
8	154	Cash	Seshank	9898989898	2	40

Print

Download

YOUR BILL REPORT

1 / 1 | 100% | [Icons]

1

Your Bill Report

Id	Bill Id	Mode	Name	Mobile	Quantity	Total Cost
1	150	UPI	Shivaji	6768221479	2	340
2	160	Cash	Sai	7676767676	2	40
3	164	UPI	OLIV Store	7846301229	5	500
4	163	UPI	Nikki	8309908635	2	58000
5	151	UPI	Prasad	8787878787	2	40
6	157	Cash	Gudi	9398589364	5	500
7	156	Cash	Raju	9785463211	4	80
8	154	Cash	Seshank	9898989898	2	40


## Giveaway Generator:

```

<div class="form-group row d-flex justify-content-center">
  <div class="btn-toolbar mr-3 ml-4" role="toolbar" aria-label="Toolbar with button groups">
    <div class="btn-group" role="group" aria-label="First group">
      <button type="submit" name="submit" class="btn btn-light"><b>Generate</b></button>
    </div>
  </div>
</div>
</div>
</div>
</div>
</form>
<?php
if ($_SERVER["REQUEST_METHOD"] == "POST")
{
    $id=$_SESSION['user_id'];
    $n=$_POST['rec'];
    $sql = "SELECT DISTINCT(cust_name),cust_mob,cust_email FROM bills WHERE user_id='$id' ORDER BY RAND() LIMIT ".$n;
    $result = mysqli_query($conn, $sql);
    echo "<div class='container'><center><table class='table'><tr>
    <th>ID</th><th>Name</th><th>Mobile</th><th>Email</th></tr>";
        $count=1;
        while($row = mysqli_fetch_assoc($result))
        {
            echo "<tr><td>".$count."</td><td>".$row['cust_name']."</td><td>".$row['cust_mob'].
            "</td><td>".$row['cust_email']."</td></tr>";
            $count++;
        }
        echo "</table><center></div>";
    }
?>
</div>

```

## Output:



Hydra

- Home
- OPERATIONS
  - Create Bill
  - Manage Bill
  - Generate Report
  - Product Shorthand
  - Giveaway Generator
- Logout

≡ MENU

GIVEAWAY GENERATOR

Number of records

2

Generate


ID	Name	Mobile	Email
1	Prasad	8787878787	prasad@gmail.com
2	Harshith	8787878787	k@gmail.com

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## Product Shorthand:

```
<div class="col-sm-5">
  <?php
  $value=$_SESSION['user_id'];
  $sql="SELECT * FROM products WHERE user_id='$value'";
  $result = mysqli_query($conn,$sql);
  $num_rows= mysqli_num_rows($result);
  if ($num_rows>= 1) {
    echo "<center><table class='table'><tr><th>ID</th><th>Code</th><th>Item Name</th><th>Price</th></tr>";
    $count=1;
    while($num_rows!=0)
    {
      $row = mysqli_fetch_assoc($result);
      echo "<tr><td>".$count."</td><td>".$row['code']."</td><td>".$row['prod_name']."</td><td>".$row['price']."</td></tr>";
      $num_rows--;
      $count++;
    }
    echo "</table><center>";
  }else{
    echo "<center><h3>Database is empty!!</h3></center>";
  }
  ?>
</div>
</div>
</div>
```

## Output:



Hydra

- Home
- OPERATIONS
  - Create Bill
  - Manage Bill
  - Generate Report
  - Product Shorthand
  - Giveaway Generator
- Logout

MENU

PRODUCT SHORTHAND

Product Code

NCS

Product Name

Nachos

Product Price

30

Add Record

ID	Code	Item Name	Price
1	SILK	Dairy Milk	100
2	A70	Samsung A70	29000
3	PB	Powerbank	1000
4	NCS	Nachos	30

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## Conclusion:

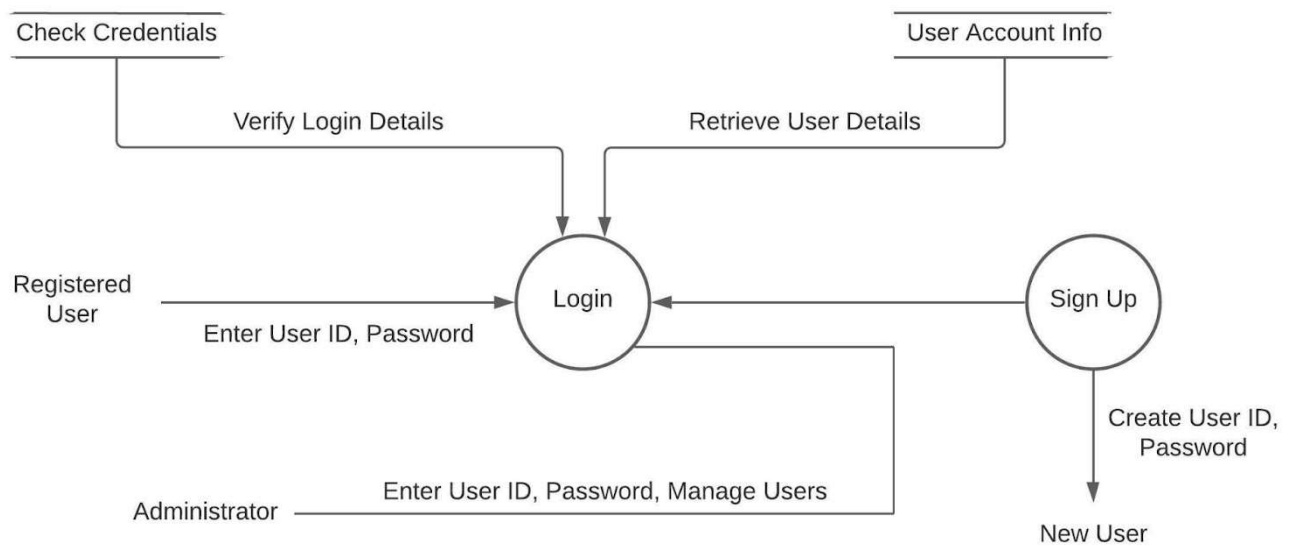
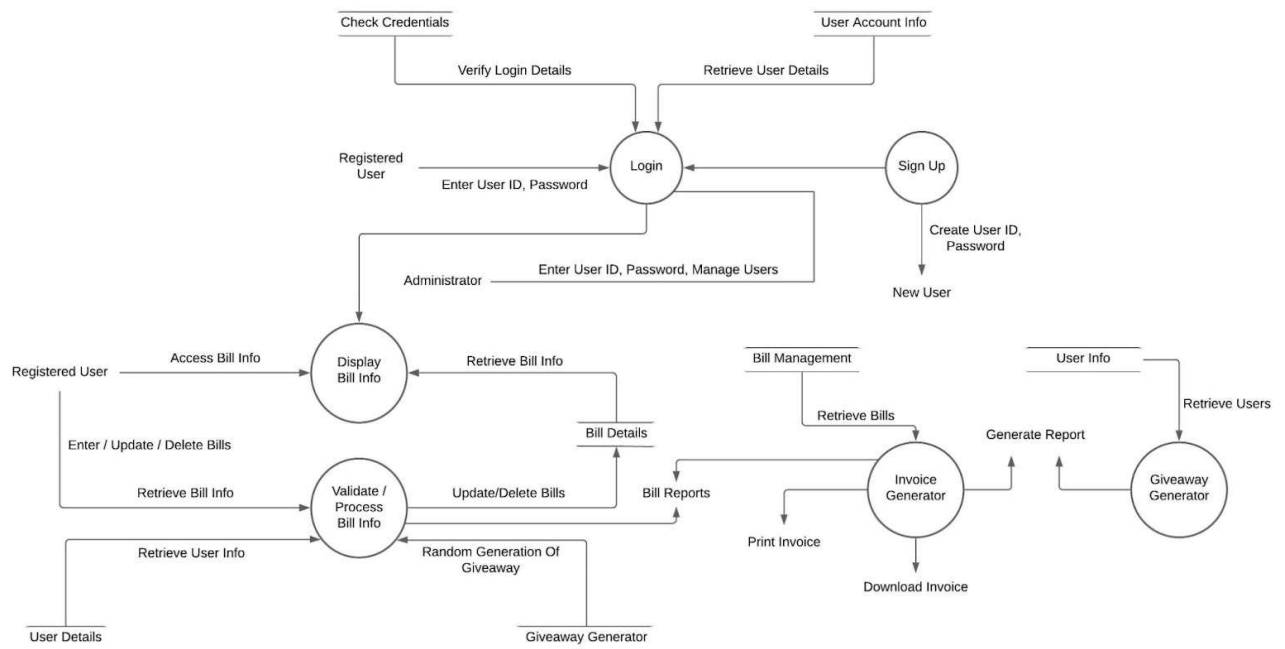
Through our Project, Users will be able to create, modify, generate, and delete bills. This project comes with the combination of Security and Cloud Mainintance for storing bills and retrieving the data whenever needed. This project helps the owner to store all the products and income data safe and secure by enabling the login method so that the website will have an idea of whether the user is an admin or not. One of the most interesting feature in this project is the giveaway generator which attracts the customers to visit the store again and again.

## References:

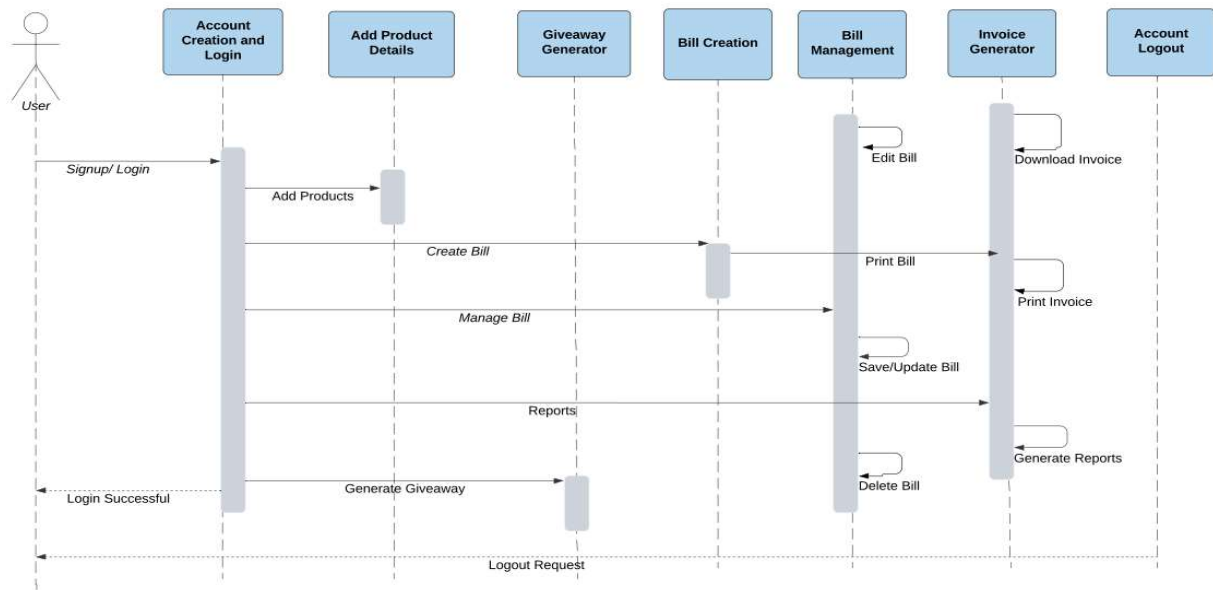
- [1] Software Engineering: A Practitioner's Approach by Roger S. Pressman.
- [2] Importance of billing software for small businesses.
- [3] W3Schools - PHP Tutorial.
- [4] techBriefers - How To Create PDF In PHP With TCPDF.



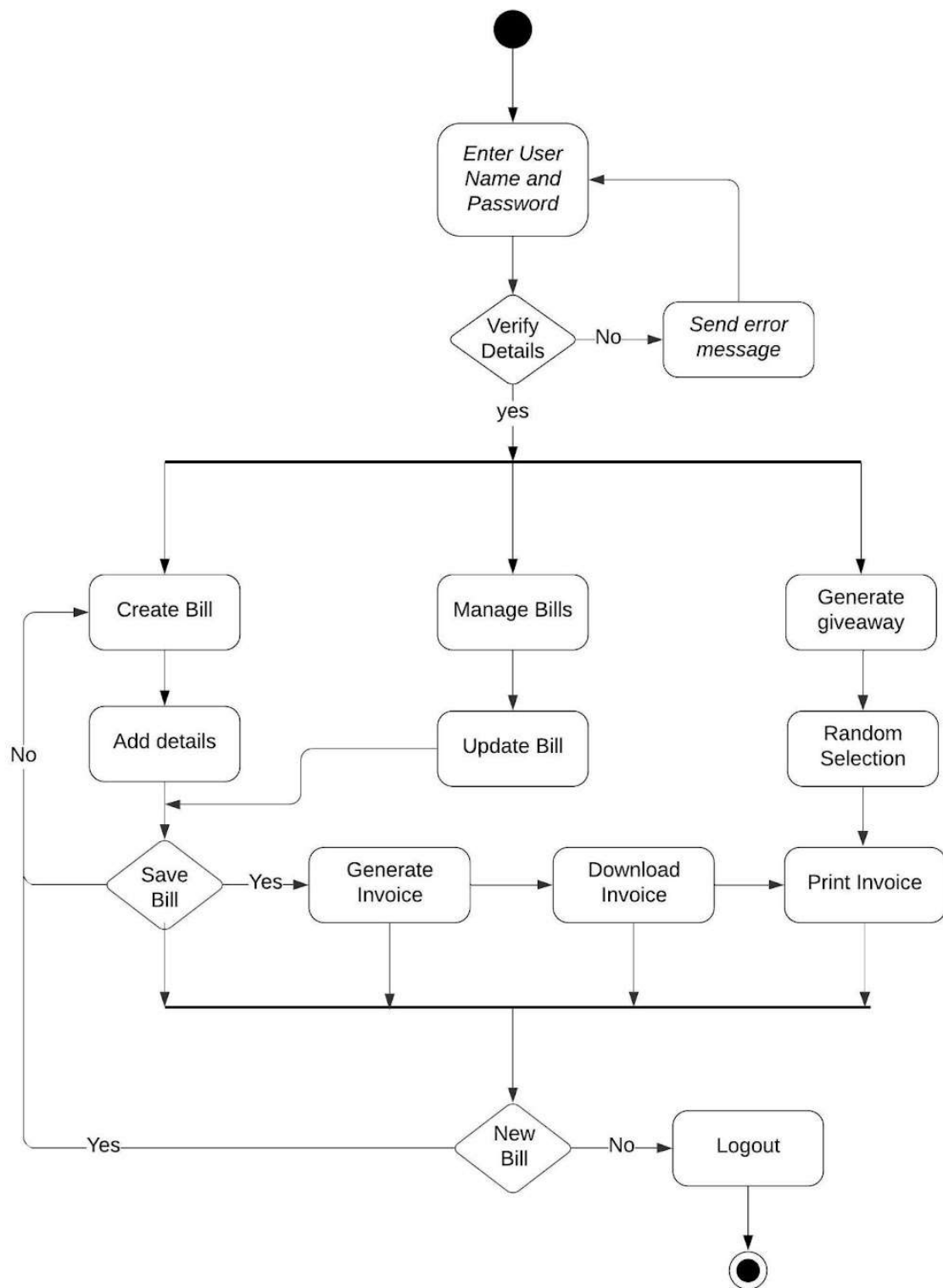
## Diagrams:



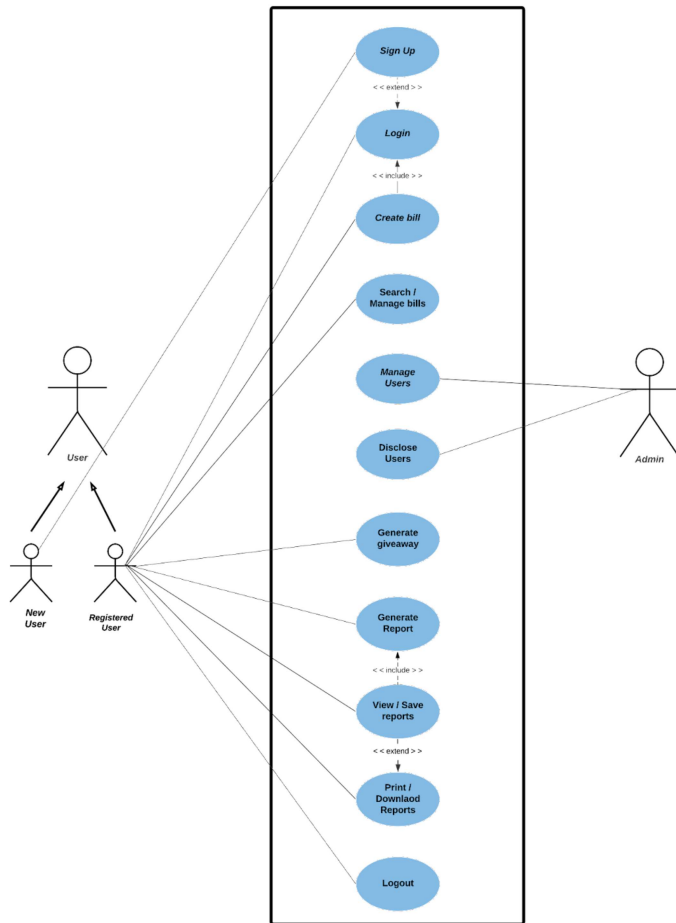
Login Module



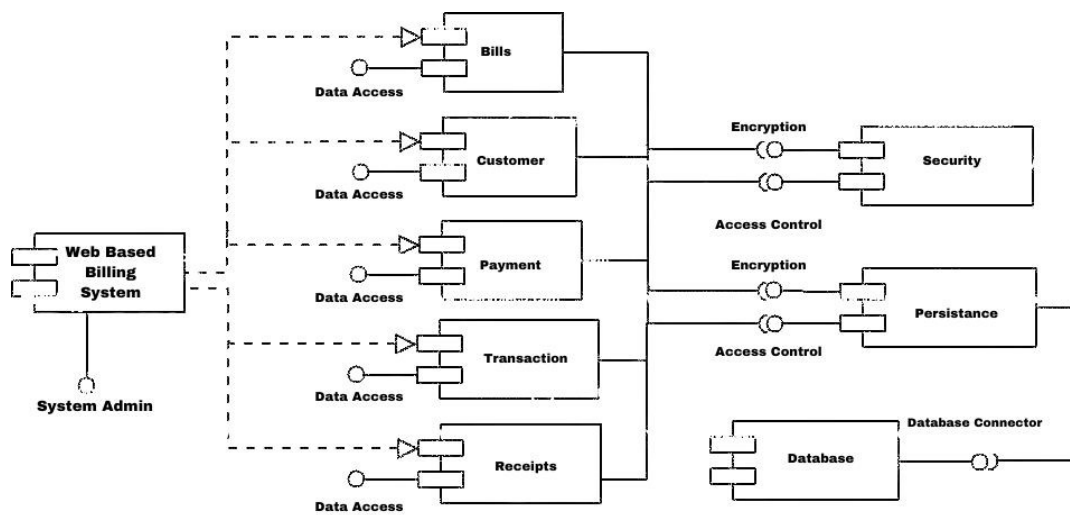
Sequence Diagram



Activity Diagram



USE CASE DIAGRAM



**DATA DICTIONARIES:**

Field Name	Data Type	Size of Display	Description	Example
User ID	INTEGER	10	Unique ID for user	1,2,3...
Bill ID	INTEGER	20	Unique ID for Bill	125,321,67,10 2...
Mode	VARCHAR	20	Mode of Payment	UPI/DEBIT CARD /CREDIT CARD...
Customer Name	VARCHAR	20	Name of the customer	Suresh, Ramesh...
Customer Address	VARCHAR	30	Address of the Customer	Ayyapan Society,Vuyyuru...
Customer Mobile	INTEGER	20	Mobile Number of the Customer	4332324242, 13234234,.....
Customer Email	VARCHAR	20	Email of the Customer	hai@hotmail.com,sayan@mail.com...
Product Code	INTEGER	10	Unique Code of the Product	P212432,P912 3466,.....
Product Quantity	INTEGER	10	No.of Items of the product	1,2,3,4....
Product Price	INTEGER	10	Price of the product	200,300,400 ....

Date	DATE	3	Date of the Billing	02/02/2022
User Name	VARCHAR	10	Username for logging in	ramesh12,sure sh32.....
Email	VARCHAR	20	Email for Sign Up	hai@hotmail.com,sayan@mail.com...
Mobile	VARCHAR	10	Mobile for Sign up	4332324242,13234234,.....
Password	VARCHAR	10	Password for the User	ramesh@12,suresh\$32,...

Component Diagram

