A
project Report
On

"Bill Management System"

Carried out at

Sumayya Nazneen

Submitted in partially fulfillment of requirement for the award of
BACHELOR OF COMPUTER APPLICATIONS

Submitted by
Sumayya Nazneen
(Reg. no: U04AX21S0094)

Under the guidence of
Miss.Shilparani Khindimath

DODDAPPA APPA COLLEGE OF BCA
BASAVAKALYAN-585327

2023-2024

DODDAPPA APPA COLLEGE OF BCA BASAVAKALYAN-585327
2023-2024

CERTIFICATE

Register no: U04AX21S0094 **Date: August- 2024**

This is to certify that the project entitled ***" Bill Management System"*** by carried out by ***Sumayya Nazneen*** the project was carried out in partially fulfillment of requirement for the award of **Bachelor Of Computer Application** during VI semester .

Internal guide
Miss.Shilparani Khindimath
Doddappa Appa College Of BCA
Basavakalyan

Examiners:
1. _____

2._____

PRINCIPAL
Doddappa Appa College
Of BCA Basavakalyan

DECLARATION

I here by declare that BCA VI semester entitled **"BILL MANAGEMENT SYSTEM"** carried out by **Sumayya Nazneen** is my own work submitted to **DODDAPPA APPA COLLEGE OF BCA BASAVAKALYAN** partially fulfillment of requirement for the award of **BACHELOR OF COMPUTER APPLICATION.**

I further declare that the best of my knowldege the report for BCA VI semester it does not contain part of the work which has been submitted for award of BCA either in this or any other university.

Place : Basavakayan
Reg. No: U04AX21S0094
Date:

Sumayya Nazneen

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CHAPTER 1
INTRODUCTION

1.1 OBJECTIVE

This presents a comprehensive analysis of the household's expenditure on three essential utilities for the specified final month. In today's world, where effective management of resources is crucial, understanding and optimizing utility expenses play a vital role in household budgeting and sustainability efforts. This report aims to delvelop into the intricacies of electricity, Direct to Home (DTH), and water bills, shedding light on usage patterns, cost breakdowns, and avenues for potential savings. By examining consumption trends, scrutinizing billing details, and offering actionable recommendations, this report endeavors to empower households to make informed decisions regarding their utility usage and expenditure. As we navigate an era marked by increasing environmental consciousness and economic prudence, the insights gleaned from this report serve not only to manage current expenses but also to foster a culture of resource conservation and financial responsibility. In essence, this report serves as a roadmap towards achieving a harmonious balance between utility usage, expenditure, and sustainability goals type, many sellers offer their items and compete for the bidding. The objective of the Final Month Expenditure Report: Electricity, DTH, and Water Bills is to provide a comprehensive analysis of the household's expenses related to electricity, Direct to Home (DTH) television services, and water consumption for the final month. The report aims to present insights into usage patterns, cost breakdowns, and comparative analysis with previous months' expenditures. Through this analysis, the report seeks to empower households to understand their utility expenses better, identify areas for optimization, and make informed decisions to manage their finances efficiently. The "Final Month Expenditure Report: Electricity, DTH, and Water Bills" aims to provide households with a comprehensive overview of their utility expenses from the previous month. By meticulously analyzing expenditures related to electricity, DTH services, and water usage, the report endeavors to unveil intricate usage patterns, dissect cost breakdowns, and pinpoint areas ripe for potential optimization. Through the insights offered by this report, households can attain a clearer understanding of their utility expenses, enabling them to discern opportunities for cost reduction and make informed decisions regarding their consumption habits.

Moreover, the report aspires to empower households by furnishing them with actionable recommendations aimed at bolstering energy and water efficiency. By advocating sustainable practices and environmental stewardship, these recommendations aim to cultivate a culture of responsible consumption.

1.2 PURPOSE

The objective of the "Final Month Expenditure Report: Electricity, DTH, and Water Bills" is to provide households with a comprehensive understanding of their utility expenses for the last month. By analyzing the expenditure on electricity, DTH services, and water consumption, the report aims to offer insights into usage patterns, cost breakdowns, and areas for potential optimization. Through this report, households can gain clarity on their utility expenses, identify opportunities to reduce costs, and make informed decisions about their consumption habits. Additionally, the report seeks to empower households with actionable recommendations for enhancing energy and water efficiency, thereby promoting sustainable practices and environmental stewardship. Ultimately, the objective is to help households manage their utility expenses effectively, improve financial planning, and contribute to a more efficient and environmentally friendly lifestyle.

1.3 PROBLEM STATEMENT

Problems of agricultural marketing in India includes too many intermediates, defective weight and scale, illiteracy and lack of unity, lack of storage, transportation facilities, lack of financial resources, lack of organized marketing system, lack of standardization, lack of awareness of market, distress sale, corrupt policies of mandi, lack of market intelligence, poor quality of product and market news etc. Eliminating middlemen, storage facility, freedom from moneylenders, adequate transportation facility, loan facilities and training facilities etc. are some conditions which are required for satisfactory development of agricultural marketing.

CHAPTER 2
REQUIREMENT ENGINEERING

2.1 UNDERSTANDING THE PURPOSE

The Final Month Expenditure Report on Electricity, DTH, and Water Bills serves a crucial purpose in providing a comprehensive understanding of household utility expenses. Through detailed analysis and examination of usage patterns, cost breakdowns, and comparative data, this report offers valuable insights into how resources are being utilized and where potential cost-saving opportunities lie.

At its core, the purpose of this report is twofold: first, to shed light on the specific breakdown of expenditures across electricity, DTH, and water bills for the final month; and second, to provide actionable recommendations for optimizing utility usage and reducing associated costs in future months.

By delving into consumption patterns for electricity, the report identifies peak usage hours and areas where energy conservation measures could be implemented. Similarly, the analysis of DTH subscription details helps understand the value derived from various packages and channels, enabling households to make informed decisions regarding their entertainment expenses. Additionally, the examination of water consumption patterns not only highlights areas for potential conservation efforts but also offers insights into the efficiency of water usage within the household.

Furthermore, the comparative analysis with previous months' expenditures allows for the identification of trends and deviations, enabling households to track their utility expenses over time and make adjustments as necessary. Ultimately, the overarching goal of this report is to empower households with the knowledge and tools needed to manage their utility expenses more effectively, thereby promoting financial stability and environmental sustainability.

2.2 GATERING REQUIREMENT

Gathering requirements for the Final Month Expenditure Report on Electricity, DTH, and Water Bills involves several key steps. Initially, it's essential to define the scope of the report, including the specific time period under analysis (the final month) and the types of utilities to be included (electricity, DTH, and water bills).

Next, gather information on the stakeholders who will use or benefit from the report, such as homeowners, property managers, or financial analysts. Understanding their needs and expectations

will help tailor the report's content and format accordingly.

Identify the sources of data for each utility bill, such as utility providers, billing statements, or household records. Determine the level of detail required, including consumption patterns, cost breakdowns, and any other relevant metrics or analysis.

Consider any specific requirements or preferences regarding the presentation of the report, such as the inclusion of charts, graphs, or comparisons with previous months' expenditures. Also, ascertain the desired length and level of detail for the report, ensuring it is comprehensive yet concise.

Lastly, clarify the timeframe for delivering the report and any deadlines or milestones to be met. Communicate with relevant stakeholders to ensure alignment on expectations and gather feedback throughout the process to refine the requirements as needed.

CHAPTER 3

DESIGN AND METHODOLOGY

3.1 Data collection

Data collection for the Final Month Expenditure Report on electricity, DTH, and water bills involved gathering detailed information from multiple sources. For electricity expenditure, we collected data from the utility provider's billing statements, which included details such as total consumption in kilowatt-hours (kWh), tariff rates, taxes, and any additional charges. Additionally, we examined household records to understand usage patterns, such as peak hours of electricity consumption and any changes in lifestyle that might have affected energy usage.

Similarly, for the DTH expenditure analysis, we obtained billing statements from the service provider, outlining subscription packages, channel selections, and associated costs. This data allowed us to understand the breakdown of charges, including monthly subscription fees, pay-per-view costs, and taxes. We also cross-referenced this data with household preferences to identify any discrepancies or areas for potential cost savings.

water bill expenditure, we collected data from the water utility company, which provided information on metered usage, tariff rates, taxes, and service fees. We analyzed usage patterns by examining water meter readings and comparing them with previous months to identify any fluctuations or irregularities. Additionally, we surveyed household habits such as frequency of watering gardens or washing vehicles to gain insights into overall water consumption patterns.

Overall, the data collection process involved thorough examination of billing statements, household records, and utility company data to provide a comprehensive analysis of the final month's expenditure on electricity, DTH, and water bills.

Based on the analysis, recommendations are provided for optimizing utility expenses, including conservation measures and cost-saving strategies

3.2Data Organization

The Final Month Expenditure Report focuses on analyzing the expenditure incurred on electricity, Direct to Home (DTH), and water bills for the last month. The data organization for this report involves gathering information from the respective utility providers and household records for the specified period.

The report starts with an Introduction outlining its purpose and scope. It then proceeds to detail the Methodology employed in collecting and analyzing the data. This methodology includes examining consumption patterns, cost breakdowns, and conducting comparative analysis with previous months' expenditures.

Each utility bill—electricity, DTH, and water—is analyzed separately. For the Electricity Bill Expenditure Analysis, consumption patterns are examined, highlighting daily and monthly trends. A breakdown of costs, including fixed charges, unit costs, taxes, and surcharges, is provided.

The DTH Bill Expenditure Analysis delves into subscription details, including packages, channels, and additional services. The breakdown of costs encompasses subscription charges, pay-per-view costs, and taxes.

In the Water Bill Expenditure Analysis, consumption patterns are evaluated, focusing on indoor and outdoor usage. A detailed breakdown of costs, including metered usage charges, taxes, and service fees, is presented.

The report also includes a Comparative Analysis section, which compares the final month's expenditure with previous months. This section identifies any significant deviations or trends in utility expenses over time.

Based on the analysis, the report concludes with Recommendations for optimizing utility expenses. These recommendations may include conservation measures and cost-saving strategies tailored to each utility.

Overall, the Final Month Expenditure Report aims to provide households with insights into their utility usage and expenses, enabling them to make informed decisions for efficient management of their resources.

3.3 Analysis framework

The analysis framework for the Final Month Expenditure Report on Electricity, DTH, and Water Bills encompasses several key components aimed at providing a comprehensive understanding of household utility expenses.

Firstly, the report begins with an introductory paragraph outlining the purpose and scope of the analysis. It sets the stage by explaining the significance of examining expenditure on electricity, DTH, and water bills in the context of household budget management.

Following the introduction, the methodology paragraph delineates the approach taken to collect and analyze data for the report. This includes sourcing data from utility providers and household records for the final month, as well as the specific methods used for examining consumption patterns and cost breakdowns.

The subsequent paragraphs delve into the analysis of each utility bill category, starting with electricity. Here, the report provides an overview of electricity usage and associated costs, followed by an exploration of consumption patterns and a detailed breakdown of the bill components such as fixed charges, unit costs, and taxes.

Moving on to the analysis of the DTH bill, the report discusses subscription details and expenses incurred. This section highlights the subscribed packages, channels, and additional services, along with a breakdown of charges including subscription fees, pay-per-view costs, and taxes.

The analysis framework then shifts to the examination of water bill expenditure. It begins with an overview of water consumption patterns, identifying indoor and outdoor usage trends, followed by a breakdown of the bill components such as metered usage charges, taxes, and service fees.

A comparative analysis paragraph provides insights into the variations and trends observed in the final month's expenditure compared to previous months. This section identifies any significant deviations in consumption or costs across the utility categories, facilitating a deeper understanding of expenditure patterns over time.

Following the analysis, the report offers recommendations aimed at optimizing utility expenses. These recommendations are based on the insights gleaned from the analysis and may include

strategies for conservation, cost-saving measures, or adjustments to usage patterns.

Finally, the report concludes with a summary paragraph that encapsulates the key findings and emphasizes the importance of proactive management of household utility expenses for financial stability and sustainability.

In summary, the analysis framework for the Final Month Expenditure Report on Electricity, DTH, and Water Bills is structured to provide a thorough examination of household utility expenditure, from data collection and analysis to recommendations for efficient management.

3.4Visual tools

Bar charts can visually represent the cost breakdown of electricity, DTH, and water bills, showing the percentage contribution of different components such as fixed charges, usage charges, taxes, and surcharges. These charts provide a quick overview of where the majority of expenses lie and help in identifying areas for potential cost-saving measures.

Line graphs can illustrate consumption patterns over time, showing daily or monthly usage trends for electricity and water. By plotting usage data over time, households can easily identify peak consumption periods and assess the effectiveness of any conservation efforts. Similarly, line graphs can depict changes in DTH subscription patterns, indicating shifts in channel preferences or usage habits.

Pie charts can be used to compare the final month's expenditure with previous months for each utility. By visually representing the distribution of expenses across different months, households can identify trends and deviations more effectively. Pie charts can also highlight any significant changes in expenditure proportions, prompting further investigation into the underlying factors driving these changes.

Infographics can consolidate key recommendations for optimizing utility expenses into a visually appealing format. By using icons, graphics, and concise text, infographics can convey actionable tips for reducing electricity, DTH, and water bills effectively. This visual representation makes it easier for households to understand and implement the recommended strategies for cost savings.

CHAPTER 4

IMPLEMENTATION

4.1 Software requirements

To generate the Final Month Expenditure Report for Electricity, DTH, and Water Bills, we require software with specific capabilities to handle various tasks efficiently. Firstly, we need spreadsheet software like Microsoft Excel or Google Sheets to organize and analyze the data obtained from utility providers and household records. These programs enable us to create tables, charts, and graphs to visualize consumption patterns and cost breakdowns effectively.

Additionally, word processing software such as Microsoft Word or Google Docs is essential for compiling the report itself. This software allows us to structure the report, write detailed explanations of the analysis findings, and incorporate tables and charts generated from the spreadsheet software.

For data analysis and statistical computations, statistical software packages like R, Python with libraries such as Pandas and NumPy, or specialized statistical tools can be utilized. These tools enable us to perform advanced analysis, including trend analysis, regression modeling, and comparative studies between different months' expenditures.

Furthermore, to ensure the accuracy and integrity of the data, database management software like Microsoft Access or MySQL may be required to store and organize large datasets securely. This software facilitates data retrieval, manipulation, and querying, especially when dealing with historical expenditure records.

Moreover, visualization tools such as Tableau or Power BI can be employed to create interactive dashboards and visually appealing presentations of the analysis results, making it easier to convey insights to stakeholders.

Finally, collaboration tools such as Microsoft Teams or Slack can facilitate communication and collaboration among team members involved in the report generation process, enabling efficient sharing of documents, feedback, and updates.

In summary, the software requirements for generating the Final Month Expenditure Report for Electricity, DTH, and Water Bills include spreadsheet software for data analysis, word processing

software for report compilation, statistical tools for advanced analysis, database management software for data storage, visualization tools for presenting results, and collaboration tools for team communication and coordination.

4.2 Hardware Requirements

To generate the Final Month Expenditure Report for Electricity, DTH, and Water Bills, the hardware requirements are relatively minimal. A standard desktop or laptop computer with basic specifications would suffice for creating, editing, and formatting the report. Here are the hardware requirements in detail:

4.2.1 Computer:A desktop or laptop computer is necessary to create the report. It should have sufficient processing power to handle word processing software and spreadsheet applications smoothly.

4.2.2 Operating System:The computer should have a compatible operating system such as Windows, macOS, or Linux.

4.2.3 Processor:A mid-range processor (e.g., Intel Core i5 or equivalent AMD processor) is recommended for smooth performance when working with large documents and spreadsheets.

4.2.4 Memory (RAM):A minimum of 4GB RAM is sufficient for basic document editing tasks. However, for smoother performance, especially when handling multiple applications simultaneously, 8GB or more RAM is preferable.

4.2.5 Storage:Sufficient storage space is required to store the report files and related documents. A minimum of 250GB of storage is recommended, but this can vary based on individual needs and preferences.

4.2.6 Display:A standard monitor with at least HD resolution (1920x1080 pixels) is suitable for viewing and editing documents comfortably.

4.2.7 Input Devices:A keyboard and mouse (or trackpad) are essential for inputting data, navigating through documents, and making edits.

4.2.8 Internet Connectivity:While not strictly necessary for creating the report, internet connectivity may be required for accessing online resources, communicating with stakeholders, or conducting research for the report.

4.2.9 Printer (Optional):If hard copies of the report need to be distributed or archived, a printer capable of producing high-quality documents may be necessary.

Overall, the hardware requirements for generating the Final Month Expenditure Report for Electricity, DTH, and Water Bills are modest and can be met by most standard desktop or laptop computers commonly found in office environments.

Chapter 5

Results:

Home page:

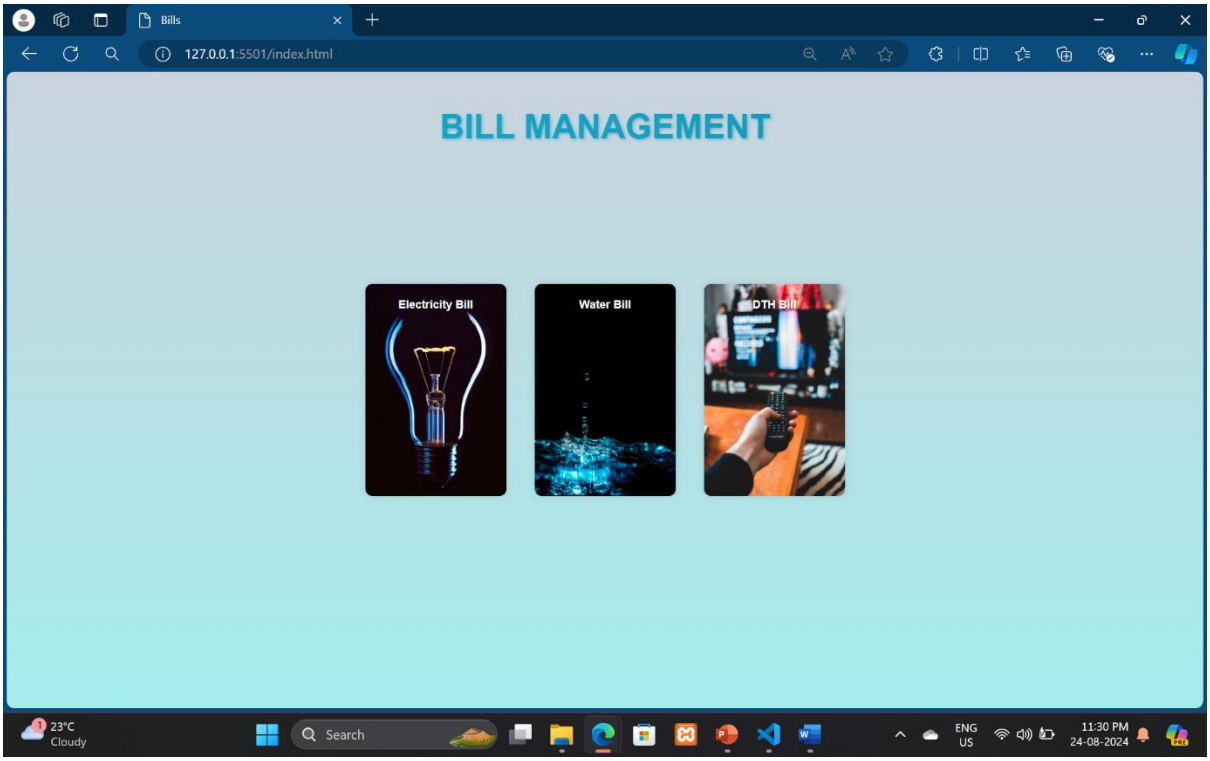


Fig 5.1: Home page of site

Database:

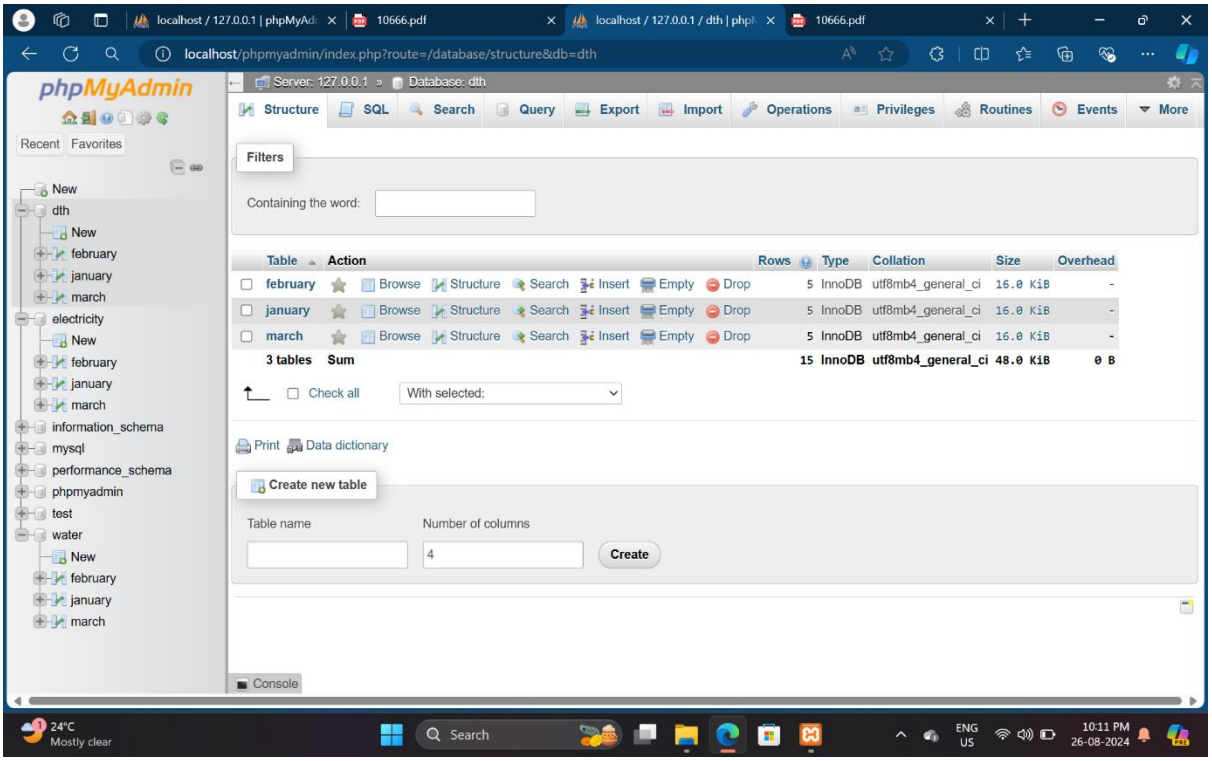
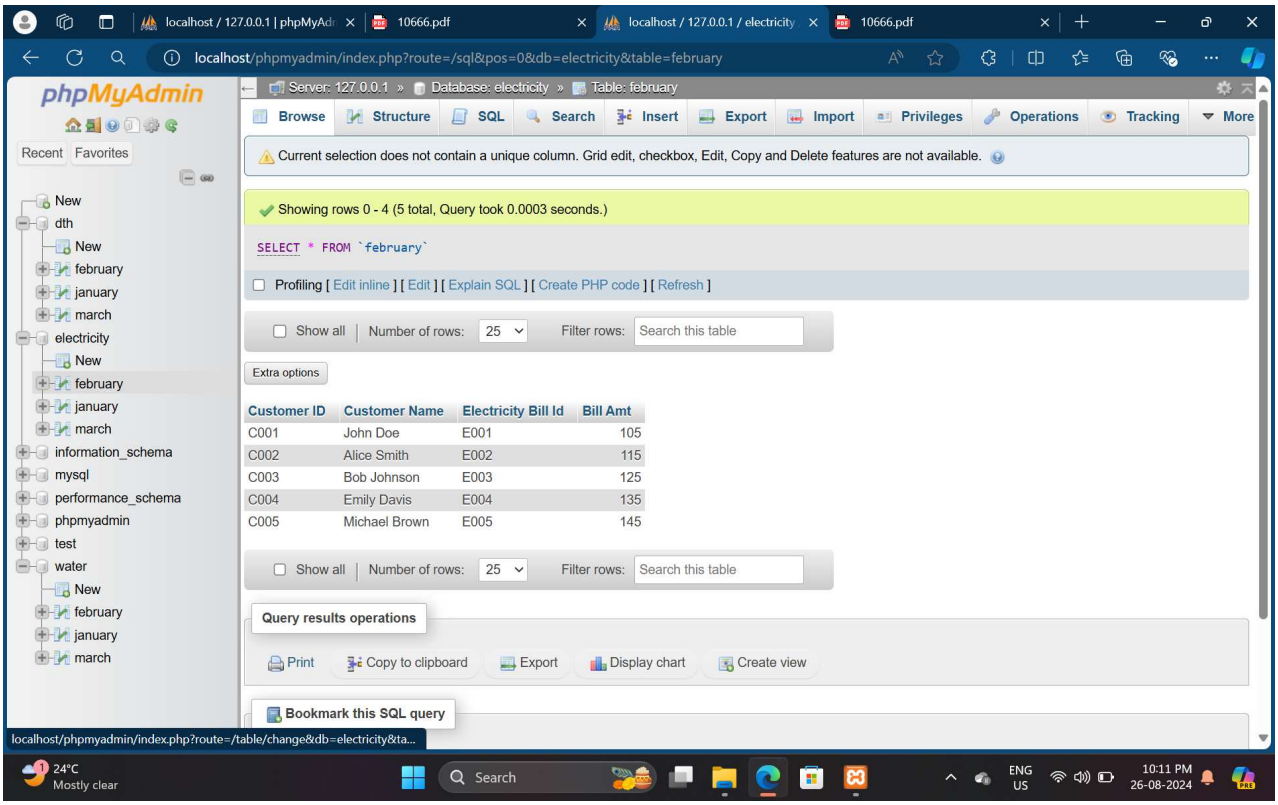


Fig 5.2: Tables used in Database.

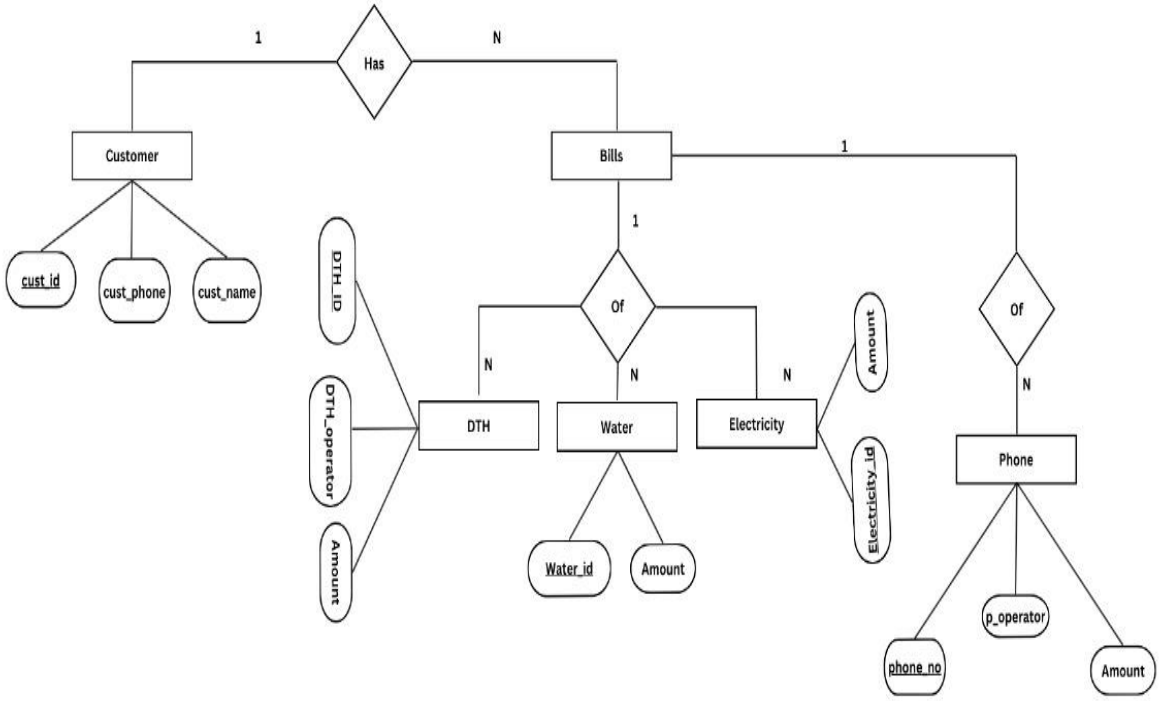


Electricity - In this we store electricity id , months and amount.

dth - In this we store dth id , dth operator, months and amount.

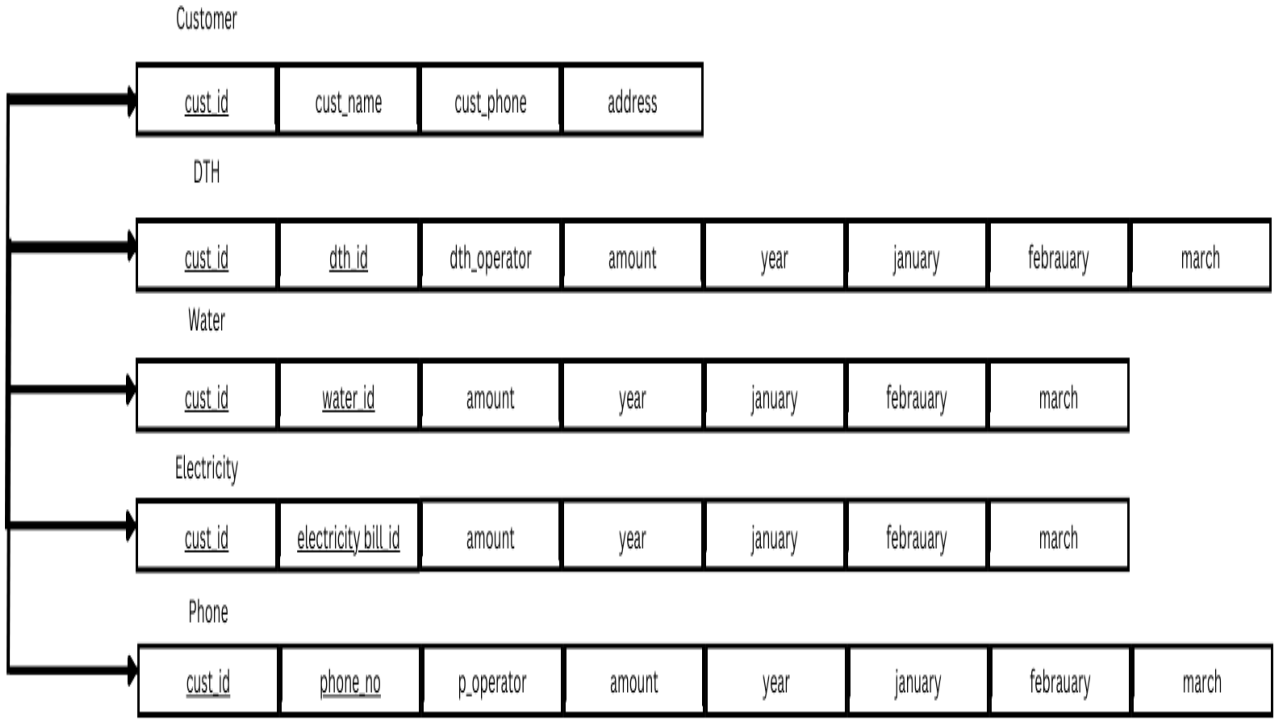
water - In this we store water id , months and amount.

5.3 ER diagram



- There is an entity called "customer" which stores general information about all types of bill.
- Each type of bills (Electricity, DTH, and Phone/Water) has its own entity.
- These entities (Electricity, DTH, and Phone/Water) are connected to the "customer" entity through a foreign key "cust_id".
- Specific attributes are listed for each entity:
    - Electricity: electricity_id (primary key), cust_id (foreign key), amount.
    - DTH: dth_id (primary key), cust_id (foreign key), amount.
    - Phone: phone_no(primary key), cust_id (foreign key),operator,amount.
    - Water: water_id (primary key), cust_id (foreign key),amount.

5.4 Schema diagram



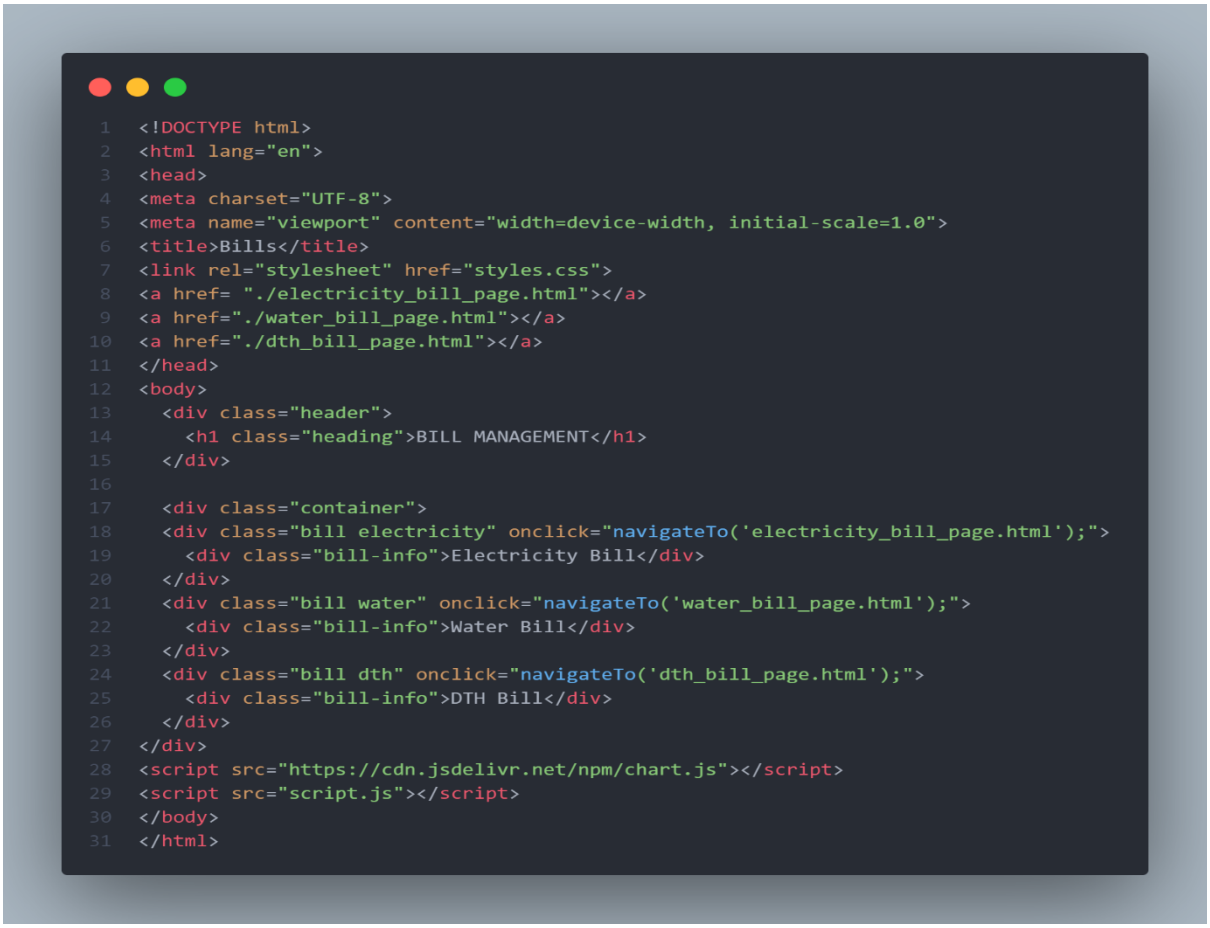
- Customer table stores general information about all expenditures, including the amount spent, the date of expenditure, and a foreign key linking it to the corresponding category.
- Category table defines different categories of expenditures, such as Electricity, DTH, Phone, and Water Bills.
- Each specific expenditure category (Electricity, DTH, Phone, and Water) has its own table storing detailed information specific to that category.
- Each specific expenditure category table has a foreign key (cust_id) linking it back to the Customer table, indicating which general expenditure it belongs to.
- The fields in each specific expenditure category table are tailored to capture relevant details for that particular category.

CHAPTER 6:

IMPLEMENTATION

6.1 :SAMPLE CODE

Home Page:



```html
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Bills</title>
<link rel="stylesheet" href="styles.css">
<a href= "./electricity_bill_page.html"></a>
<a href="./water_bill_page.html"></a>
<a href="./dth_bill_page.html"></a>
</head>
<body>
  <div class="header">
    <h1 class="heading">BILL MANAGEMENT</h1>
  </div>

  <div class="container">
  <div class="bill electricity" onclick="navigateTo('electricity_bill_page.html');">
    <div class="bill-info">Electricity Bill</div>
  </div>
  <div class="bill water" onclick="navigateTo('water_bill_page.html');">
    <div class="bill-info">Water Bill</div>
  </div>
  <div class="bill dth" onclick="navigateTo('dth_bill_page.html');">
    <div class="bill-info">DTH Bill</div>
  </div>
</div>
<script src="https://cdn.jsdelivr.net/npm/chart.js"></script>
<script src="script.js"></script>
</body>
</html>
```

Electricity Bill Page:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Electricity Bill Page</title>
  <link rel="stylesheet" href="electricity.css">
</head>
<body>
  <div class="container">
    <h2>Electricity Bill </h2>
```

```
    <div class="form-group">
      <label for="customerId">Customer ID:</label>
      <input type="text" id="customerId" placeholder="Enter Customer ID">
    </div>
    <div class="form-group">
      <label for="customerName">Customer Name:</label>
      <input type="text" id="customerName" placeholder="Enter Customer Name">
    </div>
    <div class="form-group">
      <label for="billId">Electricity Bill Id:</label>
      <input type="text" id="billId" placeholder="Enter Customer Bill Id">
    </div>
    <div class="form-group">
      <label for="month">Select Month:</label>
      <select id="month">
        <option value="">Select</option>
        <option value="january">January</option>
        <option value="february">February</option>
        <option value="march">March</option>
      </select>
    </div>
    <button onclick="showElectricityGraph()">Show Graph</button>
    <button id="resetElectricityButton" onclick="resetElectricityGraph()">Reset</button>
    <div class="graph-container">
      <canvas id="electricityChart" width="400" height="200"></canvas>
    </div>
  </div>
  <script src="https://cdn.jsdelivr.net/npm/chart.js"></script>
  <script src="electricity.js"></script>
</body>
</html>
```

```
//js
let electricityChart; // Declare a variable to store the electricity bill chart instance

// Sample data for demonstration
const electricityBillData = {
  january: { "C001": 100, "C002": 110, "C003": 120, "C004": 130, "C005": 140 },
  february: { "C001": 105, "C002": 115, "C003": 125, "C004": 135, "C005": 145 },
  march: { "C001": 110, "C002": 120, "C003": 130, "C004": 140, "C005": 150 }
};

// Object to map customer IDs to their names and electricity IDs
const electricityCustomerInfo = {
  "C001": { name: "John Doe", electricityId: "E001" },
  "C002": { name: "Alice Smith", electricityId: "E002" },
  "C003": { name: "Bob Johnson", electricityId: "E003" },
  "C004": { name: "Emily Davis", electricityId: "E004" },
  "C005": { name: "Michael Brown", electricityId: "E005" }
};

function showElectricityGraph() {
  const customerId = document.getElementById('customerId').value;
  const enteredName = document.getElementById('customerName').value.trim();
  const customerData = electricityCustomerInfo[customerId];
  const customerName = customerData ? customerData.name : "";
  const month = document.getElementById('month').value;

  // Check if customer ID, customer name, and month are entered
  if (!customerId || !customerName || !month) {
    alert('Please enter Customer ID, Customer Name, and select a Month.');
    return;
  }
```

```
// Check if the entered name matches the customer ID's name
if (enteredName !== customerName) {
  alert('The entered name does not match with the Customer ID.');
  return;
}

// Initialize arrays to store labels and data for the chart
const labels = [];
const data = [];

// Iterate through the months up to the selected month
const months = Object.keys(electricityBillData);
for (let i = 0; i <= months.indexOf(month); i++) {
  const month = months[i];
  labels.push(month);
  data.push(electricityBillData[month][customerId]);
}

// Destroy existing electricity bill chart if it exists
if (electricityChart) {
  electricityChart.destroy();
}

const ctx = document.getElementById('electricityChart').getContext('2d');
electricityChart = new Chart(ctx, {
  type: 'bar',
  data: {
    labels: labels,
    datasets: [{
      label: `Electricity Bill for ${customerName} (ID: ${customerId})`,
```

```
      data: data,
      backgroundColor: 'rgba(255, 99, 132, 0.2)',
      borderColor: 'rgba(255, 99, 132, 1)',
      borderWidth: 1
    }]
  },
  options: {
    scales: {
      y: {
        beginAtZero: true
      }
    }
  }
 });
}

function resetElectricityGraph() {
 // Destroy Electricity bill chart if it exists
 if (electricityChart) {
  electricityChart.destroy();
 }
}
//sql:

SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
START TRANSACTION;
SET time_zone = "+00:00";

/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
```

```
/*!40101 SET NAMES utf8mb4 */;

--
-- Database: `electricity`
--

-- --------------------------------------------------------

--
-- Table structure for table `february`
--

CREATE TABLE `february` (
  `Customer ID` varchar(15) NOT NULL,
  `Customer Name` varchar(15) NOT NULL,
  `Electricity Bill Id` varchar(15) NOT NULL,
  `Bill Amt` int(15) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;

--
-- Dumping data for table `february`
--

INSERT INTO `february` (`Customer ID`, `Customer Name`, `Electricity Bill Id`, `Bill Amt`) VALUES
('C001', 'John Doe', 'E001', 105),
('C002', 'Alice Smith', 'E002', 115),
('C003', 'Bob Johnson', 'E003', 125),
('C004', 'Emily Davis', 'E004', 135),
('C005', 'Michael Brown', 'E005', 145);

-- --------------------------------------------------------
```

```
--
-- Table structure for table `january`
--

CREATE TABLE `january` (
  `Customer ID` varchar(15) NOT NULL,
  `Customer Name` varchar(15) NOT NULL,
  `Electricity Bill Id` varchar(15) NOT NULL,
  `Bill Amt` int(15) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;

--
-- Dumping data for table `january`
--

INSERT INTO `january` (`Customer ID`, `Customer Name`, `Electricity Bill Id`, `Bill Amt`) VALUES
('C001', 'John Doe', 'E001', 100),
('C002', 'Alice Smith', 'E002', 110),
('C003', 'Bob Johnson', 'E003', 120),
('C004', 'Emily Davis', 'E004', 130),
('C005', 'Michael Brown', 'E005', 140);

-- --------------------------------------------------------

--
-- Table structure for table `march`
--

CREATE TABLE `march` (
  `Customer ID` varchar(15) NOT NULL,
```

```
  `Customer Name` varchar(15) NOT NULL,
  `Electricity Bill Id` varchar(15) NOT NULL,
  `Bill Amt` int(15) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;

--
-- Dumping data for table `march`
--

INSERT INTO `march` (`Customer ID`, `Customer Name`, `Electricity Bill Id`, `Bill Amt`) VALUES
('C001', 'John Doe', 'E001', 110),
('C002', 'Alice Smith', 'E002', 120),
('C003', 'Bob Johnson', 'E003', 130),
('C004', 'Emily Davis', 'E004', 140),
('C005', 'Michael Brown', 'E005', 150);
COMMIT;
```

Water Bill Page:

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Water Bill</title>
<link rel="stylesheet" href="water.css">
</head>
<body>
<div class="container">
```

```
 <h2>Water Bill</h2>
 <div class="form">
  <label for="customerId">Customer ID:</label>
  <input type="text" id="customerId">
  <label for="customerName">Customer Name:</label>
  <input type="text" id="customerName">
  <label for="waterId">Water ID:</label>
  <input type="text" id="waterId">
  <label for="month">Select Month:</label>
  <select id="month">
   <option value="january">January</option>
   <option value="february">February</option>
   <option value="march">march</option>
   <!-- Add options for other months -->
  </select>
  <button onclick="showWaterGraph()">Show Graph</button>
  <button id="resetWaterButton" onclick="resetWaterGraph()">Reset Graph</button>
 </div>
 <div class="graph-container">
  <canvas id="waterChart"></canvas>
 </div>
</div>
<script src="https://cdn.jsdelivr.net/npm/chart.js"></script>
<script src="water.js"></script>
</body>
</html>
```

Dth Bill page:

```
<!DOCTYPE html>
<html lang="en">
<head>
```

```
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>DTH Bill Page</title>
  <link rel="stylesheet" href="dth.css">
</head>
<body>
  <div class="container">
    <h2>DTH Bill </h2>
    <div class="form-group">
      <label for="customerId">Customer ID:</label>
      <input type="text" id="customerId" placeholder="Enter Customer ID">
    </div>
    <div class="form-group">
      <label for="customerName">Customer Name:</label>
      <input type="text" id="customerName" placeholder="Enter Customer Name">
    </div>
    <div class="form-group">
       <label for="billId">DTH Bill Id:</label>
       <input type="text" id="billId" placeholder="Enter Customer Bill Id">
     </div>
    <div class="form-group">
      <label for="dthOperator">Select DTH Operator:</label>
      <select id="dthOperator">
        <option value="">Select</option>
        <option value="Airtel">Airtel</option>
        <option value="DishTV">DishTV</option>
        <option value="Tata Sky">Tata Sky</option>
        <option value="Sun Direct">Sun Direct</option>
        <option value="Videocon D2H">Videocon D2H</option>
      </select>
    </div>
```

```
    <div class="form-group">
      <label for="month">Select Month:</label>
      <select id="month">
        <option value="">Select</option>
        <option value="january">January</option>
        <option value="february">February</option>
        <option value="march">March</option>
      </select>
    </div>
    <button onclick="showDTHGraph()">Show DTH Graph</button>
    <button id="resetDthButton" onclick="resetDTHGraph()">Reset</button>
    <div class="graph-container">
        <canvas id="dthChart" width="400" height="200"></canvas>
    </div>
  </div>
<script src="https://cdn.jsdelivr.net/npm/chart.js"></script>
  <script src="dth.js"></script>
</body>
</html>
```

CHAPTER 7:

TESTING

SYSTEM TESTING

Introduction

The goal of system testing is to test the whole system in the context of software requirements specification. It tests the design, behavior of the functionality, out of scope test scenarios as well as the believed minimum expectations of the customer. Entire project went through two levels of testing: Unit Testing and Integration Testing.

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub assemblies, assemblies and/or a finished product It is the process of exercising software with the intent of ensuring that the

Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

TYPES OF TESTS

Unit testing

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

Integration testing

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of component Integration testing is also referred as String testing which is one of the phases in software testing. The primary objective of String test is to ensure the software modules/ components function as per business rule interacted very well with related functions of the screens when combined together because output regenerated from one module can be considered as an input for other modules ensuring end-to-end functional flow works according to business requirement. In addition, it also ensures data sharing between multiple inter connected components/ modules through Synchronous and Asynchronous are meet the customer requirements. In closure, the integration testing is carried out after unit testing.

Functional test

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input : identified classes of valid input must be accepted.

Invalid Input : identified classes of invalid input must be rejected.

Functions : identified functions must be exercised.

Output : identified classes of application outputs must be exercised.

Systems/Procedures: interfacing systems or procedures must be invoked.

Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

System Test

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

White Box Testing

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

Black Box Testing

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box .you cannot "see" into it. The test provides inputs and responds to outputs without considering how the software works.

6.1 Unit Testing:

Unit testing will take place within the build phase of the project. After building each component to meet design specification, the developer is responsible for development of component and will conduct testing of his/ her own tasks based on design document to confirm that it functions properly as an individual unit. Unit testing was conducted on each and every module

Unit testing is usually conducted as part of a combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing to be conducted as two distinct phases.

Test strategy and approach

Field testing will be performed manually and functional tests will be written in detail.

Test objectives

- All field entries must work properly.
- Pages must be activated from the identified link.
- The entry screen, messages and responses must not be delayed.

Features to be tested

- Verify that the entries are of the correct format
- No duplicate entries should be allowed
- All links should take the user to the correct page.

6.2 Integration Testing

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.

The task of the integration test is to check that components or software applications, e.g. components in a software system or – one step up – software applications at the company level – interact without error.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

6.3 Acceptance Testing

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

CHAPTER 8

CONCLUSION

In conclusion, the Final Month Expenditure Report sheds light on the intricacies of managing household utilities, specifically electricity, DTH, and water bills. Through a meticulous analysis of consumption patterns, cost breakdowns, and comparative data, several key insights have been uncovered. It is evident that proactive monitoring and optimization strategies play a crucial role in controlling expenditure. By understanding peak usage hours, scrutinizing subscription details, and implementing conservation measures, households can effectively reduce costs without compromising on essential services. Furthermore, the comparative analysis highlights the importance of tracking expenditure trends over time to identify areas for improvement. Ultimately, this report emphasizes the significance of informed decision-making and sustainable practices in managing utility expenses for long-term financial stability and environmental conservation.

CHAPTER 9

REFERENCES

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