VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JNANA SANGAMA", BELAGAVI - 590 018

A MINI PROJECT REPORT

on

"BROADBAND BILLING SYSTEM"

Submitted by

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In partial fulfillment of the requirements for the V semester

DBMS LABORATORY WITH MINI PROJECT

of

BACHELOR OF ENGINEERING

in

INFORMATION SCIENCE & ENGINEERING

Under the Guidance of

Ms. J R Shruti

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at

SAHYADRI

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An Autonomous Institution

MANGALURU

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CERTIFICATE

This is to certify that the **Mini Project** entitled **"Broadband Billing System"** has been carried out by **Karthik J (4SF20IS041)** and **Mohammed Uyam Abbas (4SF20IS055)**, the bonafide students of Sahyadri College of Engineering & Management in partial fulfillment of the requirements for the V semester **DBMS Laboratory with Mini Project (18CSL58)** of **Bachelor of Engineering in Information Science & Engineering** of Visvesvaraya Technological University, Belagavi during the year 2022 - 23. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The mini project report has been approved as it satisfies the academic requirements in respect of mini project work.

Ms. J R Shruti	**Dr. Mustafa Basthikodi**
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External Practical Examination:

Examiner's Name	Signature with Date
1.	.....
2.	.....

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DECLARATION

We hereby declare that the entire work embodied in this Mini Project Report titled **"Broadband Billing System"** has been carried out by us at Sahyadri College of Engineering and Management, Mangaluru under the supervision of **Ms. J R Shruti** as the part of the V semester **DBMS Laboratory with Mini Project (18CSL58)** of **Bachelor of Engineering** in **Information Science & Engineering**. This report has not been submitted to this or any other University.

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Abstract

As the name suggests, broadband internet service is the wide bandwidth data transmission that transports various signals and traffic types. Thus, broadband internet service is a widely used form of internet access due to its high access speed. The broadband once installed, the connection is always on and the connection is maintained with the use of the some modem. The multiple devices can be accessed with this broadband service. All the daily official or internet work becomes easier and faster due to this broadband. But this scenario worsens, when the customer forgets to pay the bill on time or the deadline is near.

Acknowledgement

It is with great satisfaction and euphoria that we are submitting the Mini Project Report on **"Broadband Billing System"**. We have completed it as a part of the V semester **DBMS Laboratory with Mini Project (18CSL58)** of **Bachelor of Engineering** in **Information Science & Engineering** of Visvesvaraya Technological University, Belagavi.

We are profoundly indebted to our guide, **Ms. J R Shruti**, Assistant Professor, Department of Information Science & Engineering for innumerable acts of timely advice, encouragement and We sincerely express our gratitude.

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Chapter 1

Introduction

In this digital era, where everything is available online, the internet is one of the most crucial parts of peoples lives. it becomes absolutely necessary that broadband bills have to be paid on time, so that customer doesn't face any inconvenience with the internet.

Broadband is high speed internet connection enabled through different mediums. Broadband bill payment can be easily done online in an instant. Online broadband bill payment ensures instant bill payment and uninterrupted internet services.

1.1 Purpose

Paying bills every month can be quite hectic at times, especially when customer is running short of time or are busy with umpteen other things. Sometimes customer might even end up paying a late fee due to a missed deadline and now the customer simply can't pay it as the bill payment office is closed. Hence, online bill payments come as a big relief! and broadband bill payment is definitely not an exception.

1.2 Scope

Now there is no need to stand in the long queue to pay their broadband bills for hours. Whether it be online classes, work-from-home, or just entertainment purposes, having uninterrupted internet is a must. To keep that going, people need to pay the broadband bills on time. This can be done easily on any of the online payment platforms.

1.3 Overview

The main objective of the mini-project is to propose and develop broadband billing billing system for use by Internet service providers to charge Internet users according to their network usage. Generally, if the user is ready to pay, the admin will issue the bill based on the plan chosen by the customer. This system will allow customer to select best plans. Admin can add new plans, edit current plans. Customer can give any number of feedback based on the service received.

Chapter 2

Requirements Specification

2.1 Hardware Specification

- Processor : Intel(R) Core(TM) i3-1005G1 CPU @ 1.20GHz 1.19 GHz
- RAM : 8GB
- Hard Disk : 1TB
- Input Device : Standard keyboard and Mouse
- Output Device : Monitor

2.2 Software Specification

- Database : MySQL 5.6.17
- Markup Language : HTML
- Scripting Language: PHP 5.5.12
- IDE :NetBeans 8.0.2

Chapter 3

System Design

3.1 ER Diagram

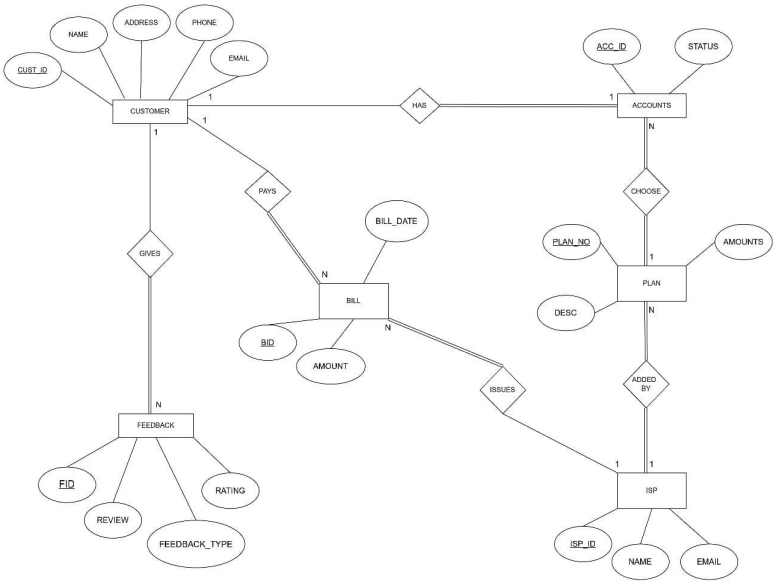

Figure 3.1: ER Diagram for BoardBand Billing System

Customer will interact with the system through application server, will assign the job with deadline. Once job is assigned admin will request for the master slave for information about slave virtual machine details. Then calculate minimum requirement for execute job. After assign job to master, it will process the job and return the result. The main functionality, calculating minimum nodes, is done by admin.

3.2 Mapping From ER Diagram to Schema Diagram

- **Mapping of Regular Entities:** This step involves mapping all the regular entity types to tabular format by identifying their primary keys.
- **Mapping of Weak Entity:** When mapping weak entity types along with other attributes the partial key and primary key of parent entity together will form their primary key of the new relation.
- **Mapping of 1:1 Relation:** In this step foreign keys are assigned using foreign key approach.The primary key of the participating relation R or S is added as primary key to second entity types by looking at the participating constraints
- **Mapping of 1:N Relation:** Foreign key approach is used to add one sided primary key to the n sided entity at foreign key.
- **Mapping of M:N Relation:** Cross reference approach is used where the relaionship is converted to a new relation within attributes on primary keys of both participating relation.
- **Mapping of N-ary Relation:** For mapping N array relationship a new relation is created with a relationship name in its attribute and primary keys of all participating entity types.
- **Mapping of Multi-valued Relation:** For multi-valued attributes a separate relation has to be created along with primary key of parent relation.

3.3 Assumptions

- One customer must have only one account and can choose a plan through the respective account.
- Customer can give any number of feedback.
- An admin can add many plans and also edit the plans.
- Admin will issue the bill for the customer based on the plan chosen.

3.4 Schema Diagram

A database schema, along with primary key and foreign key dependencies, can be depicted by schema diagram. Each relation appears as a box, with the relation name outside the box and the attributes listed inside the box. Primary key attributes are shown underlined. Foreign key dependencies appear as arrows from the foreign key attributes of the referencing relation to the primary key of the referenced relation. The schema diagram of this project is as shown in Figure 3.2.

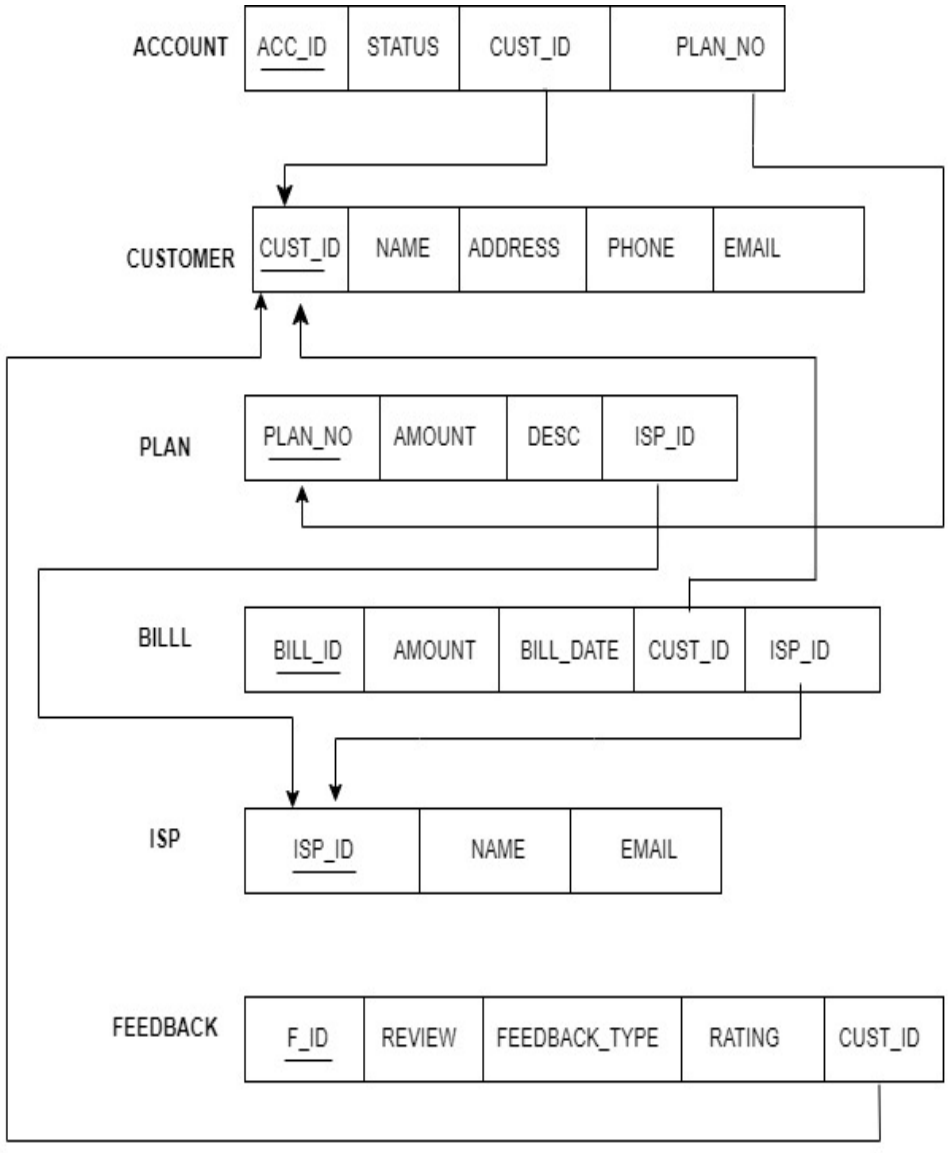

Figure 3.2: Schema Diagram for BoardBand Billing System

Chapter 4

Implementation

4.1 Pseudo-Codes

Pseudocode for Inserting values to the account:

An insert query is written inside an if statement. If the user presses the submit button, then the values will be inserted into the account table and an alert message will be shown else it will show an error as shown in the Figure 4.1.

```
<?php
include 'connection1.php';

if(isset($_POST['submit'])){
$Status= $_POST['status'];
$Cust_id=$_POST['id'];
$Plan_no=$_POST['number'];

$insert_query=" insert into account(Status,Cust_id,Plan_no)
      values('$Status','$Cust_id','$Plan_no')";
    $res =  mysqli_query($con,$insert_query);
    if($res){
        ?>
        <script>
            alert("Account has been setup and plan has been chosen!");
            </script>
            <?php
    }else{
    ?>
        <script>
            alert("Woops! error.");
            </script>
            <?php
    }
}
 ?>
```

Figure 4.1: Pseudocode for Inserting values to the account

Pseudocode for Deleting:

Here first a connection is established to the database and id of the customer is fetched from database. A delete query is written and passed to the variable $_query. If the query is executed successfully then an alert message to be shown else it will show an error as shown in the Figure 4.2.

```
<?php

include 'connection1.php';

$id =$_GET['id'];

$deletequery = " delete from customer where Cust_id=$id ";

$query =mysqli_query($con,$deletequery);

if($query){
    ?>
    <script>
        alert("Your account  has been deleted!")
        </script>
        <?php
}else{
    ?>
    <script>
        alert("Woops!, Something went wrong")
        </script>
        <?php
}

header('location: home.php');

?>
```

Figure 4.2: Pseudocode for Deleting

Pseudocode for Updating:

First plan no is fetched from the database. Then query is written to fetch the plan details and passed to a variable showquery. Update query is written inside a if statement and passed to the variable query. If the query is executed successfully then an alert message should be shown else it will show an error as shown in the Figure 4.3.

```
include "connection1.php";
$ids = $_GET['id'];

$showquery = "select * from plan where Plan_no={$ids}";

$showdata = mysqli_query($con,$showquery);

$arrdata = mysqli_fetch_array( $showdata);

if(isset($_POST['submit'])){
    $idupdate = $_GET['id'];
    $Amount= $_POST['amount'];
    $Description= $_POST['desc'];
    $Admin_id= $_POST['number'];

    $query= " update plan set Amount='$Amount' , Description='$Description'
        where Plan_no='$idupdate' ";

    $res =  mysqli_query($con,$query);

    if($res){
        ?>
        <script>
            alert("Plan has been updated!");
            </script>
            <?php
    }else{
```

Figure 4.3: Pseudocode for updating

4.2 Tables Used for Broadband Billing System

Customer Table:

The structure of customer table is as shown in Figure 4.4. The customer table has attributes cust id, name, address, email, phone, password and cust id is the primary key.

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
☐	1	Cust_id	int(255)			No	None		AUTO_INCREMENT
☐	2	Name	text	utf8mb4_general_ci		No	None		
☐	3	Address	text	utf8mb4_general_ci		No	None		
☐	4	Email	varchar(255)	utf8mb4_general_ci		No	None		
☐	5	Phone	bigint(255)			No	None		
☐	6	Password	varchar(255)	utf8mb4_general_ci		No	None		

Figure 4.4: Structure of Customer table

ISP Table:

The structure of ISP table is as shown in Figure 4.5. The ISP table has attributes isp id, name, email, password and isp id is the primary key.

	#	Name	Type	Collation	Attributes	Null	Default	Co
☐	1	Isp_id	int(255)			No	None	
☐	2	Name	char(20)	utf8mb4_general_ci		No	None	
☐	3	Email	varchar(255)	utf8mb4_general_ci		No	None	
☐	4	Password	varchar(255)	utf8mb4_general_ci		No	None	

Figure 4.5: Structure of ISP table

Plan Table:

The structure of plan table is as shown in Figure 4.6. The plan table has attributes plan no, amount, description and isp id. The plan no is primary key. Admin id is the foreign key.

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
☐	1	Plan_no	int(255)			No	None		AUTO_INC
☐	2	Amount	varchar(255)	utf8mb4_general_ci		No	None		
☐	3	Description	varchar(255)	utf8mb4_general_ci		No	None		
☐	4	Isp_id	int(255)			No	None		

Figure 4.6: Structure of Plan table

Account Table:

The structure of account table is as shown in Figure 4.7. The account table has attributes Acc id, Status, Cust id and isp id. The Acc id is a primary key. The Cust id and isp id are the foreign keys.

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
☐	1	Acc_id	int(255)			No	None		AUTO_INCREMENT
☐	2	Status	varchar(255)	utf8mb4_general_ci		No	None		
☐	3	Cust_id	int(255)			No	None		
☐	4	Plan_no	int(255)			No	None		

Figure 4.7: Structure of Account table

Bill Table:

The structure of bill table is as shown in Figure 4.8. The bill table has attributes Bill id, amount, bill date, cust id and isp id. The bill id is a primary key. The cust id and admin id are the foreign keys.

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
☐	1	Bill_id	int(255)			No	None		AUTO_INCREMEN
☐	2	Amount	varchar(255)	utf8mb4_general_ci		No	None		
☐	3	Bill_date	date			No	None		
☐	4	Cust_id	int(255)			No	None		
☐	5	Isp_id	int(255)			No	None		

Figure 4.8: Structure of Bill table

Feedback Table:

The structure of feedback table is as shown in Figure 4.9. The feedback table has attributes Fid, review, feedback type, rating and cust id. The Fid is a primary key and cust id is the foreign key.

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
☐	1	Fid	int(255)			No	None		AUTO_INCREMENT
☐	2	Review	text	utf8mb4_general_ci		No	None		
☐	3	Feedback_type	varchar(255)	utf8mb4_general_ci		No	None		
☐	4	Rating	int(255)			No	None		
☐	5	Cust_id	int(255)			No	None		

Figure 4.9: Structure of Feedback table

Chapter 5

Results and Disscussion

Customer Account Page:

Here the customer can choose the plan and how many months the customer wants that particular plan. Figure 5.1 shows the customer account page of this project.

Figure 5.1: Structure of Customer Account Page

Customer Feedback Form:

The customer feedback form consists of review, rating and feedback type. Customer can give feedback based on the services provided. Figure 5.2 shows the customer feedback form of this project.

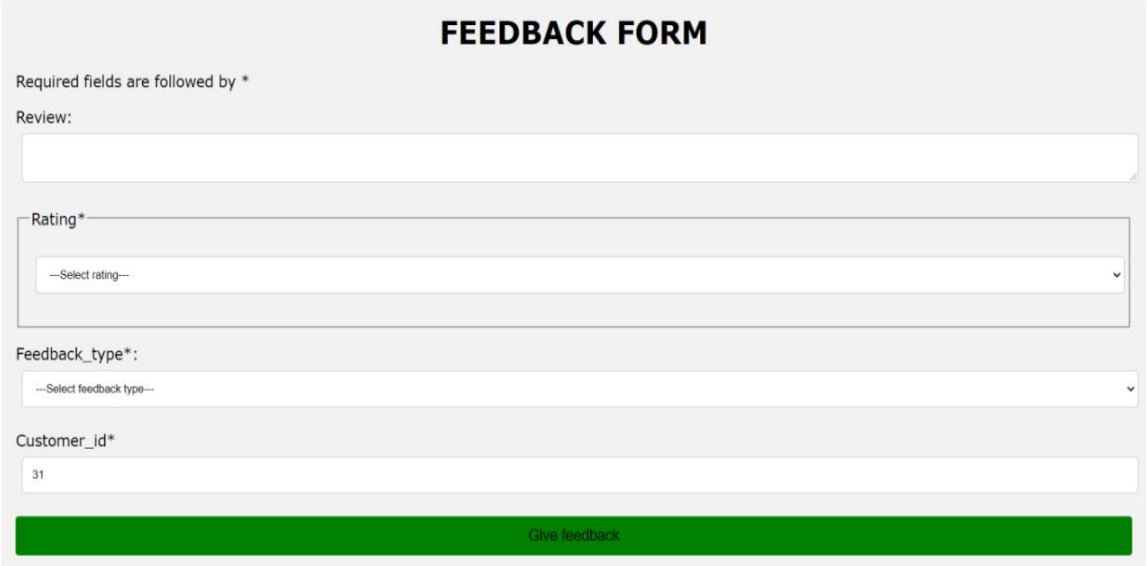

Figure 5.2: Structure of Customer Feedback Form

Bill View Page:

Here the customer can view the respective bill based on the chosen plan. It also shows the date when the bill was issued as shown in the figure 5.3.

Figure 5.3: Structure of Bill View Page

Add Plan Page:

The add plans page consist of amount, description and admin id. The admin can add the amount along with its description as shown in the Figure 5.4.

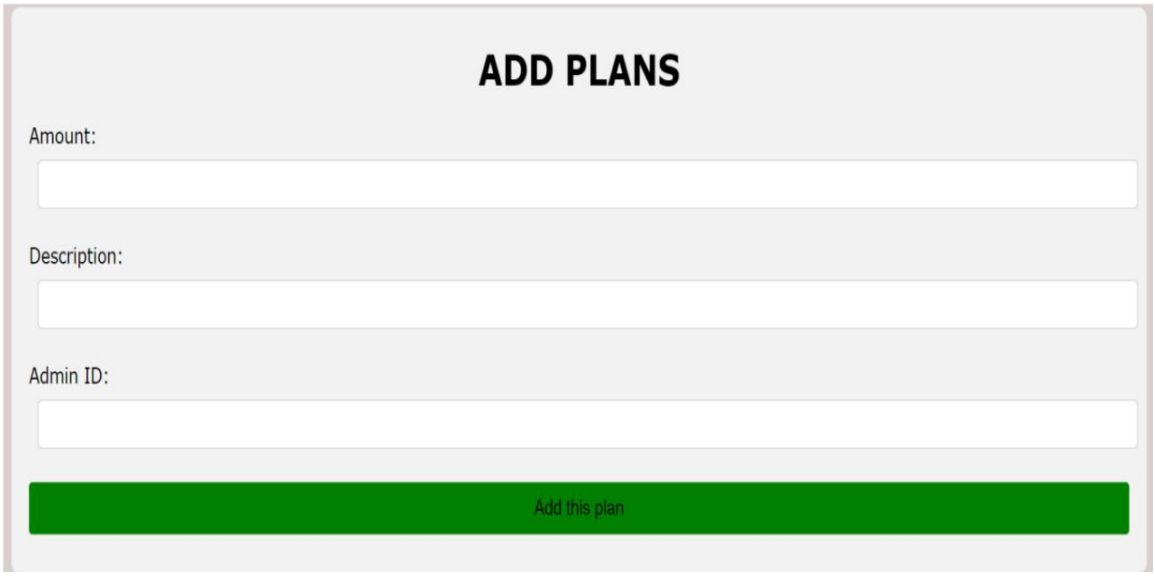

Figure 5.4: Structure of Add Plan Page

Bill Issuing Page:

Here the admin can issue the bill based on the plan chosen by the customer. Figure 5.5 shows the bill issuing page of this project.

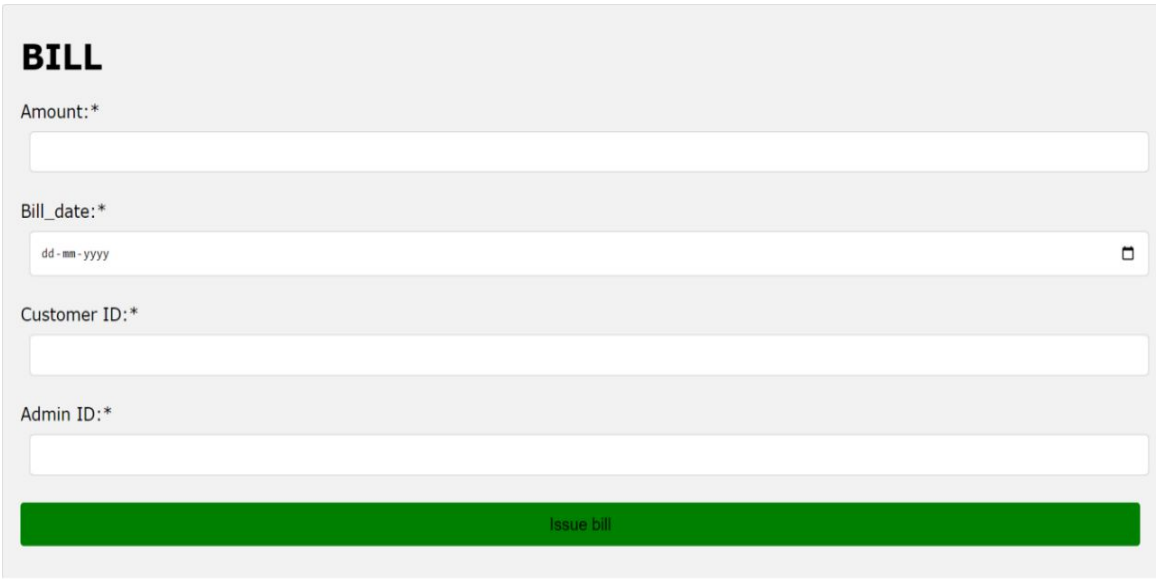

Figure 5.5: Structure of Bill Issuing Page

Chapter 6

Conclusion and Future work

The "Broadband Billing System" has been developed to overcome the problems in the internet system. In this project the customer can register and login to the account,choose any plan and also give feedback. The isp is the one who will add the plans and also issue the bill to the respective customer. This system will help the customer to save time. This system has high speed internet connection enabled through different mediums. It is user friendly and works efficiently. The customer can give feedback based on the services provided by the internet provider. This project can further be improved by enabling the payment button for the customer on different platforms. Integrating this changes with the working project will make it even more efficient.

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