EAST WEST UNIVERSITY

Department of ECE

Database Systems II (ICE301/ICE305/ETE465)

Section: 1

Final Project

Submitted To:

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Introduction:

Database management system (DBMS) is a software package designed to define, manipulate, retrieve and manage data in a database. A DBMS generally manipulates the data itself, the data format, field names, record structure and file structure. It also defines rules to validate and manipulate this data. Database management systems are set up on specific data handling concepts, as the practice of administrating a database evolves. The earliest databases only handled individual single pieces of specially formatted data. Today's more evolved systems can handle different kinds of less formatted data and tie them together in more elaborate ways

We are working as a team and our project is based on database and in this project we r going to establish a database of **Banglalink** and through this we will get to know how we can operate the database for any kind of purpose and fulfil the necessaries.

Techopedia Explains Database Management System (DBMS)

The model of database system has been changed. This is a key part to understanding how various DBMS options work. The earliest types of database management systems consisted mainly of hierarchy and network models.

In this project we mainly collected all the information for a business in a database. **Banglalink** is the most renowned and powerful network working widely in Bangladesh for a long period. This project we provide the frontend page of **Banglalink** website and the registration form for buying new SIM that any customer can see and access. When a customer, access the website or insert any new information for any reason, this information stores in the **Banglalink's** database. In this project we are going to explain how a customer can insert information for buying new SIM and other reason and stored this information in database. Even also we will get to know that how we can do operations in database using SQL.

Tools:

- ✓ PhpMyAdmin
- ✓ HTML
- ✓ CSS
- ✓ PHP

Database of Banglalink

This is **Banglalink's** database. The database contains four tables. Customer, Offer, Employee, and Branch tables are the four types of tables. This database is relational. The following are examples:

Cutomers_info:

Create code for customer_info Table:

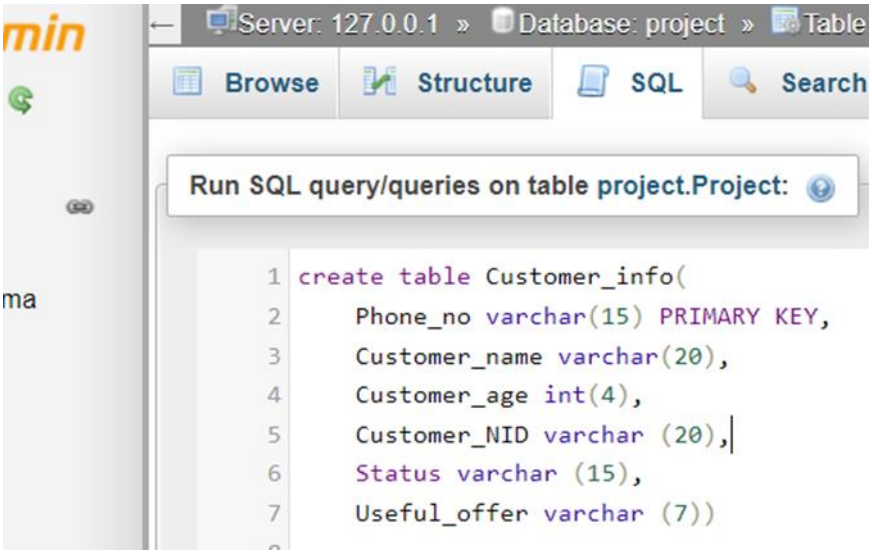


Fig-1

Insert Code for customer_info Table:

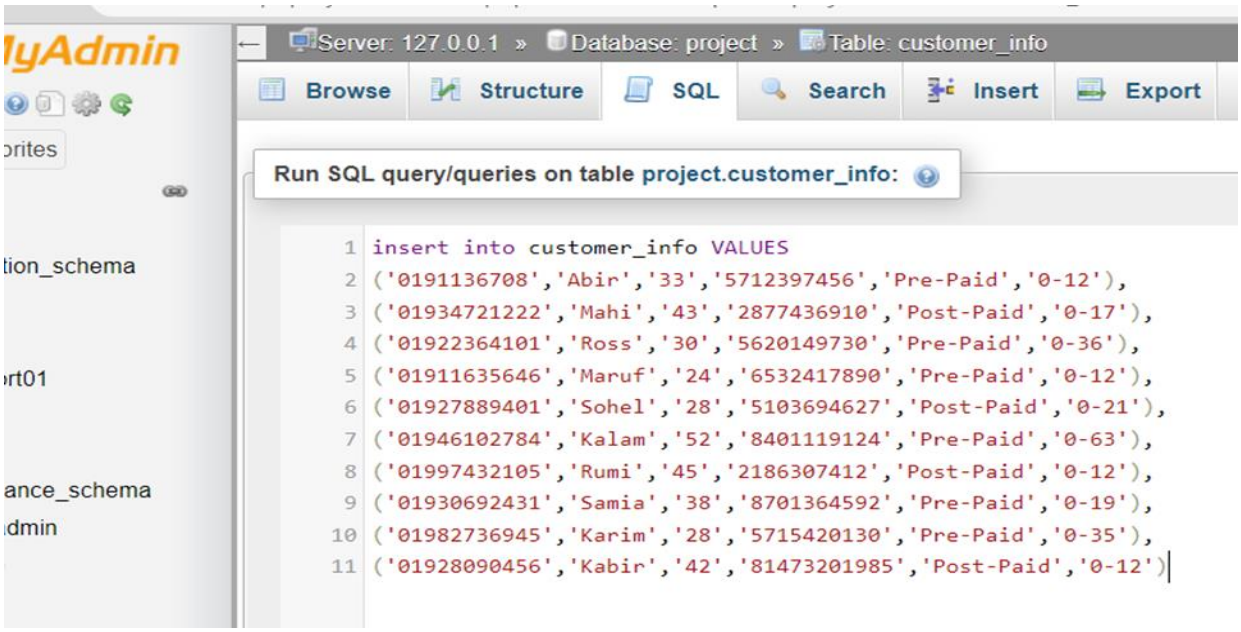
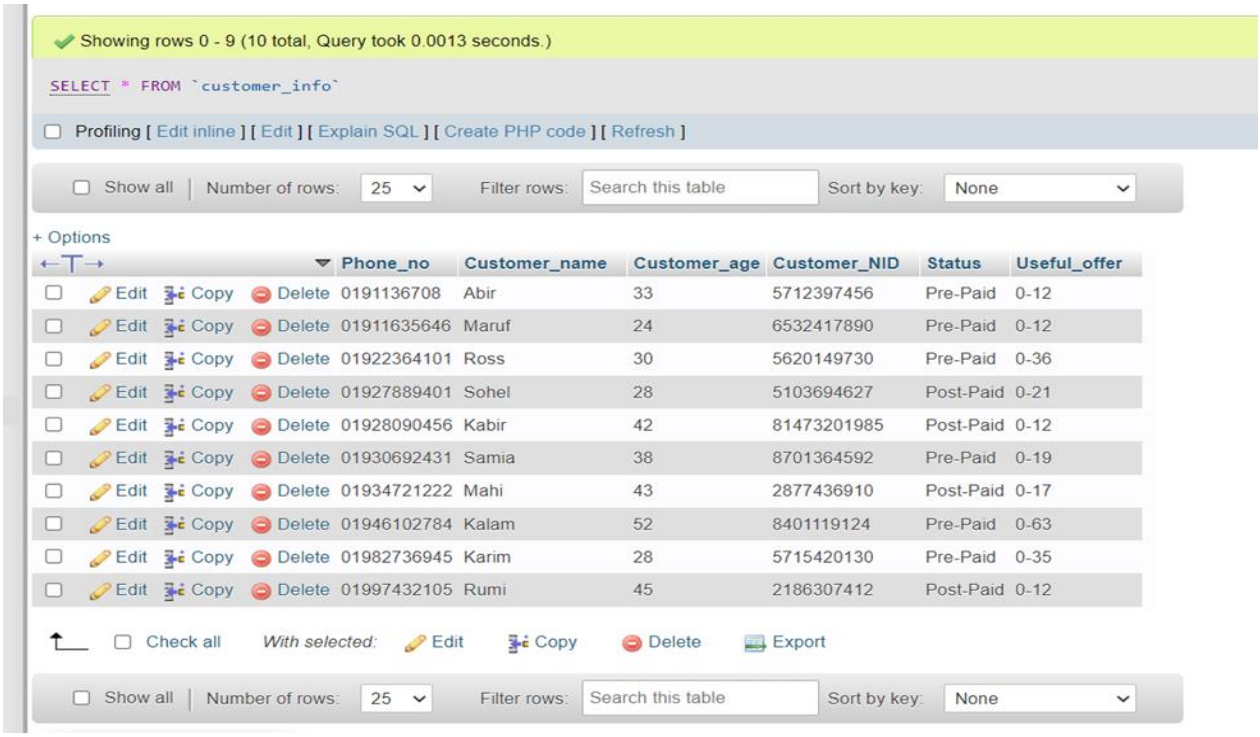


Fig-2

Customer_info Table:



Showing rows 0 - 9 (10 total, Query took 0.0013 seconds.)

```
SELECT * FROM `customer_info`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

	Phone_no	Customer_name	Customer_age	Customer_NID	Status	Useful_offer
Edit Copy Delete	0191136708	Abir	33	5712397456	Pre-Paid	0-12
Edit Copy Delete	01911635646	Maruf	24	6532417890	Pre-Paid	0-12
Edit Copy Delete	01922364101	Ross	30	5620149730	Pre-Paid	0-36
Edit Copy Delete	01927889401	Sohel	28	5103694627	Post-Paid	0-21
Edit Copy Delete	01928090456	Kabir	42	81473201985	Post-Paid	0-12
Edit Copy Delete	01930692431	Samia	38	8701364592	Pre-Paid	0-19
Edit Copy Delete	01934721222	Mahi	43	2877436910	Post-Paid	0-17
Edit Copy Delete	01946102784	Kalam	52	8401119124	Pre-Paid	0-63
Edit Copy Delete	01982736945	Karim	28	5715420130	Pre-Paid	0-35
Edit Copy Delete	01997432105	Rumi	45	2186307412	Post-Paid	0-12

Check all *With selected:* Edit Copy Delete Export

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Fig-3

Offer_info Table:

Showing rows 0 - 10 (11 total, Query took 0.0010

```
SELECT * FROM `offer_info`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Crea

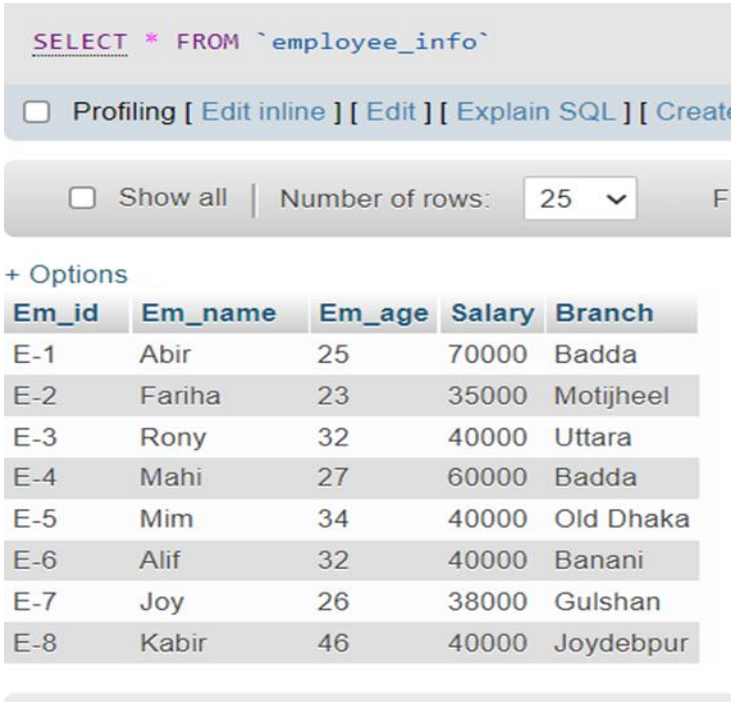
Show all | Number of rows: 25

+ Options

Offer_code	Offer_name	Cost	validity
0-14	12GB	300TK	15 Days
0-64	5GB	30TK	10 Days
0-21	300MB	17TK	3 Days
0-12	1GB	30TK	1 Days
0-3	100GB	500TK	30 Days
0-36	90Min	49TK	3 Days
0-52	4GB	111TK	7 Days
0-19	1.2GB	40TK	10 Days
0-18	30Min	13TK	7 Days
0-35	6GB	124TK	7 Days
0-4	150MB	24TK	5 Days

Fig-4

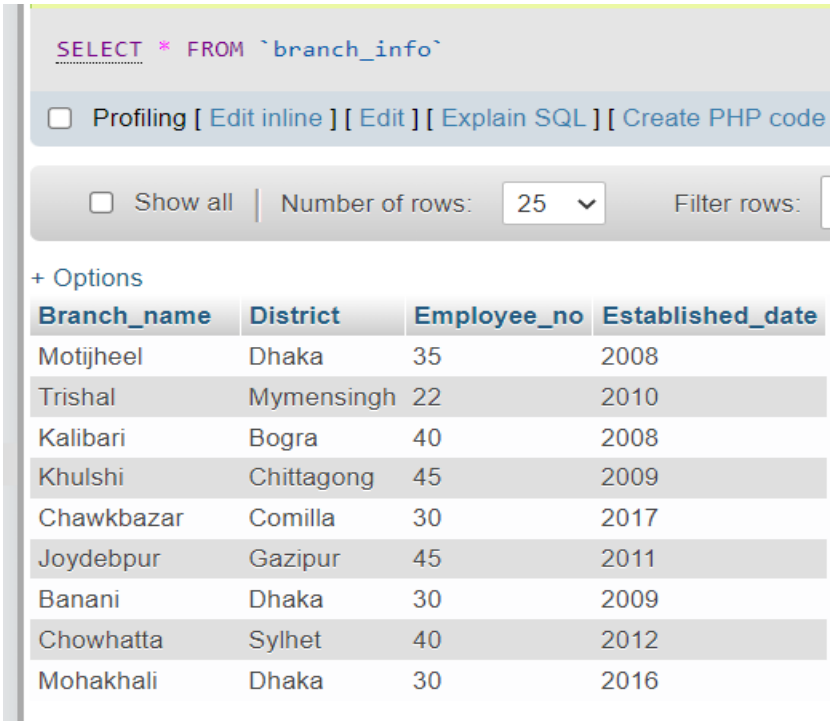
Employee_info Table:



Em_id	Em_name	Em_age	Salary	Branch
E-1	Abir	25	70000	Badda
E-2	Fariha	23	35000	Motijheel
E-3	Rony	32	40000	Uttara
E-4	Mahi	27	60000	Badda
E-5	Mim	34	40000	Old Dhaka
E-6	Alif	32	40000	Banani
E-7	Joy	26	38000	Gulshan
E-8	Kabir	46	40000	Joydebpur

Fig-5

Branch_info Table:



Branch_name	District	Employee_no	Established_date
Motijheel	Dhaka	35	2008
Trishal	Mymensingh	22	2010
Kalibari	Bogra	40	2008
Khulshi	Chittagong	45	2009
Chawkbazar	Comilla	30	2017
Joydebpur	Gazipur	45	2011
Banani	Dhaka	30	2009
Chowhatta	Sylhet	40	2012
Mohakhali	Dhaka	30	2016

Fig-6

SQL Operation

A database allows us to get data one at a time. However, the database contains a large amount of information. So, we'll have to use SQL to analyses the data collected we need. We can quickly obtain specific data from a database by performing SQL operations. We demonstrate certain SQL operations that are critical for DBMS use. Following are some examples of operations:

1. ***Show customer name and phone number for a customer whose age is <40 and use offer '0-12' from customer_info table.***

Command and result:

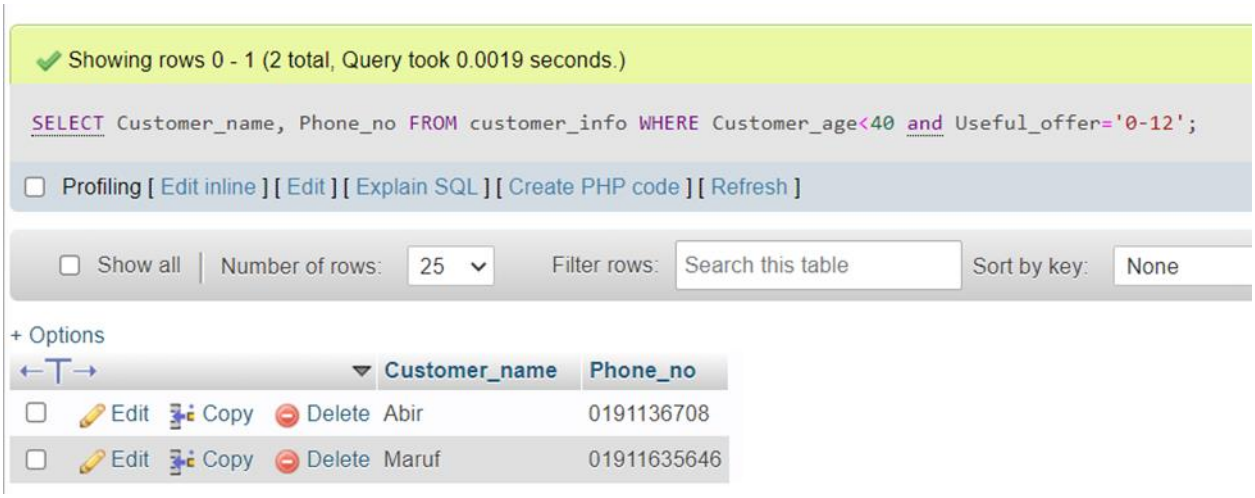


Fig-7

Explanation: Here I use "AND" keyword. When we want to find an information depends on more than one condition from a table then we use "AND" keyword. "AND" keyword used when we want to fulfill all condition at a time successfully.

2. ***Show branch_name and District in which employee number is 25-35 from branch_info table.***

Command and result:

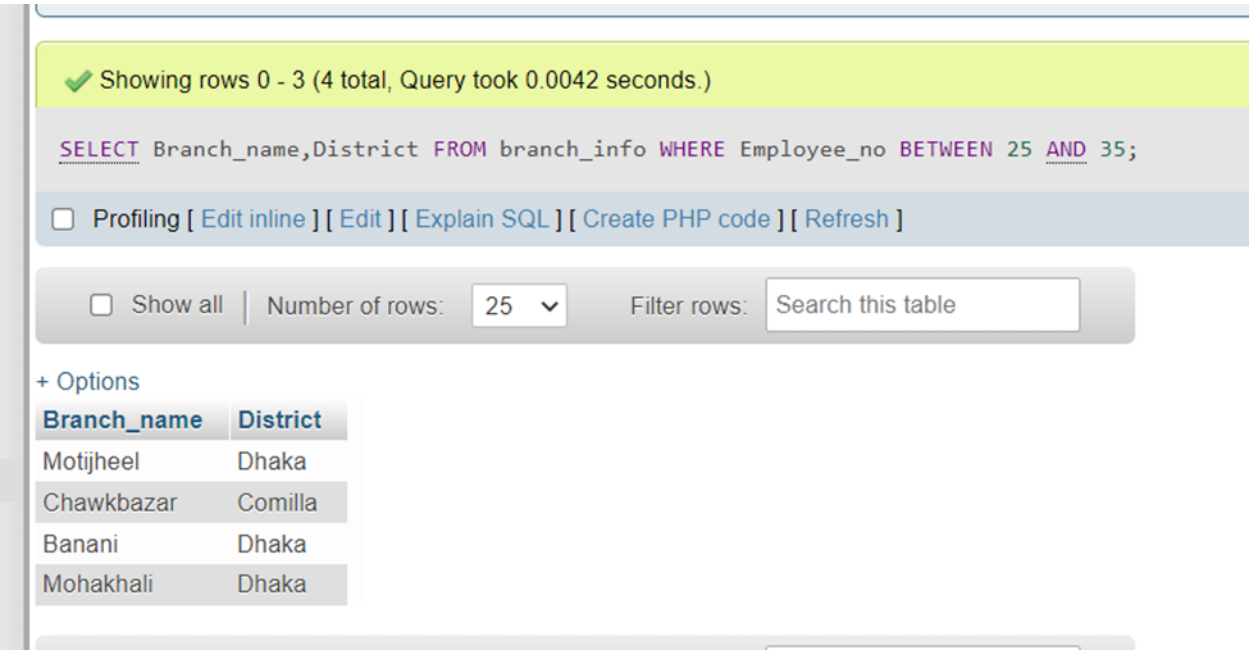


Fig-8

Explanation: Here I use two keywords. “BETWEEN” and “AND”. We can use “BETWEEN” keyword when we need find an inclusive range between two values.

3. ***Show em_name and em_id for an employee whose salary is > average salary from employee_info***

Command and result:

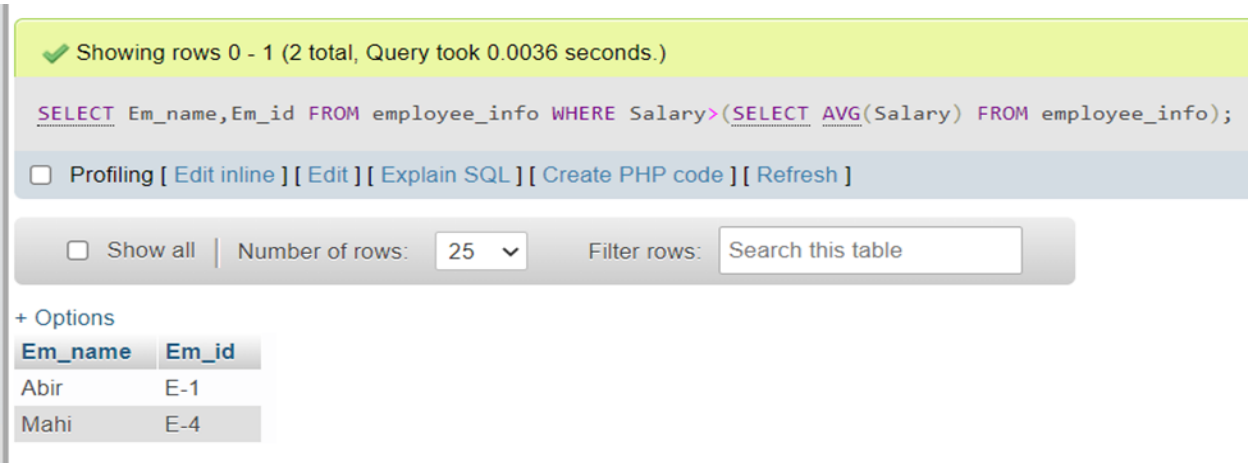


Fig-9

Explanation: Here I use "AVG" keyword. "AVG" keyword is use to find the average value. In this table we want to search employee name and id of whose salary >average salary of all employee. That's why we have to use here "AVG" keyword.

4. ***Find out the branch name start with "M" end with "l" and have "i" in fourth position.***

Command and result:

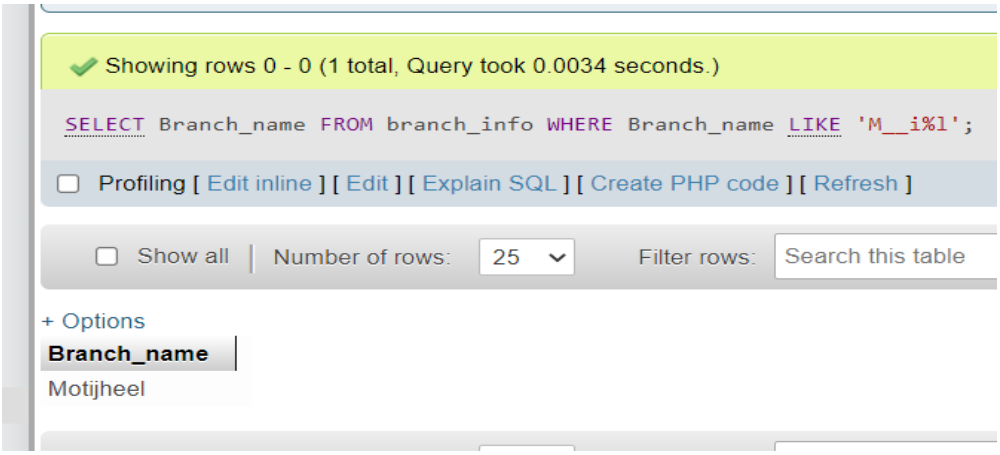


Fig-10

Explanation: Here I use "%" and "_" wildcard characters. "%" character is use to substitute for 0 or more characters and "_" is use to substitute for a single character. Wildcard character is basically use to search data in a database.

5. ***Show employee age in ascending order.***

Command and result

Fig-11

Explanation: When we need any information in ascending order we can use "ASC" keyword in database to do values in ascending order.

6. ***Increase the salary of the employees 7% of their total salary.***

Command and result:

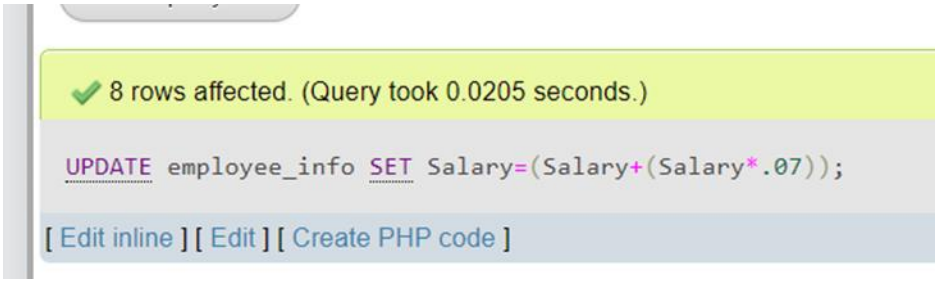


Fig-12

Em_id	Em_name	Em_age	Salary	Branch
E-1	Abir	25	74900	Badda
E-2	Fariha	23	37450	Motijheel
E-3	Rony	32	42800	Uttara
E-4	Mahi	27	64200	Badda
E-5	Mim	34	42800	Old Dhaka
E-6	Alif	32	42800	Banani
E-7	Joy	26	40660	Gulshan
E-8	Kabir	46	42800	Joydebpur

Fig-13

Explanation: When we need to update our database, we can use "UPDATE" keyword. Also, we can use "SET" keyword when we set any information after updating. Here I want to update the employees' salary, so I use UPDATE keyword.

7. ***Add the Branch data into customer table.***

Command:

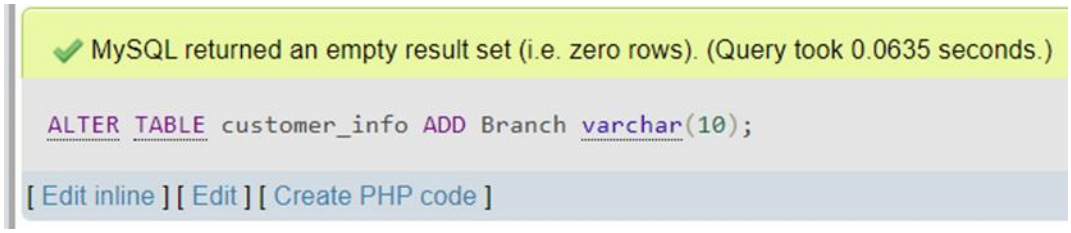


Fig-14

Result:

+ Options

	Phone_no	Customer_name	Customer_age	Customer_NID	Status	Useful_offer	Branch
Edit Copy Delete	0191136708	Abir	33	5712397456	Pre-Paid	0-12	NULL
Edit Copy Delete	01911635646	Maruf	24	6532417890	Pre-Paid	0-12	NULL
Edit Copy Delete	01922364101	Ross	30	5620149730	Pre-Paid	0-36	NULL
Edit Copy Delete	01927889401	Sohel	28	5103694627	Post-Paid	0-21	NULL
Edit Copy Delete	01928090456	Kabir	42	81473201985	Post-Paid	0-12	NULL
Edit Copy Delete	01930692431	Samia	38	8701364592	Pre-Paid	0-19	NULL
Edit Copy Delete	01934721222	Mahi	43	2877436910	Post-Paid	0-17	NULL
Edit Copy Delete	01946102784	Kalam	52	8401119124	Pre-Paid	0-63	NULL
Edit Copy Delete	01982736945	Karim	28	5715420130	Pre-Paid	0-35	NULL
Edit Copy Delete	01997432105	Rumi	45	2186307412	Post-Paid	0-12	NULL

Fig-15

Explanation: When we need to add an attribute or column in the table, we can use "ALTER" keyword. Here I want to add Branch column in the customer_info table. So, I use ALTER keyword.

8. ***Drop the branch data from customer table.***

Command:

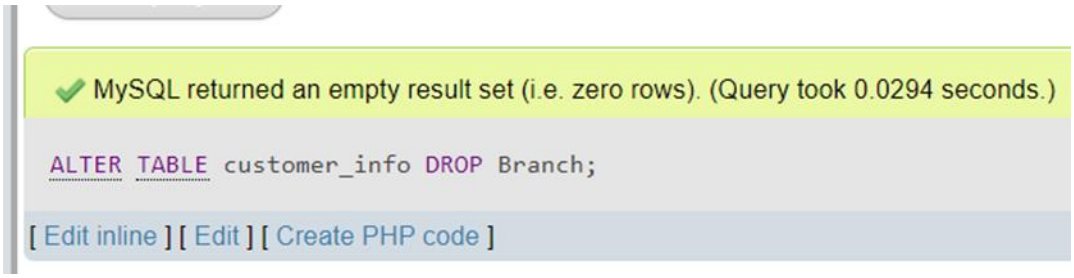


Fig-16

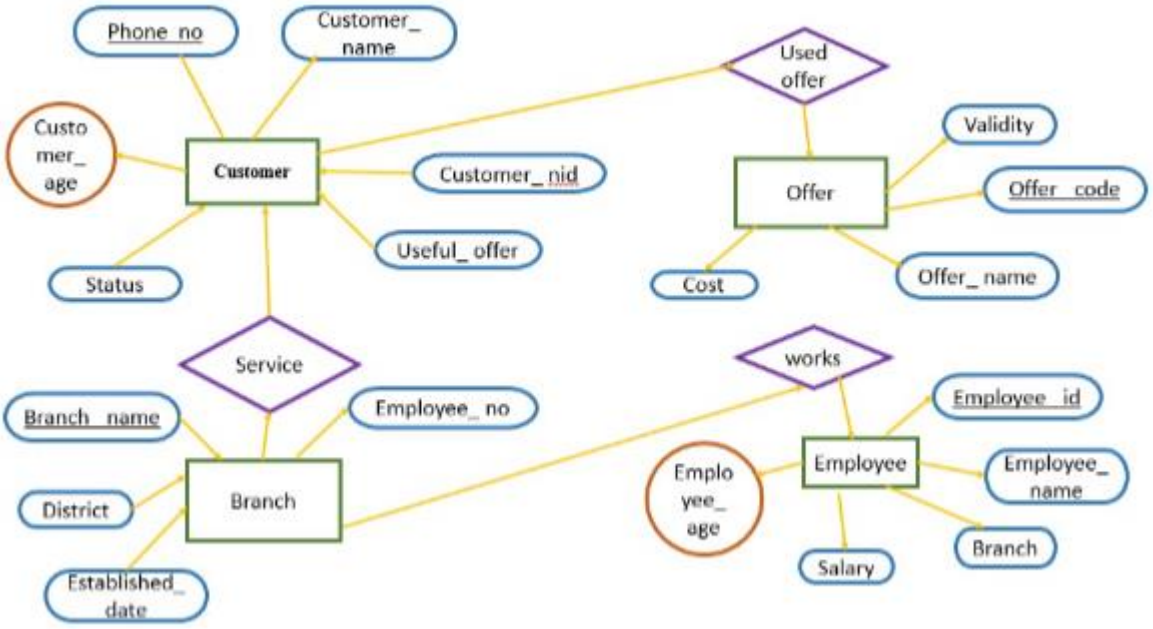
+ Options

	Phone_no	Customer_name	Customer_age	Customer_NID	Status	Useful_offer
Edit Copy Delete	0191136708	Abir	33	5712397456	Pre-Paid	0-12
Edit Copy Delete	01911635646	Maruf	24	6532417890	Pre-Paid	0-12
Edit Copy Delete	01922364101	Ross	30	5620149730	Pre-Paid	0-36
Edit Copy Delete	01927889401	Sohel	28	5103694627	Post-Paid	0-21
Edit Copy Delete	01928090456	Kabir	42	81473201985	Post-Paid	0-12
Edit Copy Delete	01930692431	Samia	38	8701364592	Pre-Paid	0-19
Edit Copy Delete	01934721222	Mahi	43	2877436910	Post-Paid	0-17
Edit Copy Delete	01946102784	Kalam	52	8401119124	Pre-Paid	0-63
Edit Copy Delete	01982736945	Karim	28	5715420130	Pre-Paid	0-35
Edit Copy Delete	01997432105	Rumi	45	2186307412	Post-Paid	0-12

Fig-17

Explanation: When we need to drop an attribute or column in the table, we can use "ALTER" keyword. Here I want to drop Branch column from the customer_info table. So, I use ALTER keyword.

ER – Diagram



Note: Customer_ age is an example of derived attribute. The symbol of derived attribute is dashed ellipse. So, the symbol of customer_ age should be dashed ellipse. But in our power point dashed ellipse symbol is not available. So we use circle symbol as alternative of dashed ellipse to mention customer_ age that is derived attribute.

Now I am going to described relationship between the tables below:

There can be four types of relationship between tables in a database. They are **One to one, one to many, many to one and many to many.**

One to one: Here we can see one to one relationship between customer table and branch table and also between customer table and employee table. At a time one customer can get service from one branch and at a time one customer get service from one employee. So, this is one to one relationship.

One to many: Here one to many relationship is between branch table and employee table. In one branch there have many employees. But it's not possible that at a time one employee can work in many branches. So, it is one to many relationships.

Many to one: Many to one relationship is opposite of one to many relationship. In same way we can say that, at a time many employees can work in one branch. So, this is many to one relationship.

Many to many: Between customer table and offer table we can see many to many relationship. At a time one customer can use many offers. And one offer can use many customers. So it is many to many relationships.

Banglalink Website

Landing page:
We make a demo website of **Banglalink** using HTML, CSS and PHP.

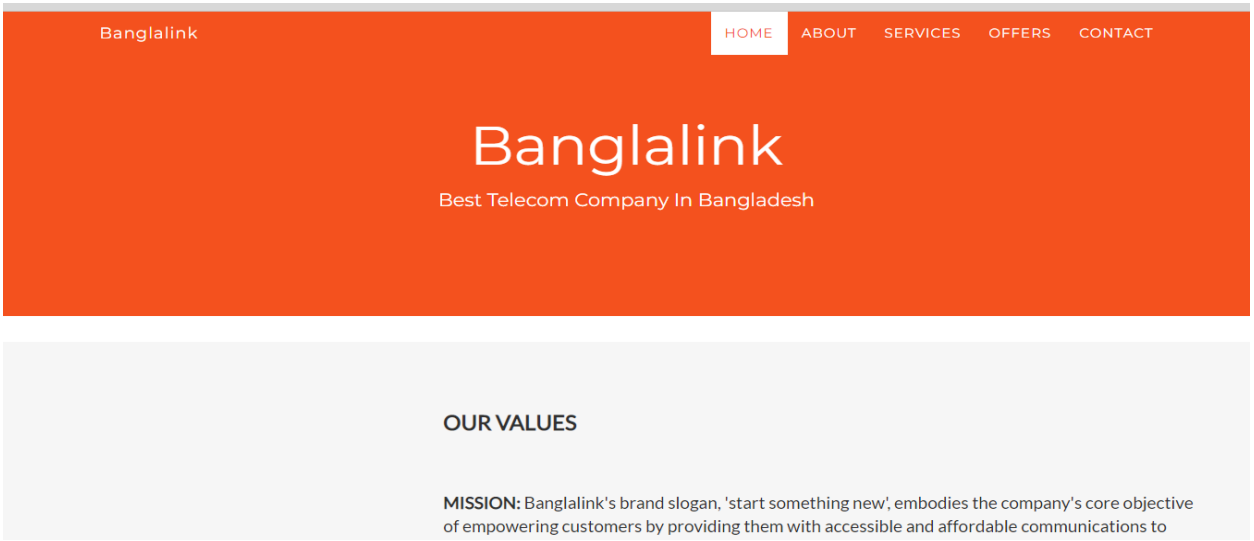


Fig-18

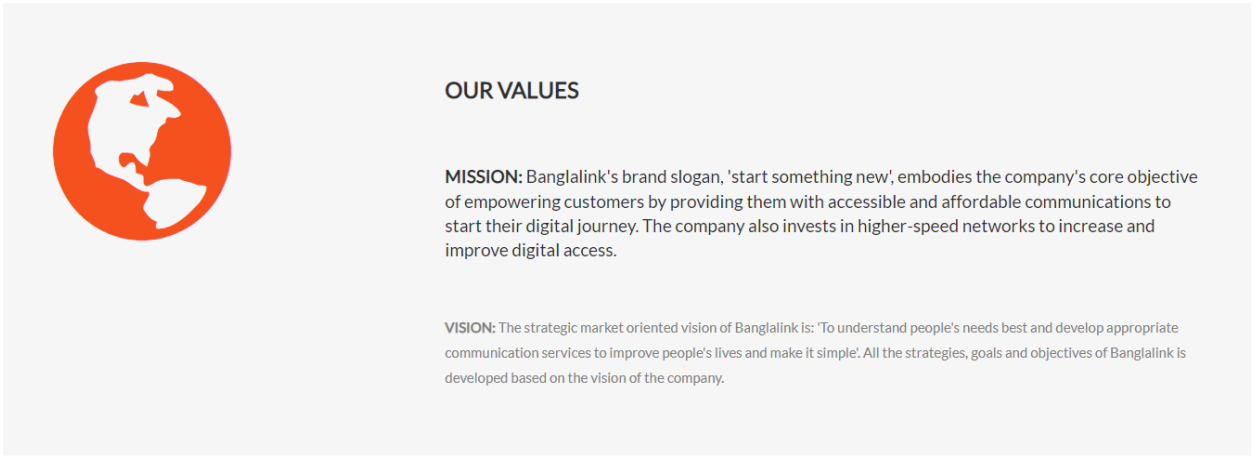


Fig-19

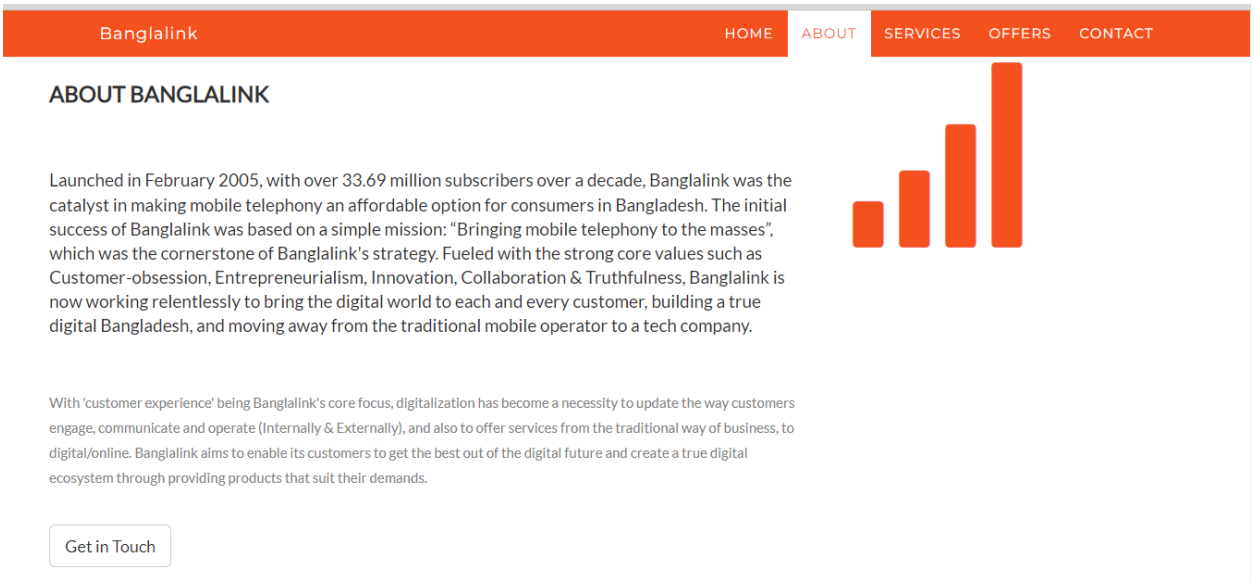

Banglalink
HOME
ABOUT
SERVICES
OFFERS
CONTACT
ABOUT BANGLALINK
Launched in February 2005, with over 33.69 million subscribers over a decade, Banglalink was the catalyst in making mobile telephony an affordable option for consumers in Bangladesh. The initial success of Banglalink was based on a simple mission: “Bringing mobile telephony to the masses”, which was the cornerstone of Banglalink's strategy. Fueled with the strong core values such as Customer-obsession, Entrepreneurialism, Innovation, Collaboration & Truthfulness, Banglalink is now working relentlessly to bring the digital world to each and every customer, building a true digital Bangladesh, and moving away from the traditional mobile operator to a tech company.
With 'customer experience' being Banglalink's core focus, digitalization has become a necessity to update the way customers engage, communicate and operate (Internally & Externally), and also to offer services from the traditional way of business, to digital/online. Banglalink aims to enable its customers to get the best out of the digital future and create a true digital ecosystem through providing products that suit their demands.
Get in Touch

Fig-20

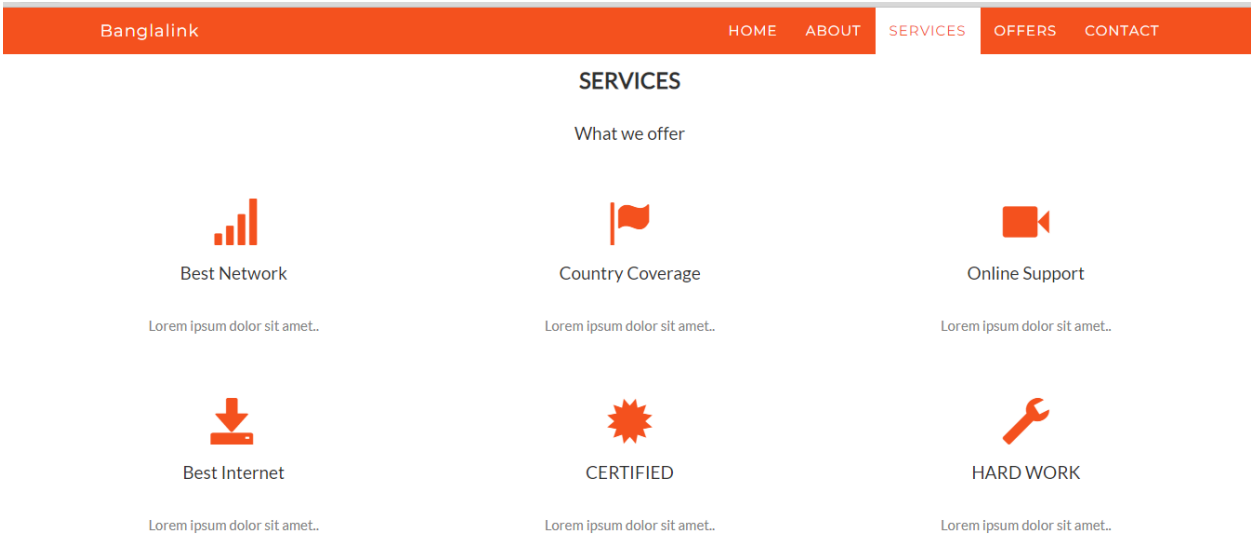

Banglalink
HOME
ABOUT
SERVICES
OFFERS
CONTACT
SERVICES
What we offer
Best Network
Lorem ipsum dolor sit amet..
Country Coverage
Lorem ipsum dolor sit amet..
Online Support
Lorem ipsum dolor sit amet..
Best Internet
Lorem ipsum dolor sit amet..
CERTIFIED
Lorem ipsum dolor sit amet..
HARD WORK
Lorem ipsum dolor sit amet..

Fig-21

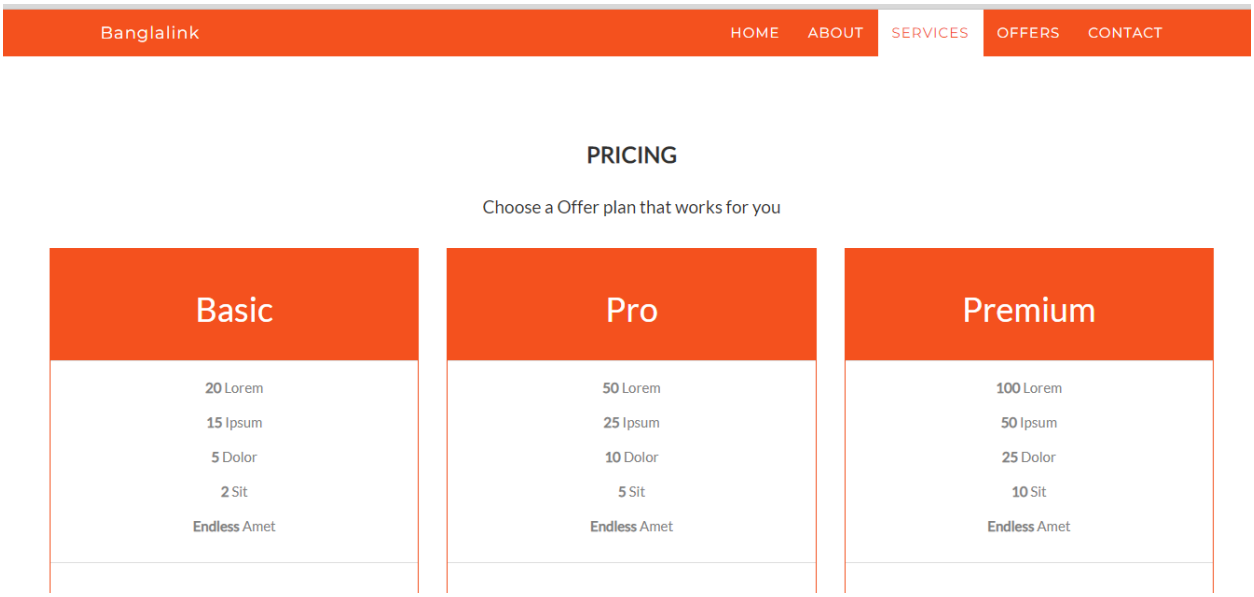


Fig-22

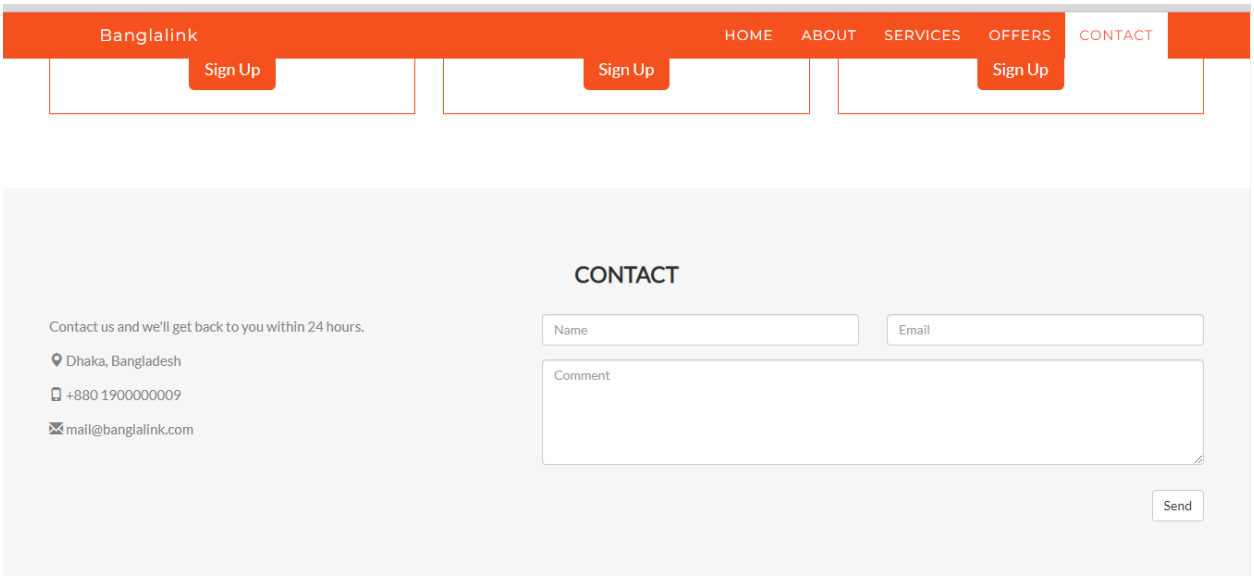


Fig-23

Explanation:

The HyperText Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

Here we can see a fronted page of **Banglalink** that is shown at **Banglalink's** website. Suppose when a customer or person wants to know about **Banglalink** they can find the fronted page. In order to get information about **Banglalink** Registration, New numbers, Offers, GP Services, Branch Address, Hotline that are shown serially at the left side of

fronted page. **Banglalink** Registration is linked to the registration form that can use customer to buy new SIM card. If a customer click on "**Banglalink** Registration", they can see the registration form arrived in front of him. I show registration form in the next page.

"Registration Form for NEW SIM"

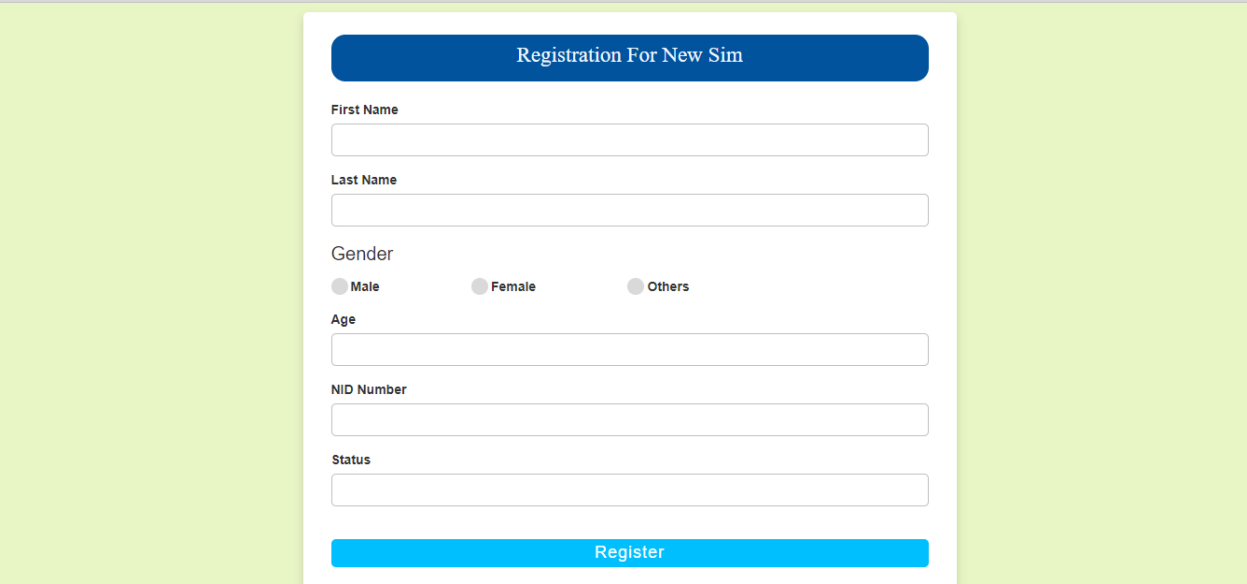


Fig-24

Explanation:

Here we can see there is a registration form of **Banglalink** that we collected from their website. Basically this page is made using "HTML" and "CSS".

When a customer wants to buy a SIM of "**Banglalink** " Telco operator, that person need to fill the form. After filling the form correctly, he need to press on "Submit" button. By doing all the steps the registration will complete successfully. When registration completed a screen is arrived that registration successful in front of customer .A successful registration screen arrives after registration form on customer. That is basically made using HTML.

When a new customer completed the form and fullfil the form by updating all of his information, all the information will be stored in **Banglalink's** database for further uses or for their safety purposes. A connection is made between **Banglalink** database, fronted page and form using PHP. Directly connection is made between GP database, fronted page and form using PHP.

Fig-25

Explanation:

Here we can see a confirmation page that is basically collected from the **Banglalink's** website. The following page is called the confirmation page and created by HTML. When a customer, successfully insert his information to buy SIM, the above confirmation page arrived on customer. It means that all of his information is stored in database and his procedure for by a new sim is successfully done and whenever for further purposes if his information needed it will be collected from that database. But one more thing as his information is stored that person will not be able to see that but he may know about it.

Conclusion

So finally we are done without project and we did it successfully. As we worked as a team and my team members are so much cooperative and they done their work perfectly and on time. Working on this project was very much interesting cause there are some new things that I never did and by doing this project we learned the used of SQL, HTML, CSS and PHP.ad our project is based on Telco operator, we clearly showed here how one customer can get any kind of services and the registration procedure and many more from the **Banglalink** operator. In this project we had to create so many tables, even we also had to work with SQL even we also worked with ER diagram and the relationship between ER Diagram and the tables. Lastly we discussed and briefly mentioned the procedure how a customer can get or buy SIM from the **Banglalink** company is using HTML and even we mentioned how his information is stored in the Database System. Hope so everyone will get their desire services and will be satisfied by **Banglalink**. We tried our best for this project and tried to do best in Telco operator project. Thanks to my teammates and even also our honorable faculty for giving us such a project which will help us in many ways.

1. **Introduction, All Explanation and Conclusions writing are done by Sadia Afrin (2018-3-55-007).**
2. **Database of Banglalink and SQL Operation writing are done by Sanjida Simla (2019-2-50-007).**
3. **Banglalink website, HTML, CSS, PHP writing are done by Fahmid Imtiaz (2019-1-55-013).**