CONSULTANCY MANAGEMENT SYSTEM

Advance Data Base Design

FAB5

Sacred Heart University

School of Computer Science & Engineering

The Jack Welch College of Business & Technology

Submitted To:

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CS603-D

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INTRODUCTION

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1.1 NAME OF TEAM MEMBERS EMAIL ADDRESS

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1.2 INTRODUCTION OF TEAM MEMBERS:

MANISHA BANDI:

I have completed my under graduation in the stream of Computer Science, and I had 2+ years of IT Experience as Systems Analyst in Sonata Software Limited. I have technical skills of Java, MSQL and I am interested to learn Python, Machine Learning. I want to work with the people who are technically strong and proactive which helps to build rapo between us.

VISHWAPRASAD REDDY:

I did my Bachelor of Engineering in the stream of Computer Science & Engineering. I worked in Amazon for 18 months as Transaction Risk Investigator, which deals with the online fraud happening on the customer's account which needs to be prevented. I have programming skills of Core Java, Java Database Connectivity and skilled on MySQL tool.

SHASHANK REDDY:

I did my under graduation in the field of computer science and engineering. I have technical skills in C, Python and Web designing and I am interested in Network security. I like to work people who are passionate and enjoy helping each other.

VENKATA SUCHARITHA:

I did my under graduation in bachelor of commerce in computer science. I hold an experience of 2+ years in accounts payable field in Accenture as a Transaction Processing Analyst where I have worked on tools like SAP ERP, Oracle. I am interested to learn new technologies further in this field and looking forward to interacting more with people which helps to gain good knowledge.

TEJESWAR JULAKANTI:

I did my under graduation in Information Technology from VR Siddhartha Engineering College. Later, I was recruited in TCS as RPA developer and had a work experience of 15 months. I have relevant technical knowledge in C++, Python, .net programming. I would love to work with people who has decision making skills and passion towards knowing new things which helps ourselves to gain good knowledge and experience.

CONSULTANCY MANAGEMENT SYSTEM

2.1 Objectives of CMS:

Consultancy management system (CMS) includes in enrolling the consultants and storing their details. It is easy to use and is designed to upgrade each consultant's skill with real time projects.

CMS basically uses every consultant's data where they are selected based on the client requirements. Details like Skills and certifications are compared with client's project requirements.

This project develops a software that helps each consultant connect with the various clients and offer good job role in their company.

The main features of the system are storing client details, job details, skills required, certifications completed. CMS specifies the database where it contains rows and columns in the form of tables. These databases contain various datatypes, and attributes. The database has tables which contains different fields which describe its contents. The database is further explained in-depth with all fields used data types, limitations available, Primary key, foreign key.

2.2 Merits of CMS:

a. Establish a collaborative relationship with clients.
b. Helps to get attention to developing the real time project and relationships.
c. CMS is designed for skill development, to train on different technologies and different skill sets and assigning projects based on the client skill set, which helps for upgrading of skills.

2.3 GitHub Repository Address:

https://github.com/ManishaReddyBandi?tab=repositories

2.4.1 Entity Relationship Model (ER Model):

An Entity Relationship model (ER model) is design or a blueprint of a database. It illustrates how entities relate to each other within the system. ER diagrams are used most often used to design and debug the databases. They are a set of symbols, rectangles and ovals which are interconnected of entities and relationships and their attributes.

ER modeling is basically a database modeling method, produces type of conceptual schema (structure that represents the logical view of entire database). It also develops a very simple and easy design view of data.

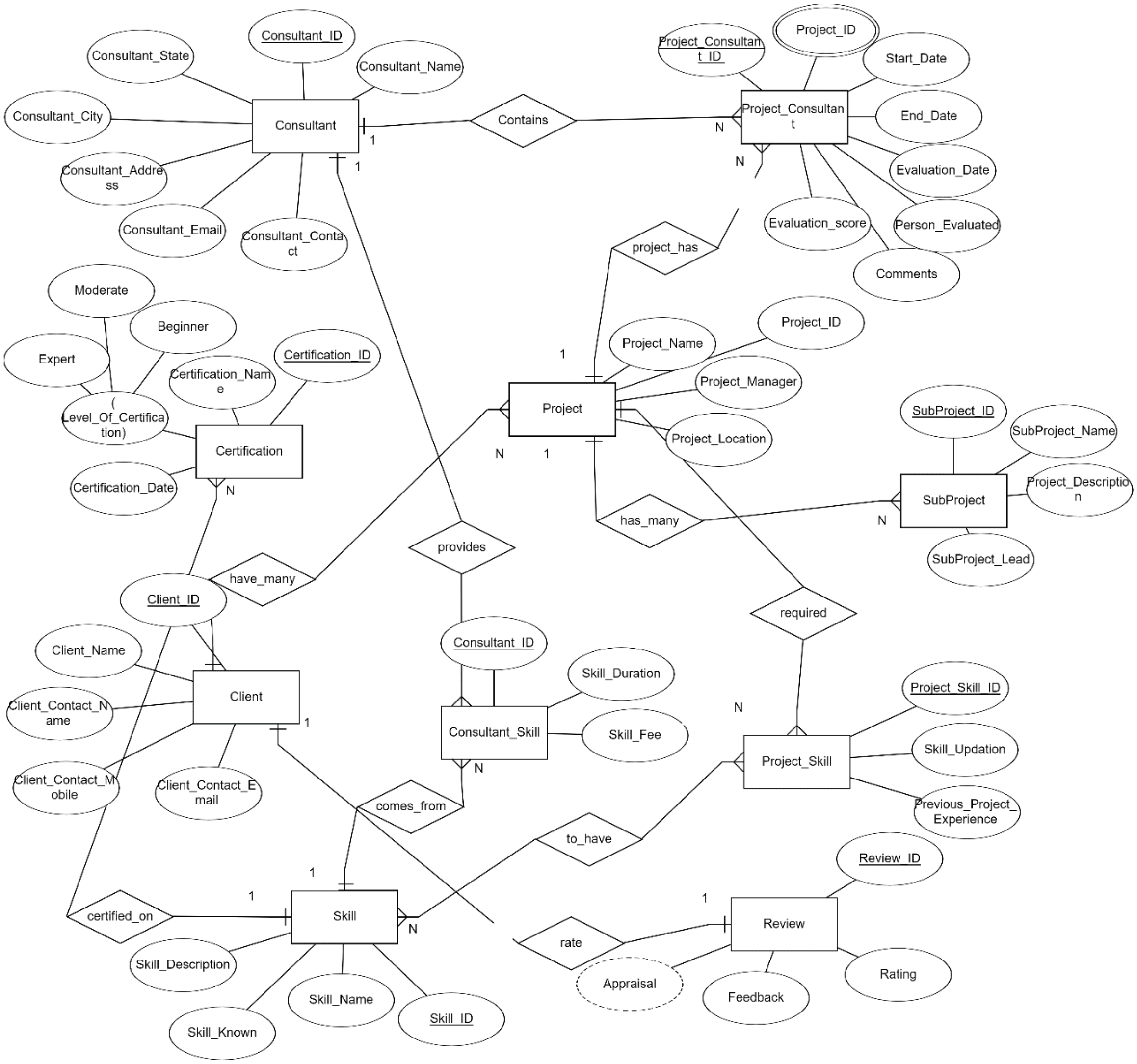
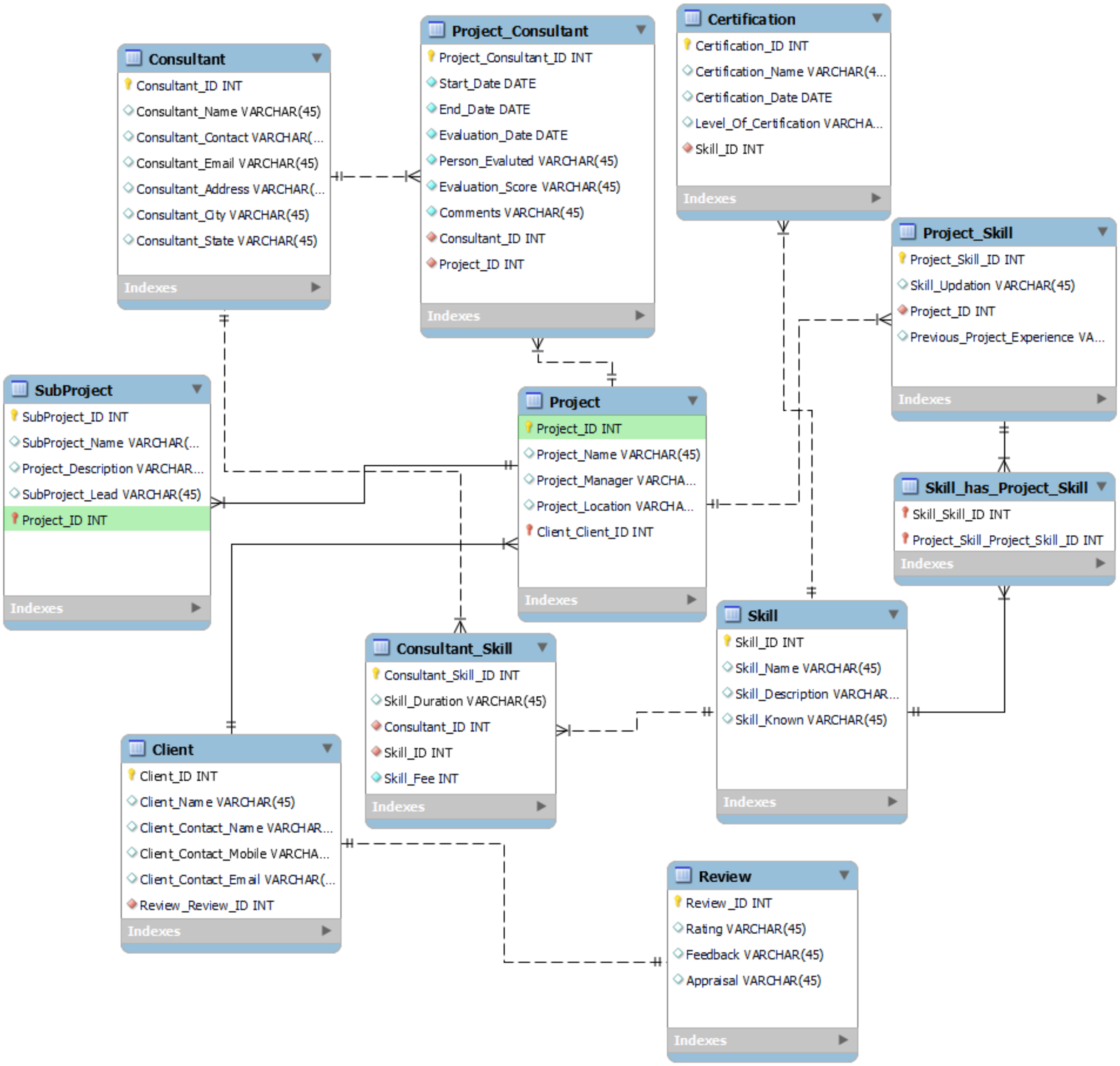


Figure (1).[2] Entity Relationship Model

2.5 Enhanced Entity Relation (EER):

Enhanced ER models are helpful tools for designing databases with high-level models. This ER model represents the database that we use for the project. The tables represent the schema. Each rectangle in the table describes the attributes and constraints of that table in the schema. Connecting lines between the tables define the relationship with other table, each relation has a constraint that connect one with the other.



Figure(2). Enhanced Entity Relationship Diagram

2.5.1 Description of Entities in CMS:

(a) Consultant:

Consultant entity stores all the details related to Consultancy like Consultant ID, Name, Address, City, State, Contact, Mail. It has One to Many (1: N) relationship with Consultant_Skill and Project_Consultant entities by having a common attribute as Consultant_ID.
Consultant_ID: This attribute stores information of the unique ID of consultant.
Consultant _Name: This attribute stores the name of the consultant.
Consultant_Contact : This attribute stores information of the contact details.
Consultant_Email : This attribute stores email information of the consultant.
Consultant_Address: This attribute stores the address of the consultant.
Consultant_City: This attribute stores the city details of the consultant.
Consultant_State : This attribute stores the state details of the consultant.

(b) Consultant_Skill:

Consultant Skill entity stores the details of skill and Consultant like Consultant_Skill_ID, Skill_ID, Skill_Duration, Skill_Fee. It has Many to One (N:1) relationships with the Skill and consultant entities with Consultant_ID as Primary key.
Consultat_Skill_ID:It stores the Consultancy Skill ID. For each consultancy they have their own skill IDs.
Skill_Duration: This attribute stores the duration of the particular course.
Skill_Fee: This attribute stores fee structure details of Consultant_Skill entity.

(c) Skill:

Skill entity stores the skill details like Skill ID, Name, and short Description of each skill. It has One to Many (1: N) relationship with Project, Certification and Consultant_Skill entities. Skill_ID acts a unique ID. Certification is given based on completion of each skill.
Skill_ID: For each skill a unique ID is set to identify.
Skill_Name: Stores the Name of the Skill
Skill_Description: Describes about the skill known and where to use them in the project
Skill_Known: Lists the skills know by the consultant

(d) Certification:

Certification refers to the confirmation of certain characteristics of an object, person or organization. Certification Entity stores all the details which displayed in Certificate after completion of training of each skill, it has attributes like Certification_ID, Certification_Name, Certification_Date, Skill_ID and Level_of_Certification. Certification can be given based on Level of skills learned.
Certification_ID: Each Certification is represented by its unique identification with Certification_ID.
Certification_Name: Represents the name of the Certification Certification_Date: Represents the start date and completion date.
Level_of_certification: represents the level of certification and their category of certification.

(e) Client:

Client entity stores the data related to Client like Client_ID, Name, Contact_Name, Contact_Number, Email Address. It has one to One (1: 1) relationship with Consultant and Project entities.
Client_ID: Stores the unique ID of the Client.
Client_Name: Stores the Name of the Client.
Contact_Name: Stores the Name of the person to contact that represents the client.
Contact_Number: Stores the number of the person to contact that represents the client.
Email Address: Stores the Email address of the person.

(f) Project Skill:

Project skills are a group of skills needed to initiate, plan, and execute a project. Project skill entity stores the data related to project and Skills like Project_ID, skill_ID, skill_Updation. It has Many to One(N:1) relationship with Project and Skill table. It has update skills option to update skills in future.
Project_Skill_ID: Stores the unique ID of the Project.
Skill_Updation: Adding a new skill or updating an existing one is been stored here.
Previous_Project_Experience: Every Consultant's who has the previous work experience is been listed here.

(g) Project Consultant:

Project Consultant allocates the project and it stores the details related ton project like Consultant_ID, Project_ID, Start_Date, End_Date, Evaluation_Date, Person_Evaluted, Evalution_Score and comments. It has Many to One(N:1) relationship with Consultant and Project.
Project_Consultant_ID: This attribute uniquely identifies the Consultant ID from different consultancies in the Project_Consultant Entity.
Start_Date : This attribute provides the information about Project start date. End_Date :This attribute provides the information about Project end date.
Person_Evaluated :This attribute provides the information about the person who is evaluating the project. Evaluation_Score: This attribute provides the score of the project which is evaluated in the Project_Consultant Entity.

(h) Project:
Project entity stores the details of the project, Client and the manager who works on that project. It has attributes like Project_ID, Project_Manager, Client_ID, Project_Location, Project_Name.
It has One to Many (1:N) relationship with Subproject, Project_Consultant, Project_Skill and Many to One(N:1) relationship with client entity. Project is allocated if the skills in skill table matches with Project Skill table.
Project_Id: A project ID is a unique string used to differentiate your project from all others.
Project Manager: Project manager is responsible for the planning and execution and completion of a Project
Project name - project name used for representing the project
Project_Location: Represents the location of project, either its online or offline or physical address.

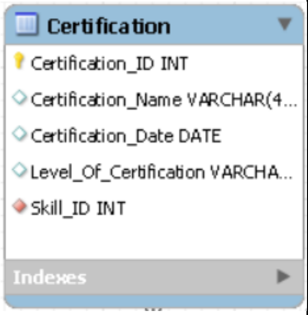
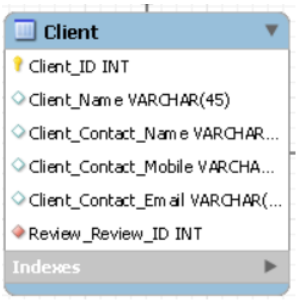
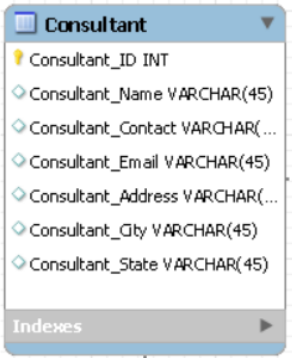
(i) Sub Project:

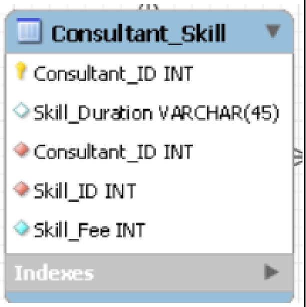
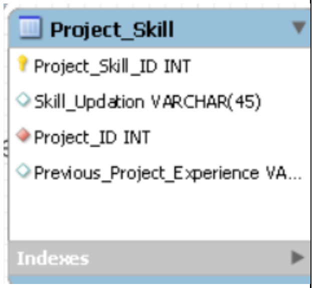
A subproject is a project that is a part of a larger project. Sub Project entity stores all Subproject details. Sub project is assigned after allocation of Project. It has attributes like Subproject_ID, Subproject_Name, Project_Id, Project_Description, SubProject_Lead. It has Many to One (N:1) relationship with Project Entity.
Subroject_ID: Contains the Project ID acts as unique key
SubProject_Lead:Represents the Lead name of project
Subproject_Name: Represents the Name of the Subproject
Project_Description: : Describes about the Project and its functions and where to use them.

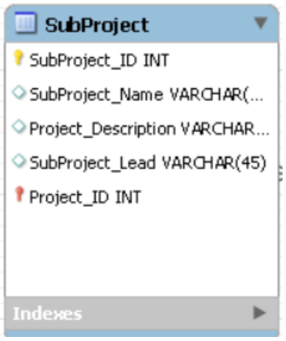
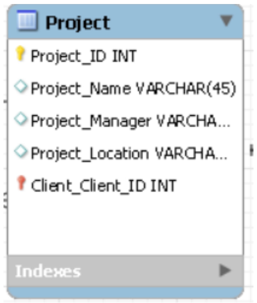
(j)Review:

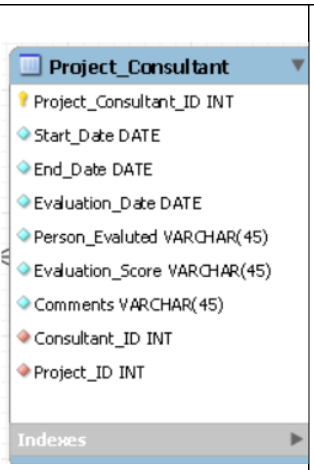
The return of information about the result of a performance. Review entity stores all the details of Client review like ClientID, Feedback, Rating, Appraisal.Client gives feedback, rating and Appraisal based on performance. It has Oneto One (1:1) relationship with Client.
Review_ID: Each review given by the client to the consultant has been stored under unique ID
Feedback: Client’s feedback for the consultant is been stored here.
Rating: Based on the Rating provided by Client, it is easy to search for the consultant under the rating category.
Appraisal: Based on the consultant performance, it is observed that a consultant must improve his/her skills.

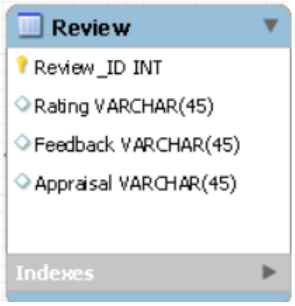
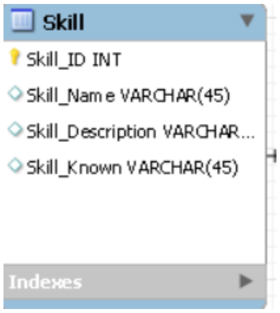
2.6 SQL DATABASE DEVELOPMENT:

Table	Query	EER model for Table	Description	PKey	FKey
Certification	CREATE TABLE \`certification\`(\`Certification_ID\` int NOT NULL, \`Certification_Name\` varchar(45) DEFAULT NULL, \`Certification_Date\` date DEFAULT NULL, \`Level_Of_Certification\` varchar(45) DEFAULT NULL, \`Skill_ID\` int NOT NULL, PRIMARY KEY (\`Certification_ID\`), KEY \`fk_Certification_Skill1_idx\` (\`Skill_ID\`),CONSTRAINT \`fk_Certification_Skill1\` FOREIGN KEY (\`Skill_ID\`) REFERENCES \`skill\` (\`Skill_ID\`))	 Certification Certification_ID INT Certification_Name VARCHAR(4... Certification_Date DATE Level_Of_Certification VARCHA... Skill_ID INT Indexes	The certification table contains following attributes with the respective datatypes which are Certification_ID(int), Certification_Name(varchar), Certification_Date(Date), Level_Of_Certification(varchar) Certification entity stores all the details which displayed in certificate after completion of training of each skill. The primary key is Certification_ID and the foreign key is Skill_ID. Level_Of_Certification attribute is the derived attribute for this table. Certification table is related to Skill table with Many to One (N:1) relationship	Yes	Yes
Client	CREATE TABLE \`client\` (\`Client_ID\` int NOT NULL, \`Client_Name\` varchar(45) DEFAULT NULL, \`Client_Contact_Name\` varchar(45) DEFAULT NULL, \`Client_Contact_Mobile\` varchar(45) DEFAULT NULL, \`Client_Contact_Email\` varchar(45) DEFAULT NULL, PRIMARY KEY (\`Client_ID\`)) ;	 Client Client_ID INT Client_Name VARCHAR(45) Client_Contact_Name VARCHAR... Client_Contact_Mobile VARCHA... Client_Contact_Email VARCHAR(... Review_Review_ID INT Indexes	The certification table contains following attributes with the respective datatypes which are Client_ID(int), Client_Name(varchar), Client_Contact_Name(varchar), Client_Contact_Mobile(varchar), Client_Contact_Email(varchar) The purpose of this table is to store the client data. The primary key is Client_ID and it has no foreign key. The Client table has One to Many (1:N) relationship with Project and One to One (1:1) relationship with Review table.	Yes	No
Consultant	CREATE TABLE \`consultant\` (\`Consultant_ID\` int NOT NULL, \`Consultant_Name\` varchar(45) DEFAULT NULL, \`Consultant_Contact\` varchar(45) DEFAULT NULL, \`Consultant_Email\` varchar(45) DEFAULT NULL, \`Consultant_Address\` varchar(45) DEFAULT NULL, \`Consultant_City\` varchar(45) DEFAULT NULL, \`Consultant_State\` varchar(45) DEFAULT NULL, PRIMARY KEY (\`Consultant_ID\`)) ENGINE=InnoDB DEFAULT CHARSET=utf8mb3;	 Consultant Consultant_ID INT Consultant_Name VARCHAR(45) Consultant_Contact VARCHAR(... Consultant_Email VARCHAR(45) Consultant_Address VARCHAR(... Consultant_City VARCHAR(45) Consultant_State VARCHAR(45) Indexes	The certification table contains following attributes with the respective datatypes which are Consultant_ID(int), Consultant_Name(varchar), Consultant_Contact(varchar), Consultant_Email(varchar), Consultant_Address(varchar), Consultant_City(varchar), Consultant_State(varchar). Consultant entity stores all the details related to consultancy particulars. It has Consultant_ID attribute as primary key. It has One to Many(1:N) relationship with Project_Consultant and Consultant_Skill tables.	Yes	No

Consultant_Skill	CREATE TABLE `consultant_skill` (`Consultant_ID` int NOT NULL, `Skill_Duration` varchar(45) DEFAULT NULL, `Skill_ID` int NOT NULL, PRIMARY KEY (`Consultant_ID`), KEY `fk_Consultant_Skill_Consultant1_idx` (`Consultant_ID`), KEY `fk_Consultant_Skill_Skill1_idx` (`Skill_ID`), CONSTRAINT `fk_Consultant_Skill_Consultant1` FOREIGN KEY (`Consultant_ID`) REFERENCES `consultant` (`Consultant_ID`), CONSTRAINT `fk_Consultant_Skill_Skill1` FOREIGN KEY (`Skill_ID`) REFERENCES `skill` (`Skill_ID`));	 Consultant_Skill Consultant_ID INT Skill_Duration VARCHAR(45) Consultant_ID INT Skill_ID INT Skill_Fee INT Indexes	The certification table contains following attributes with the respective datatypes which are Consultant_Skill_ID(int), Skill_duration(varchar), Skill_Fee(int) Consultant Skill entity stores the details of skill. Consultant_Skill_ID as primary key and Consultant_ID and Skill_ID are foreign keys. It has Many to One (N:1) relationships with the Skill and consultant entities with Consultant_ID as Primary key.	Yes	Yes
Project_Skill	CREATE TABLE `project_skill` (`Project_Skill_ID` int NOT NULL, `Skill_Updation` varchar(45) DEFAULT NULL, `Project_ID` int NOT NULL, `Skill_ID` int NOT NULL, PRIMARY KEY (`Project_Skill_ID`), KEY `fk_Project_Skill_Skill1_idx` (`Skill_ID`), KEY `fk_Project_Skill_Project1` (`Project_ID`), CONSTRAINT `fk_Project_Skill_Project1` FOREIGN KEY (`Project_ID`) REFERENCES `project` (`Project_ID`), CONSTRAINT `fk_Project_Skill_Skill1` FOREIGN KEY (`Skill_ID`) REFERENCES `skill` (`Skill_ID`));	 Project_Skill Project_Skill_ID INT Skill_Updation VARCHAR(45) Project_ID INT Previous_Project_Experience VA... Indexes	The certification table contains following attributes with the respective datatypes which are Project_Skill_ID(int), Skill_Updation(varchar), Previous_Project_Experience(varchar) Project skills are a group of skills needed to initiate, plan, and execute a project. Project skill entity stores the data related to project. It has Project_Skill_ID as primary key and Projrct_ID from Project entity as foreign key. It has Many to One(N:1) relationship with Project and Skill table. It has update skills option to update skills in future.	Yes	Yes

Sub_Project	CREATE TABLE \`subproject\` (\`SubProject_ID\` int NOT NULL, \`SubProject_Name\` varchar(45) DEFAULT NULL, \`Project_Description\` varchar(45) DEFAULT NULL, \`SubProject_Lead\` varchar(45) DEFAULT NULL, \`Project_ID\` int NOT NULL, PRIMARY KEY (\`SubProject_ID\`,\`Project_ID\`), KEY \`fk_SubProject_Project1_idx\` (\`Project_ID\`), CONSTRAINT \`fk_SubProject_Project1\` FOREIGN KEY (\`Project_ID\`) REFERENCES \`project\` (\`Project_ID\`));	 SubProject SubProject_ID INT SubProject_Name VARCHAR(... Project_Description VARCHAR... SubProject_Lead VARCHAR(45) Project_ID INT Indexes	The certification table contains following attributes with the respective datatypes which are SubProject_ID(int), SubProject_Name(varchar), Projrct_Description(varchar), SubProject_Lead(varchar) A subproject is a project that is a part of a larger project. Sub Project entity stores all Subproject details. Sub project is assigned after allocation of Project. Th has SubProject_ID as primary key and Project_ID from Project entity is the foreign key. It has Many to One (N:1) relationship with Project Entity.	Yes	Yes
Project	CREATE TABLE \`project\` (\`Project_ID\` int NOT NULL, \`Project_Name\` varchar(45) DEFAULT NULL, \`Project_Manager\` varchar(45) DEFAULT NULL, \`Project_Location\` varchar(45) DEFAULT NULL, \`Client_Client_ID\` int NOT NULL, PRIMARY KEY (\`Project_ID\`,\`Client_Client_ID\`), KEY \`fk_Project_Client1_idx\` (\`Client_Client_ID\`), CONSTRAINT \`fk_Project_Client1\` FOREIGN KEY (\`Client_Client_ID\`) REFERENCES \`client\` (\`Client_ID\`)) ;	 Project Project_ID INT Project_Name VARCHAR(45) Project_Manager VARCHA... Project_Location VARCHA... Client_Client_ID INT Indexes	The certification table contains following attributes with the respective datatypes which are Project_ID(int), Project_Name(vachar), Project_Manager(varchar), Project_Location(varchar) Project entity stores the details of the project, Client and the manager who works on that project. Project_ID is the primary key and Client_ID is the foreign key from Client Entity. It has One to Many (1:N) relationship with Subproject, Project_Consultant, Project_Skill and Many to One(N:1) relationship with client entity. Project is allocated if the skills in skill table matches with Project Skill table.	Yes	Yes

Project_Consultant	CREATE TABLE `project_consultant` (`Project_Consultant_ID` int NOT NULL, `Start_Date` date NOT NULL, `End_Date` date NOT NULL, `Evaluation_Date` date NOT NULL, `Person_Evaluted` varchar(45) NOT NULL, `Evaluation_Score` varchar(45) NOT NULL, `Comments` varchar(45) NOT NULL, `Consultant_ID` int NOT NULL, `Project_ID` int NOT NULL, PRIMARY KEY (`Project_Consultant_ID`), KEY `fk_Project_Consultant_Consultant_idx` (`Consultant_ID`), KEY `fk_Project_Consultant_Project1_idx` (`Project_ID`), CONSTRAINT `fk_Project_Consultant_Consultant` FOREIGN KEY (`Consultant_ID`) REFERENCES `consultant` (`Consultant_ID`), CONSTRAINT `fk_Project_Consultant_Project1` FOREIGN KEY (`Project_ID`) REFERENCES `project` (`Project_ID`));	 Project_Consultant Project_Consultant_ID INT Start_Date DATE End_Date DATE Evaluation_Date DATE Person_Evaluted VARCHAR(45) Evaluation_Score VARCHAR(45) Comments VARCHAR(45) Consultant_ID INT Project_ID INT Indexes	The certification table contains following attributes with the respective datatypes which are Project_Consultant_ID(int), Start_Date(date), End_Date(date), Evaluation_Date(date), Person_Evaluated(varchar), Evaluation_Score(varchar), Comments(varchar) Project Consultant allocates the project and it stores the details related to project. Project_Consultant_ID is primary key whereas Consultant_ID from Consultant entity and Project_ID from Project entity are the foreign keys. It has Many to One(N:1) relationship with Consultant and Project.	Yes	Yes

Review	CREATE TABLE `review` (`Review_ID` int NOT NULL, `Rating` varchar(45) DEFAULT NULL, `Feedback` varchar(45) DEFAULT NULL, `Appraisal` varchar(45) DEFAULT NULL, `Client_ID` int NOT NULL, PRIMARY KEY (`Review_ID`), KEY `fk_Review_Client1` (`Client_ID`), CONSTRAINT `fk_Review_Client1` FOREIGN KEY (`Client_ID`) REFERENCES `client` (`Client_ID`)) ;	 Review Review_ID INT Rating VARCHAR(45) Feedback VARCHAR(45) Appraisal VARCHAR(45) Indexes	The certification table contains following attributes with the respective datatypes which are Review_ID(int), Rating(varchar), Feedback(varchar), Appraisal(varchar) It returns of information about the result of a performance. Review_ID is the primary key for Review entity. It has One to One (1:1) relationship with Client.	Yes	No
Skill	CREATE TABLE `skill` (`Skill_ID` int NOT NULL, `Skill_Name` varchar(45) DEFAULT NULL, 'Skill_Description` varchar(60) DEFAULT NULL, PRIMARY KEY (`Skill_ID`));	 Skill Skill_ID INT Skill_Nam e VARCHAR(45) Skill_Description VARCHAR... Skill_Known VARCHAR(45) Indexes	The certification table contains following attributes with the respective datatypes which are Skill_ID(int), Skill_Name(varchar), Skill_Description(varchar), Skill_Known(varchar) Skill entity stores the details of the skills that a person had or skills offered by the consultancy. Skill_ID is the primary key. It shares One to Many(1:N) relation with Consultant_Skill and Certification entities.	Yes	No

2.6 Project Objective:

The Consultant Management System or CMS is an online system where ADB does the following:

- advertise consulting services recruitment notices (CSRNs)
- recruit consultants
- manage contracts and framework agreements
- process consultants' performance evaluation

The main features of the system are storing client details, job details, skills required, certifications completed. CMS specifies the database where it contains rows and columns in the form of tables. These databases contain various datatypes, and attributes. The database has tables which contains different fields which describe its contents. The database is further explained in-depth with all fields used data types, limitations available, Primary key, foreign key.

This project develops a software that helps each consultant connect with the various clients and offer good job role in their company

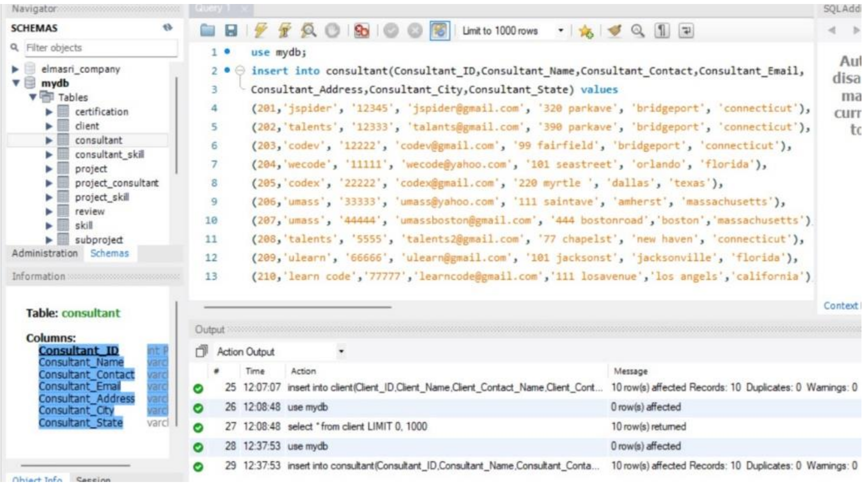
3.0 Importing Data:

We can import data into Database by making using of INSERT query into a specific table.

Syntax to insert row/instance into a table:

```
INSERT INTO table_name (column1, column2, column3, ...)
VALUES
(value1, value2, value3, ...),
(value1, value2, value3, ...),
(value1, value2, value3, ...);
```

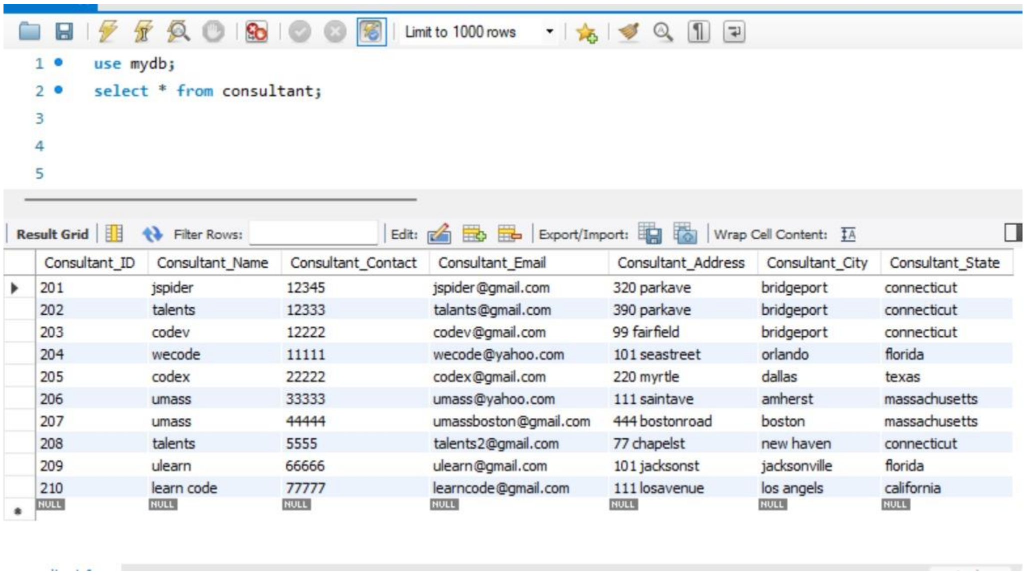
a. Consultant Table:



```sql
use mydb;
insert into consultant(Consultant_ID,Consultant_Name,Consultant_Contact,Consultant_Email,
Consultant_Address,Consultant_City,Consultant_State) values
(201,'jspider', '12345', 'jspider@gmail.com', '320 parkave', 'bridgeport', 'connecticut'),
(202,'talents', '12333', 'talants@gmail.com', '390 parkave', 'bridgeport', 'connecticut'),
(203,'codev', '12222', 'codev@gmail.com', '99 fairfield', 'bridgeport', 'connecticut'),
(204,'wecode', '11111', 'wecode@yahoo.com', '101 seastreet', 'orlando', 'florida'),
(205,'codex', '22222', 'codex@gmail.com', '220 myrtle ', 'dallas', 'texas'),
(206,'umass', '33333', 'umass@yahoo.com', '111 saintave', 'amherst', 'massachusetts'),
(207,'umass', '44444', 'umassboston@gmail.com', '444 bostonroad','boston','massachusetts')
(208,'talents', '5555', 'talents2@gmail.com', '77 chapelst', 'new haven', 'connecticut'),
(209,'ulearn', '66666', 'ulearn@gmail.com', '101 jacksonst', 'jacksonville', 'florida'),
(210,'learn code','77777','learncode@gmail.com','111 losavenue','los angels','california')
```

```
#   Time      Action                                                          Message
25  12:07:07  insert into client(Client_ID,Client_Name,Client_Contact_Name,Client_Cont...  10 row(s) affected Records: 10  Duplicates: 0  Warnings: 0
26  12:08:48  use mydb                                                        0 row(s) affected
27  12:08:48  select * from client LIMIT 0, 1000                              10 row(s) returned
28  12:37:53  use mydb                                                        0 row(s) affected
29  12:37:53  insert into consultant(Consultant_ID,Consultant_Name,Consultant_Conta...  10 row(s) affected Records: 10  Duplicates: 0  Warnings: 0
```

Fig: Inserting data into Consultant table

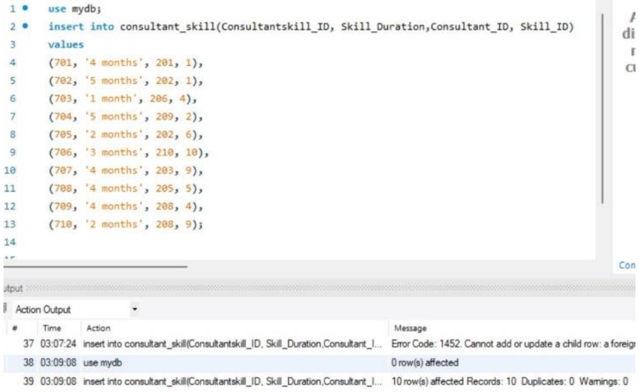


```sql
use mydb;
select * from consultant;
```

Consultant_ID	Consultant_Name	Consultant_Contact	Consultant_Email	Consultant_Address	Consultant_City	Consultant_State
201	jspider	12345	jspider@gmail.com	320 parkave	bridgeport	connecticut
202	talents	12333	talants@gmail.com	390 parkave	bridgeport	connecticut
203	codev	12222	codev@gmail.com	99 fairfield	bridgeport	connecticut
204	wecode	11111	wecode@yahoo.com	101 seastreet	orlando	florida
205	codex	22222	codex@gmail.com	220 myrtle	dallas	texas
206	umass	33333	umass@yahoo.com	111 saintave	amherst	massachusetts
207	umass	44444	umassboston@gmail.com	444 bostonroad	boston	massachusetts
208	talents	5555	talents2@gmail.com	77 chapelst	new haven	connecticut
209	ulearn	66666	ulearn@gmail.com	101 jacksonst	jacksonville	florida
210	learn code	77777	learncode@gmail.com	111 losavenue	los angels	california
NULL	NULL	NULL	NULL	NULL	NULL	NULL

Fig: Retrieving data from Consultant table using Select Command

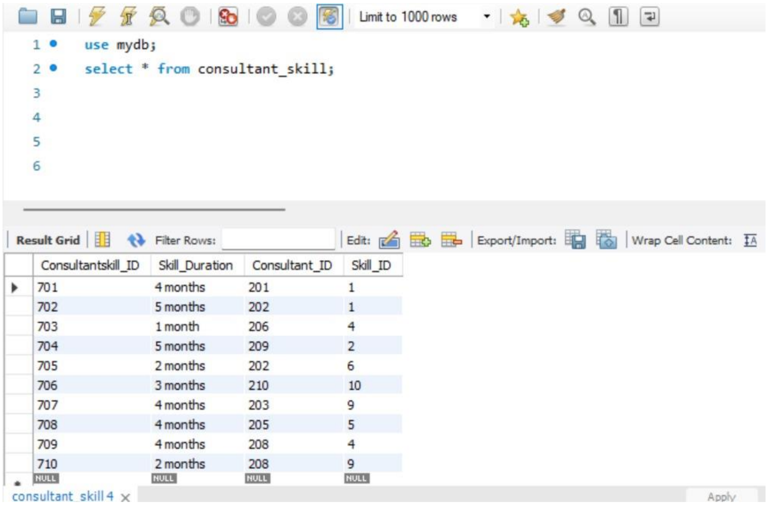
b.Consultant_skill Table:



```sql
use mydb;
insert into consultant_skill(Consultantskill_ID, Skill_Duration,Consultant_ID, Skill_ID)
values
(701, '4 months', 201, 1),
(702, '5 months', 202, 1),
(703, '1 month', 206, 4),
(704, '5 months', 209, 2),
(705, '2 months', 202, 6),
(706, '3 months', 210, 10),
(707, '4 months', 203, 9),
(708, '4 months', 205, 5),
(709, '4 months', 208, 4),
(710, '2 months', 208, 9);
```

```
#   Time      Action                                                          Message
37  03:07:24  insert into consultant_skill(Consultantskill_ID, Skill_Duration,Consultant_I...  Error Code: 1452. Cannot add or update a child row: a foreig
38  03:09:08  use mydb                                                        0 row(s) affected
39  03:09:08  insert into consultant_skill(Consultantskill_ID, Skill_Duration,Consultant_I...  10 row(s) affected Records: 10  Duplicates: 0  Warnings: 0
```

Fig**:** Inserting data into consultant skill table



```
use mydb;
select * from consultant_skill;
```

Consultantskill_ID	Skill_Duration	Consultant_ID	Skill_ID
701	4 months	201	1
702	5 months	202	1
703	1 month	206	4
704	5 months	209	2
705	2 months	202	6
706	3 months	210	10
707	4 months	203	9
708	4 months	205	5
709	4 months	208	4
710	2 months	208	9
NULL	NULL	NULL	NULL

Fig: Retrieving data from consultant skill table using Select command

c. Skill Table:

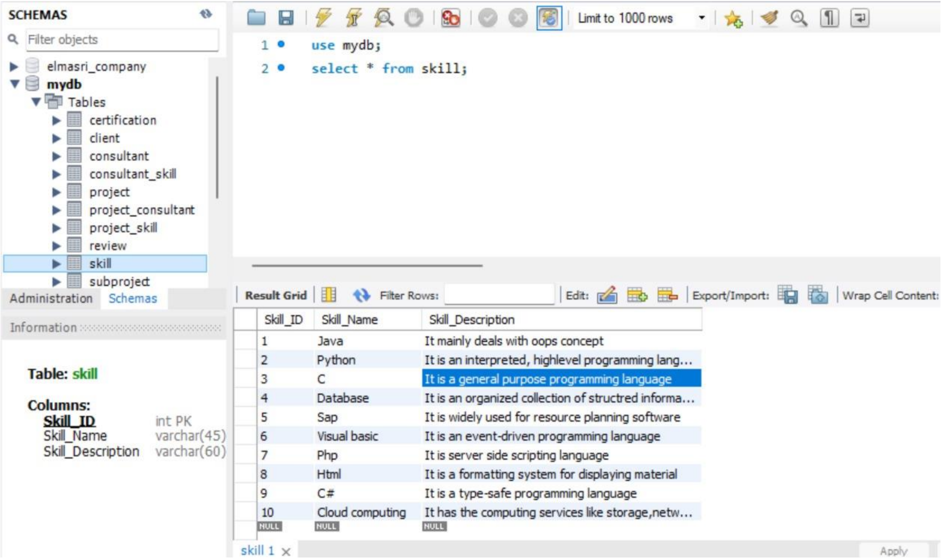


Table: skill

Columns:

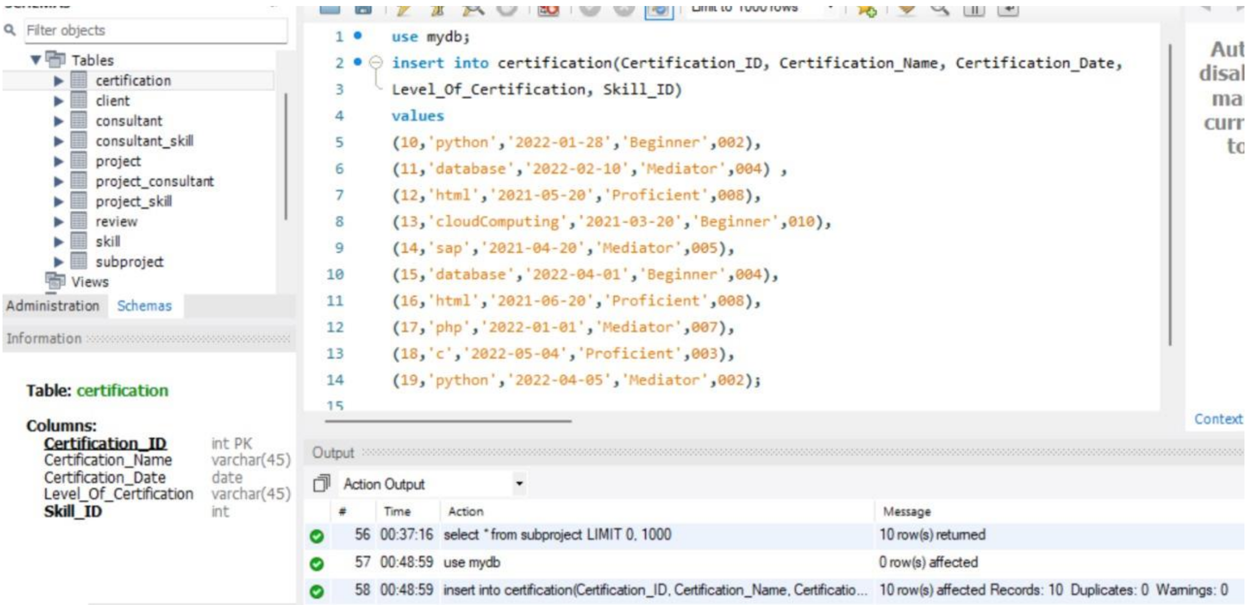
Skill_ID	int PK
Skill_Name	varchar(45)
Skill_Description	varchar(60)

```
use mydb;
select * from skill;
```

Skill_ID	Skill_Name	Skill_Description
1	Java	It mainly deals with oops concept
2	Python	It is an interpreted, highlevel programming lang...
3	C	It is a general purpose programming language
4	Database	It is an organized collection of structred informa...
5	Sap	It is widely used for resource planning software
6	Visual basic	It is an event-driven programming language
7	Php	It is server side scripting language
8	Html	It is a formatting system for displaying material
9	C#	It is a type-safe programming language
10	Cloud computing	It has the computing services like storage,netw...
NULL	NULL	NULL

Fig: Retrieving data from skill table using select command

d. Certificate Table:



```
use mydb;
insert into certification(Certification_ID, Certification_Name, Certification_Date,
Level_Of_Certification, Skill_ID)
values
(10,'python','2022-01-28','Beginner',002),
(11,'database','2022-02-10','Mediator',004) ,
(12,'html','2021-05-20','Proficient',008),
(13,'cloudComputing','2021-03-20','Beginner',010),
(14,'sap','2021-04-20','Mediator',005),
(15,'database','2022-04-01','Beginner',004),
(16,'html','2021-06-20','Proficient',008),
(17,'php','2022-01-01','Mediator',007),
(18,'c','2022-05-04','Proficient',003),
(19,'python','2022-04-05','Mediator',002);
```

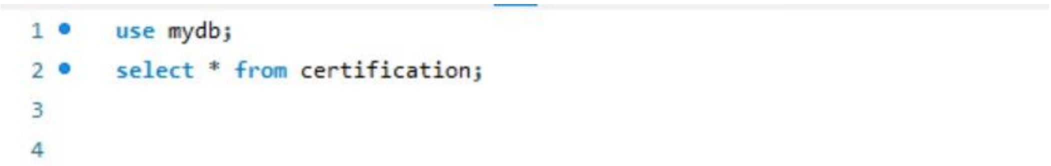
Table: certification

Columns:

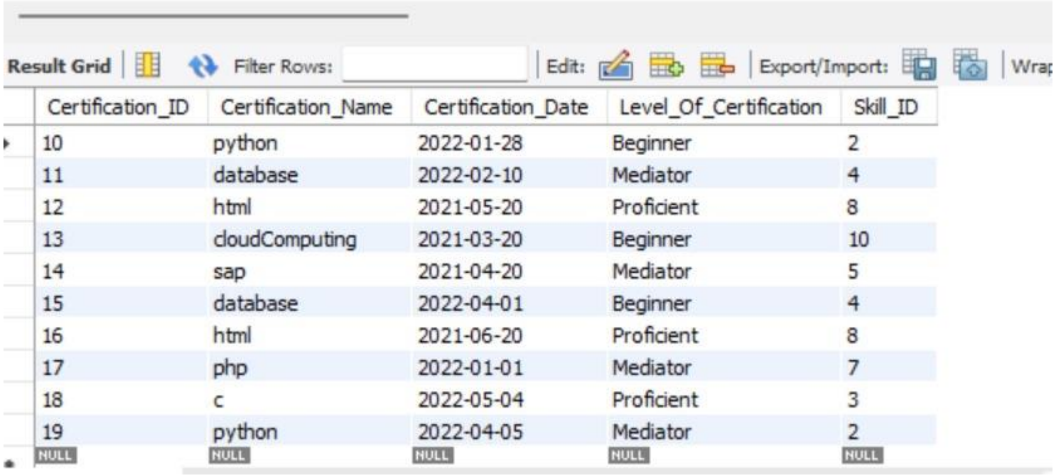
Certification_ID	int PK
Certification_Name	varchar(45)
Certification_Date	date
Level_Of_Certification	varchar(45)
Skill_ID	int

```
#   Time      Action                                                                 Message
56  00:37:16  select * from subproject LIMIT 0, 1000                                 10 row(s) returned
57  00:48:59  use mydb                                                               0 row(s) affected
58  00:48:59  insert into certification(Certification_ID, Certification_Name, Certificatio...  10 row(s) affected Records: 10  Duplicates: 0  Warnings: 0
```

Fig: Inserting data into Certification table



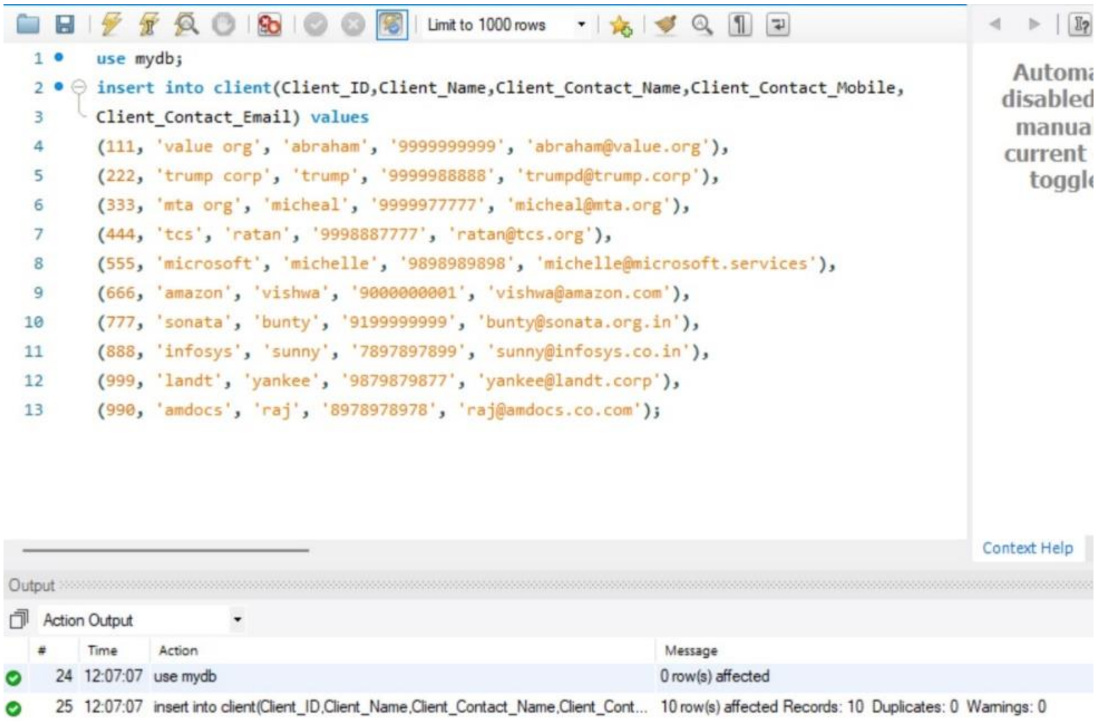
```
use mydb;
select * from certification;
```



Certification_ID	Certification_Name	Certification_Date	Level_Of_Certification	Skill_ID
10	python	2022-01-28	Beginner	2
11	database	2022-02-10	Mediator	4
12	html	2021-05-20	Proficient	8
13	cloudComputing	2021-03-20	Beginner	10
14	sap	2021-04-20	Mediator	5
15	database	2022-04-01	Beginner	4
16	html	2021-06-20	Proficient	8
17	php	2022-01-01	Mediator	7
18	c	2022-05-04	Proficient	3
19	python	2022-04-05	Mediator	2
NULL	NULL	NULL	NULL	NULL

Fig: Retrieving data from Certification table using Select query

e.Client Table:



```
use mydb;
insert into client(Client_ID,Client_Name,Client_Contact_Name,Client_Contact_Mobile,
Client_Contact_Email) values
(111, 'value org', 'abraham', '9999999999', 'abraham@value.org'),
(222, 'trump corp', 'trump', '9999988888', 'trumpd@trump.corp'),
(333, 'mta org', 'micheal', '9999977777', 'micheal@mta.org'),
(444, 'tcs', 'ratan', '9998887777', 'ratan@tcs.org'),
(555, 'microsoft', 'michelle', '9898989898', 'michelle@microsoft.services'),
(666, 'amazon', 'vishwa', '9000000001', 'vishwa@amazon.com'),
(777, 'sonata', 'bunty', '9199999999', 'bunty@sonata.org.in'),
(888, 'infosys', 'sunny', '7897897899', 'sunny@infosys.co.in'),
(999, 'landt', 'yankee', '9879879877', 'yankee@landt.corp'),
(990, 'amdocs', 'raj', '8978978978', 'raj@amdocs.co.com');
```

```
#   Time      Action                                                         Message
24  12:07:07  use mydb                                                       0 row(s) affected
25  12:07:07  insert into client(Client_ID,Client_Name,Client_Contact_Name,Client_Cont...  10 row(s) affected Records: 10  Duplicates: 0  Warnings: 0
```

Fig: Inserting data into Client table

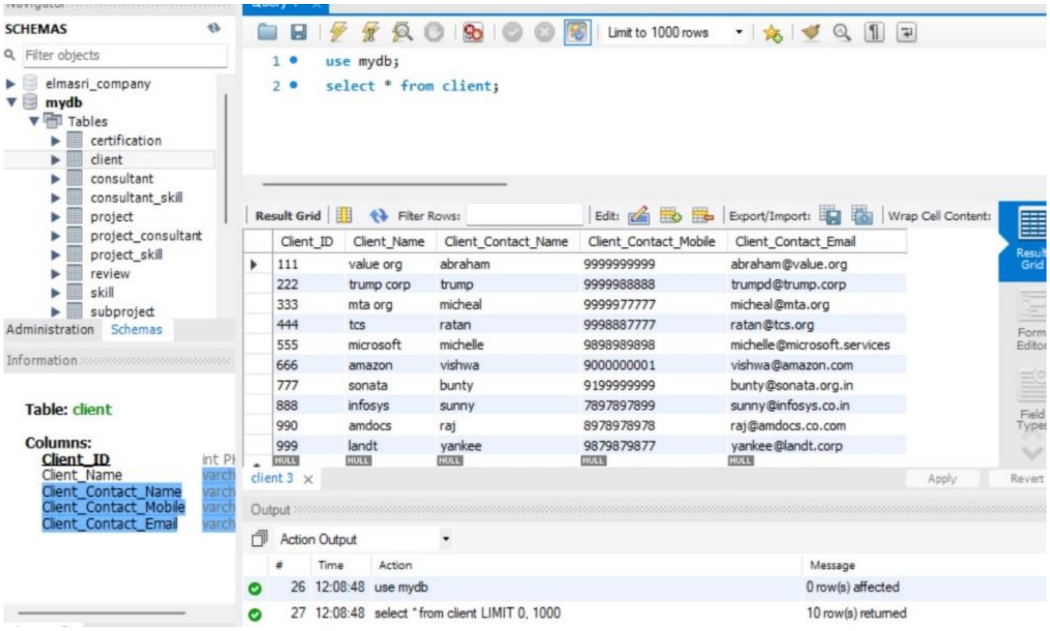


Table: client

Columns:
Client_ID int PI
Client_Name varch
Client_Contact_Name varch
Client_Contact_Mobile varch
Client_Contact_Email varch

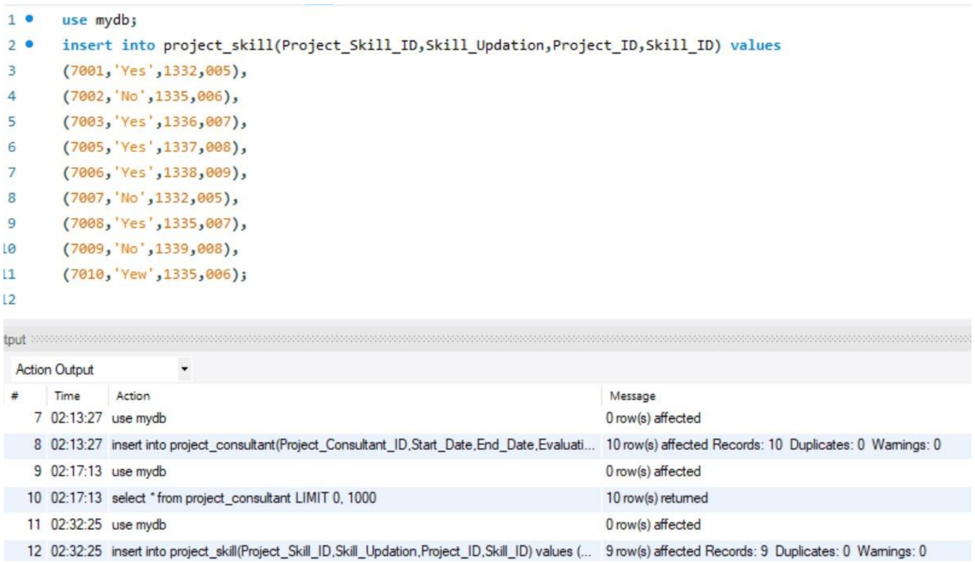
```
use mydb;
select * from client;
```

Client_ID	Client_Name	Client_Contact_Name	Client_Contact_Mobile	Client_Contact_Email
111	value org	abraham	9999999999	abraham@value.org
222	trump corp	trump	9999988888	trumpd@trump.corp
333	mta org	micheal	9999977777	micheal@mta.org
444	tcs	ratan	9998887777	ratan@tcs.org
555	microsoft	michelle	9898989898	michelle@microsoft.services
666	amazon	vishwa	9000000001	vishwa@amazon.com
777	sonata	bunty	9199999999	bunty@sonata.org.in
888	infosys	sunny	7897897899	sunny@infosys.co.in
990	amdocs	raj	8978978978	raj@amdocs.co.com
999	landt	yankee	9879879877	yankee@landt.corp
NULL	NULL	NULL	NULL	NULL

```
#   Time      Action                              Message
26  12:08:48  use mydb                            0 row(s) affected
27  12:08:48  select * from client LIMIT 0, 1000  10 row(s) returned
```

Fig: Retrieving data from Client table using Select query

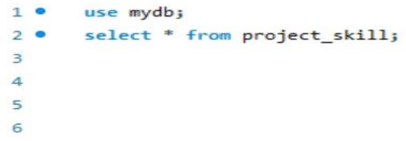
f. Project skill Table:



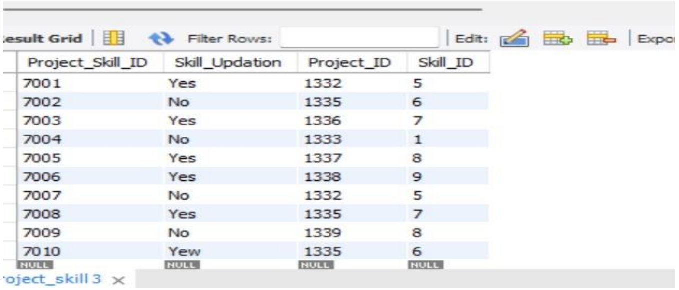
```
use mydb;
insert into project_skill(Project_Skill_ID,Skill_Updation,Project_ID,Skill_ID) values
(7001,'Yes',1332,005),
(7002,'No',1335,006),
(7003,'Yes',1336,007),
(7005,'Yes',1337,008),
(7006,'Yes',1338,009),
(7007,'No',1332,005),
(7008,'Yes',1335,007),
(7009,'No',1339,008),
(7010,'Yew',1335,006);
```

```
 #   Time      Action                                                                              Message
 7   02:13:27  use mydb                                                                            0 row(s) affected
 8   02:13:27  insert into project_consultant(Project_Consultant_ID,Start_Date,End_Date,Evaluati...  10 row(s) affected Records: 10  Duplicates: 0  Warnings: 0
 9   02:17:13  use mydb                                                                            0 row(s) affected
10   02:17:13  select * from project_consultant LIMIT 0, 1000                                      10 row(s) returned
11   02:32:25  use mydb                                                                            0 row(s) affected
12   02:32:25  insert into project_skill(Project_Skill_ID,Skill_Updation,Project_ID,Skill_ID) values (...  9 row(s) affected Records: 9  Duplicates: 0  Warnings: 0
```

Fig: Inserting data into project skill table



```
use mydb;
select * from project_skill;
```



Project_Skill_ID	Skill_Updation	Project_ID	Skill_ID
7001	Yes	1332	5
7002	No	1335	6
7003	Yes	1336	7
7004	No	1333	1
7005	Yes	1337	8
7006	Yes	1338	9
7007	No	1332	5
7008	Yes	1335	7
7009	No	1339	8
7010	Yew	1335	6
NULL	NULL	NULL	NULL

Fig: Retrieving data from Project skill table using select query

g.Project consultant Table:

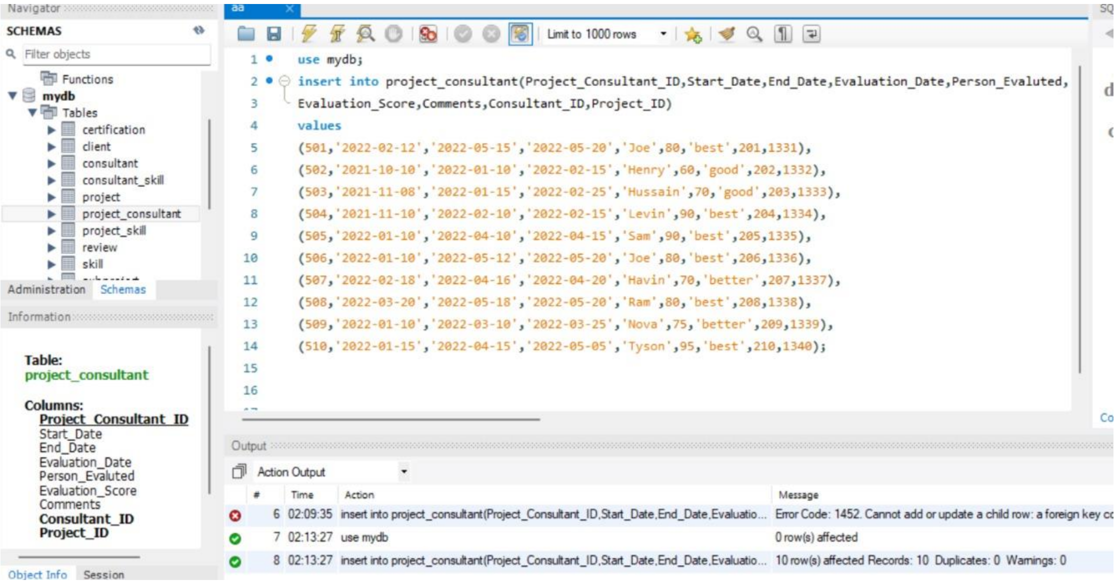


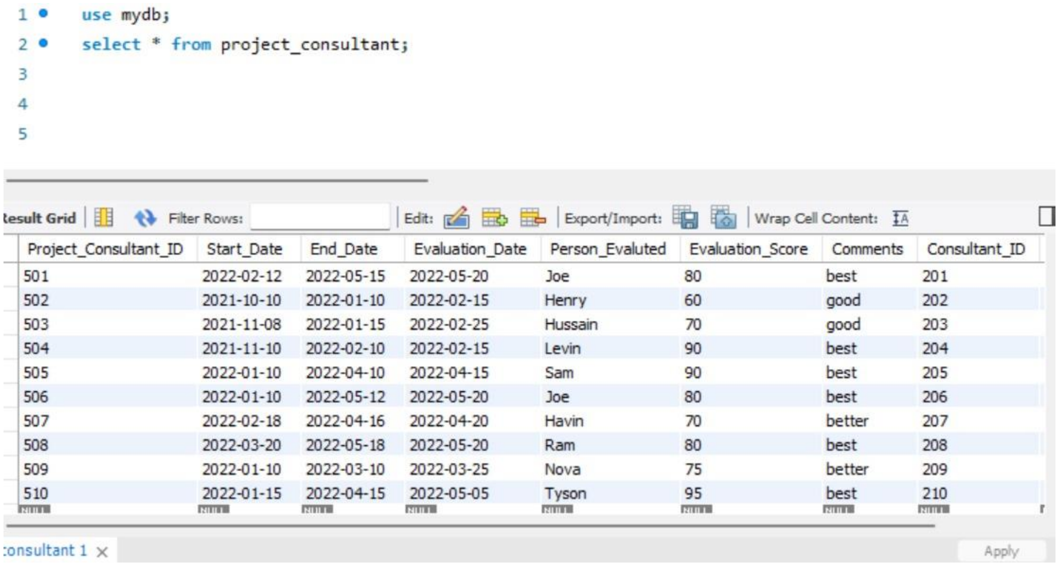
Table:
project_consultant

Columns:
Project_Consultant_ID
Start_Date
End_Date
Evaluation_Date
Person_Evaluted
Evaluation_Score
Comments
Consultant_ID
Project_ID

```
use mydb;
insert into project_consultant(Project_Consultant_ID,Start_Date,End_Date,Evaluation_Date,Person_Evaluted,
Evaluation_Score,Comments,Consultant_ID,Project_ID)
values
(501,'2022-02-12','2022-05-15','2022-05-20','Joe',80,'best',201,1331),
(502,'2021-10-10','2022-01-10','2022-02-15','Henry',60,'good',202,1332),
(503,'2021-11-08','2022-01-15','2022-02-25','Hussain',70,'good',203,1333),
(504,'2021-11-10','2022-02-10','2022-02-15','Levin',90,'best',204,1334),
(505,'2022-01-10','2022-04-10','2022-04-15','Sam',90,'best',205,1335),
(506,'2022-01-10','2022-05-12','2022-05-20','Joe',80,'best',206,1336),
(507,'2022-02-18','2022-04-16','2022-04-20','Havin',70,'better',207,1337),
(508,'2022-03-20','2022-05-18','2022-05-20','Ram',80,'best',208,1338),
(509,'2022-01-10','2022-03-10','2022-03-25','Nova',75,'better',209,1339),
(510,'2022-01-15','2022-04-15','2022-05-05','Tyson',95,'best',210,1340);
```

```
#  Time      Action                                                                          Message
6  02:09:35  insert into project_consultant(Project_Consultant_ID,Start_Date,End_Date,Evaluatio...  Error Code: 1452. Cannot add or update a child row: a foreign key co
7  02:13:27  use mydb                                                                        0 row(s) affected
8  02:13:27  insert into project_consultant(Project_Consultant_ID,Start_Date,End_Date,Evaluatio...  10 row(s) affected Records: 10  Duplicates: 0  Warnings: 0
```

Fig: Inserting data into Project consultant table



```
use mydb;
select * from project_consultant;
```

Project_Consultant_ID	Start_Date	End_Date	Evaluation_Date	Person_Evaluted	Evaluation_Score	Comments	Consultant_ID
501	2022-02-12	2022-05-15	2022-05-20	Joe	80	best	201
502	2021-10-10	2022-01-10	2022-02-15	Henry	60	good	202
503	2021-11-08	2022-01-15	2022-02-25	Hussain	70	good	203
504	2021-11-10	2022-02-10	2022-02-15	Levin	90	best	204
505	2022-01-10	2022-04-10	2022-04-15	Sam	90	best	205
506	2022-01-10	2022-05-12	2022-05-20	Joe	80	best	206
507	2022-02-18	2022-04-16	2022-04-20	Havin	70	better	207
508	2022-03-20	2022-05-18	2022-05-20	Ram	80	best	208
509	2022-01-10	2022-03-10	2022-03-25	Nova	75	better	209
510	2022-01-15	2022-04-15	2022-05-05	Tyson	95	best	210
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Fig: Retrieving data from Project Consultant table using Select query

h.Project Table:

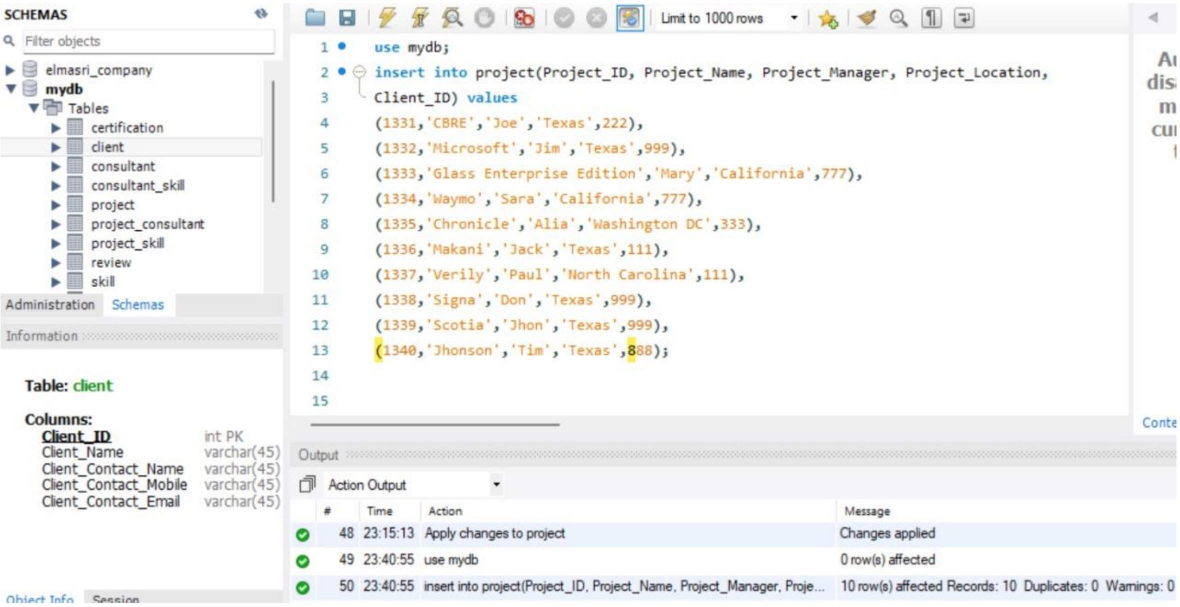


Table: client

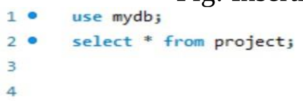
Columns:

Client_ID	int PK
Client_Name	varchar(45)
Client_Contact_Name	varchar(45)
Client_Contact_Mobile	varchar(45)
Client_Contact_Email	varchar(45)

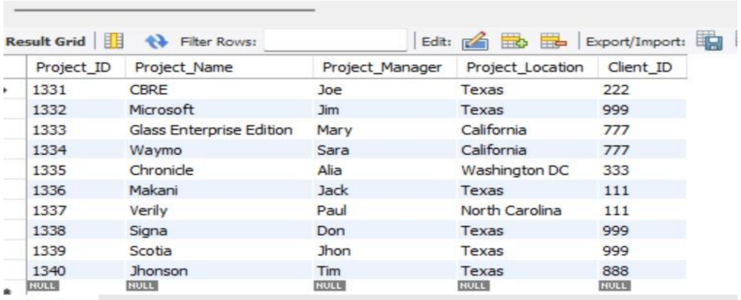
```
use mydb;
insert into project(Project_ID, Project_Name, Project_Manager, Project_Location,
Client_ID) values
(1331,'CBRE','Joe','Texas',222),
(1332,'Microsoft','Jim','Texas',999),
(1333,'Glass Enterprise Edition','Mary','California',777),
(1334,'Waymo','Sara','California',777),
(1335,'Chronicle','Alia','Washington DC',333),
(1336,'Makani','Jack','Texas',111),
(1337,'Verily','Paul','North Carolina',111),
(1338,'Signa','Don','Texas',999),
(1339,'Scotia','Jhon','Texas',999),
(1340,'Jhonson','Tim','Texas',888);
```

#	Time	Action	Message
48	23:15:13	Apply changes to project	Changes applied
49	23:40:55	use mydb	0 row(s) affected
50	23:40:55	insert into project(Project_ID, Project_Name, Project_Manager, Proje...	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0

Fig: Inserting data into Project table



```
use mydb;
select * from project;
```



Project_ID	Project_Name	Project_Manager	Project_Location	Client_ID
1331	CBRE	Joe	Texas	222
1332	Microsoft	Jim	Texas	999
1333	Glass Enterprise Edition	Mary	California	777
1334	Waymo	Sara	California	777
1335	Chronicle	Alia	Washington DC	333
1336	Makani	Jack	Texas	111
1337	Verily	Paul	North Carolina	111
1338	Signa	Don	Texas	999
1339	Scotia	Jhon	Texas	999
1340	Jhonson	Tim	Texas	888
NULL	NULL	NULL	NULL	NULL

Fig: Retrieving data from Project table using select query

I. Sub project Table:

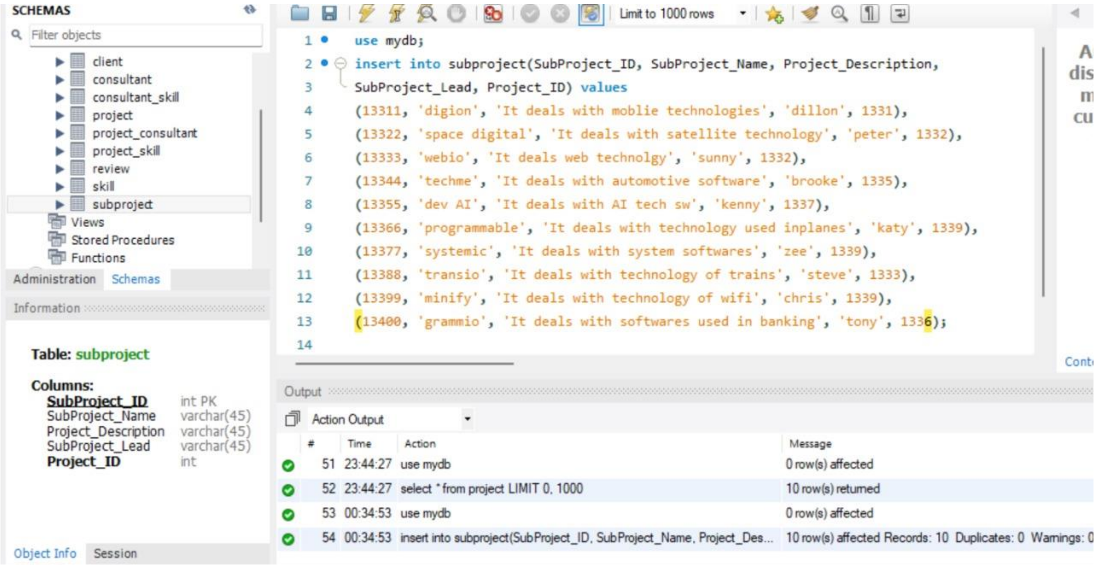


Table: subproject

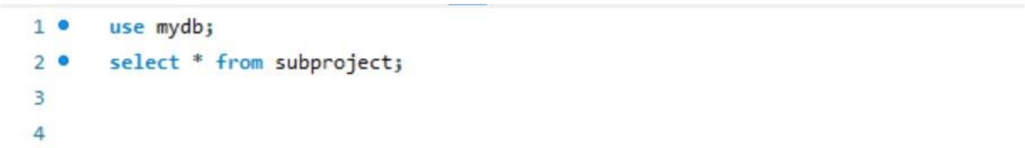
Columns:

SubProject_ID	int PK
SubProject_Name	varchar(45)
Project_Description	varchar(45)
SubProject_Lead	varchar(45)
Project_ID	int

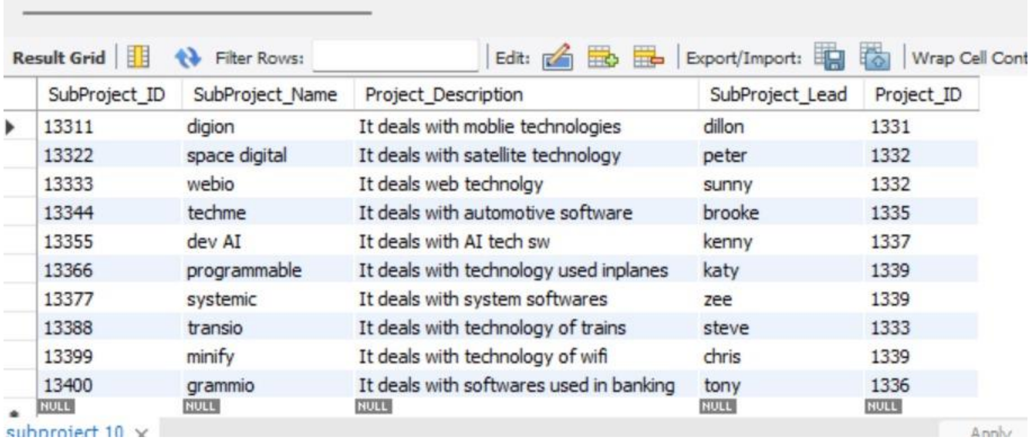
```sql
use mydb;
insert into subproject(SubProject_ID, SubProject_Name, Project_Description,
SubProject_Lead, Project_ID) values
(13311, 'digion', 'It deals with moblie technologies', 'dillon', 1331),
(13322, 'space digital', 'It deals with satellite technology', 'peter', 1332),
(13333, 'webio', 'It deals web technolgy', 'sunny', 1332),
(13344, 'techme', 'It deals with automotive software', 'brooke', 1335),
(13355, 'dev AI', 'It deals with AI tech sw', 'kenny', 1337),
(13366, 'programmable', 'It deals with technology used inplanes', 'katy', 1339),
(13377, 'systemic', 'It deals with system softwares', 'zee', 1339),
(13388, 'transio', 'It deals with technology of trains', 'steve', 1333),
(13399, 'minify', 'It deals with technology of wifi', 'chris', 1339),
(13400, 'grammio', 'It deals with softwares used in banking', 'tony', 1336);
```

```
#   Time      Action                                                              Message
51  23:44:27  use mydb                                                            0 row(s) affected
52  23:44:27  select * from project LIMIT 0, 1000                                 10 row(s) returned
53  00:34:53  use mydb                                                            0 row(s) affected
54  00:34:53  insert into subproject(SubProject_ID, SubProject_Name, Project_Des...  10 row(s) affected Records: 10  Duplicates: 0  Warnings: 0
```

Fig: Inserting data into Sub Project table



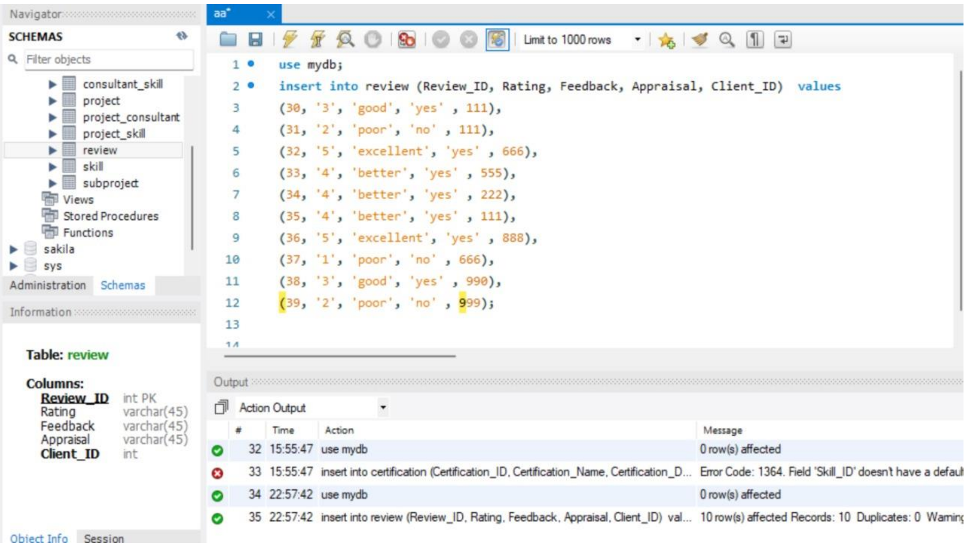
```sql
use mydb;
select * from subproject;
```



SubProject_ID	SubProject_Name	Project_Description	SubProject_Lead	Project_ID
13311	digion	It deals with moblie technologies	dillon	1331
13322	space digital	It deals with satellite technology	peter	1332
13333	webio	It deals web technolgy	sunny	1332
13344	techme	It deals with automotive software	brooke	1335
13355	dev AI	It deals with AI tech sw	kenny	1337
13366	programmable	It deals with technology used inplanes	katy	1339
13377	systemic	It deals with system softwares	zee	1339
13388	transio	It deals with technology of trains	steve	1333
13399	minify	It deals with technology of wifi	chris	1339
13400	grammio	It deals with softwares used in banking	tony	1336
NULL	NULL	NULL	NULL	NULL

Fig: Retrieving data from Subproject table using select query

j.Review Table:



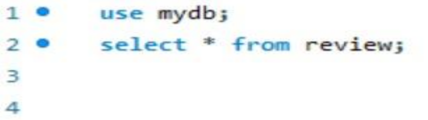
```sql
use mydb;
insert into review (Review_ID, Rating, Feedback, Appraisal, Client_ID)  values
(30, '3', 'good', 'yes' , 111),
(31, '2', 'poor', 'no' , 111),
(32, '5', 'excellent', 'yes' , 666),
(33, '4', 'better', 'yes' , 555),
(34, '4', 'better', 'yes' , 222),
(35, '4', 'better', 'yes' , 111),
(36, '5', 'excellent', 'yes' , 888),
(37, '1', 'poor', 'no' , 666),
(38, '3', 'good', 'yes' , 990),
(39, '2', 'poor', 'no' , 999);
```

Table: review

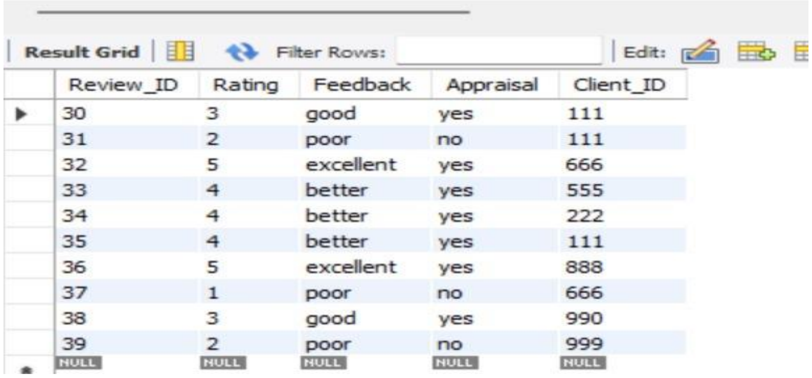
Columns:
Review_ID int PK
Rating varchar(45)
Feedback varchar(45)
Appraisal varchar(45)
Client_ID int

```
#   Time      Action                                                                      Message
32  15:55:47  use mydb                                                                    0 row(s) affected
33  15:55:47  insert into certification (Certification_ID, Certification_Name, Certification_D...  Error Code: 1364. Field 'Skill_ID' doesn't have a defaul
34  22:57:42  use mydb                                                                    0 row(s) affected
35  22:57:42  insert into review (Review_ID, Rating, Feedback, Appraisal, Client_ID)  val...  10 row(s) affected Records: 10  Duplicates: 0  Warning
```

Fig: Inserting data into Review table



```sql
use mydb;
select * from review;
```

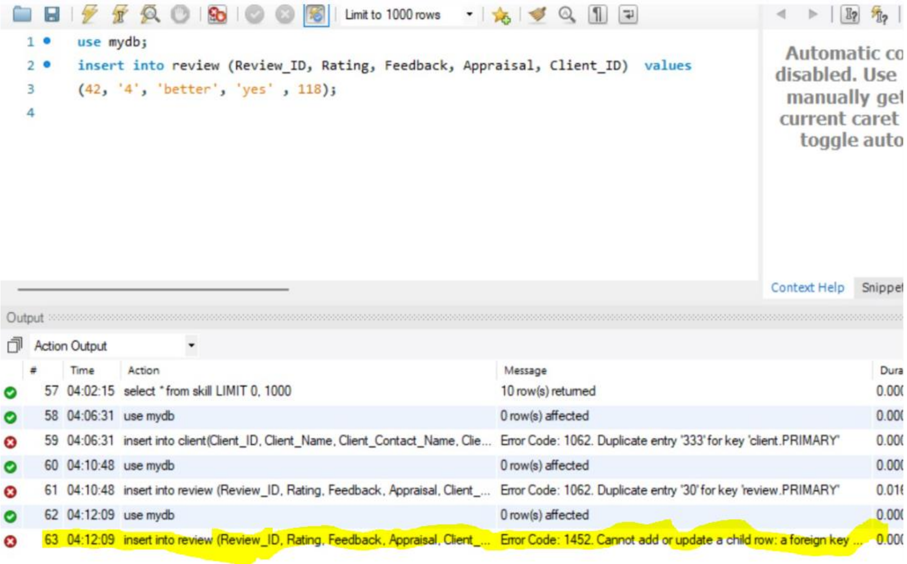


Review_ID	Rating	Feedback	Appraisal	Client_ID
30	3	good	yes	111
31	2	poor	no	111
32	5	excellent	yes	666
33	4	better	yes	555
34	4	better	yes	222
35	4	better	yes	111
36	5	excellent	yes	888
37	1	poor	no	666
38	3	good	yes	990
39	2	poor	no	999
NULL	NULL	NULL	NULL	NULL

Fig: Retrieving data from Review table using Select Query

b. Insertion error due to Foreign key constraints:

We are getting: **Error :Cannot update a child row a foreign key constraint** because we are trying to insert data which is not available in the Foreign key referencing table(i.e Client Table)

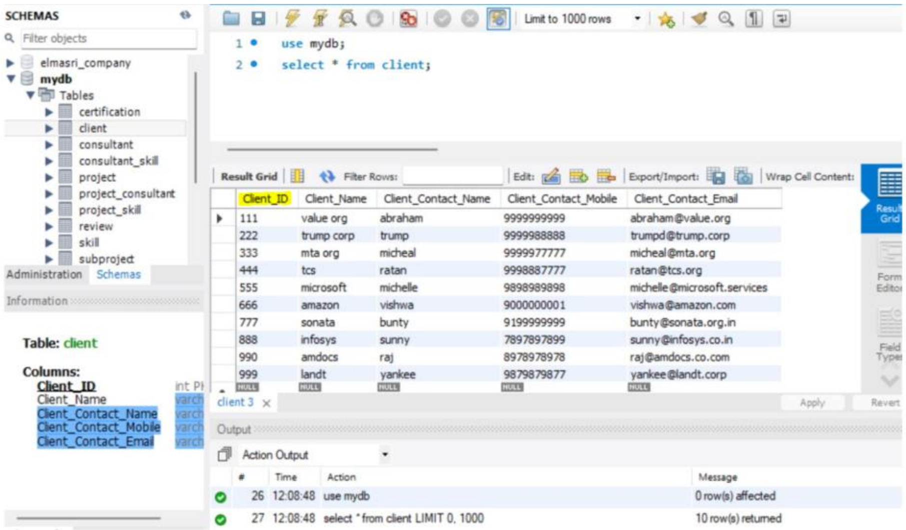


```
use mydb;
insert into review (Review_ID, Rating, Feedback, Appraisal, Client_ID)  values
(42, '4', 'better', 'yes' , 118);
```

```
#   Time      Action                                                      Message                                                          Dura
57  04:02:15  select * from skill LIMIT 0, 1000                           10 row(s) returned                                               0.00(
58  04:06:31  use mydb                                                    0 row(s) affected                                                0.00(
59  04:06:31  insert into client(Client_ID, Client_Name, Client_Contact_Name, Clie...  Error Code: 1062. Duplicate entry '333' for key 'client.PRIMARY'  0.00(
60  04:10:48  use mydb                                                    0 row(s) affected                                                0.00(
61  04:10:48  insert into review (Review_ID, Rating, Feedback, Appraisal, Client_...  Error Code: 1062. Duplicate entry '30' for key 'review.PRIMARY'  0.01(
62  04:12:09  use mydb                                                    0 row(s) affected                                                0.00(
63  04:12:09  insert into review (Review_ID, Rating, Feedback, Appraisal, Client_...  Error Code: 1452. Cannot add or update a child row: a foreign key ...  0.00(
```

Fig : Error Cannot update a child row a foreign key constraint

Client table:



```
use mydb;
select * from client;
```

Client_ID	Client_Name	Client_Contact_Name	Client_Contact_Mobile	Client_Contact_Email
111	value org	abraham	9999999999	abraham@value.org
222	trump corp	trump	9999988888	trumpd@trump.corp
333	mta org	micheal	9999977777	micheal@mta.org
444	tcs	ratan	9998887777	ratan@tcs.org
555	microsoft	michelle	9898989898	michelle@microsoft.services
666	amazon	vishwa	9000000001	vishwa@amazon.com
777	sonata	bunty	9199999999	bunty@sonata.org.in
888	infosys	sunny	7897897899	sunny@infosys.co.in
990	amdocs	raj	8978978978	raj@amdocs.co.com
999	landt	yankee	9879879877	yankee@landt.corp
NULL	NULL	NULL	NULL	NULL

```
#   Time      Action                               Message
26  12:08:48  use mydb                             0 row(s) affected
27  12:08:48  select * from client LIMIT 0, 1000   10 row(s) returned
```

Fig: Retrieving data from Client table using Select query

We can resolve this issue by inserting data which is available in the Foreign key referencing table.

c. Foreign key inconsistency:

SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0;

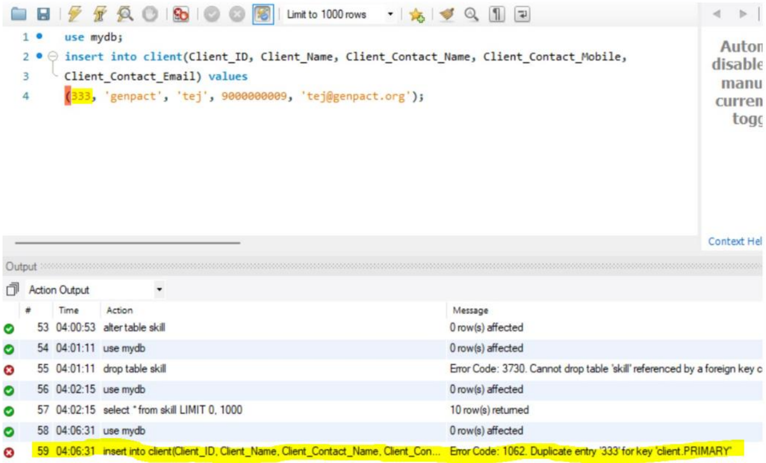
SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0;

SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_ENGINE_SUBSTITUTION';

d.Examing rational constraints:

examples that shows how your constrains (i.e., Primary Key, Foreign Key, Unique key, data types) protect your database from insertion of invalid instances.

Primary Key:

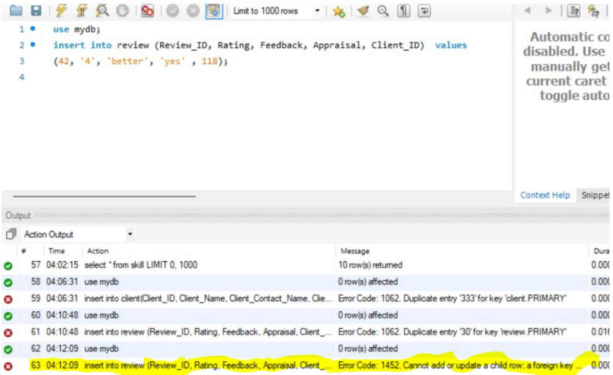


```
use mydb;
insert into client(Client_ID, Client_Name, Client_Contact_Name, Client_Contact_Mobile,
Client_Contact_Email) values
(333, 'genpact', 'tej', 9000000009, 'tej@genpact.org');
```

```
 #   Time      Action                                                              Message
53   04:00:53  alter table skill                                                   0 row(s) affected
54   04:01:11  use mydb                                                            0 row(s) affected
55   04:01:11  drop table skill                                                    Error Code: 3730. Cannot drop table 'skill' referenced by a foreign key c
56   04:02:15  use mydb                                                            0 row(s) affected
57   04:02:15  select * from skill LIMIT 0, 1000                                   10 row(s) returned
58   04:06:31  use mydb                                                            0 row(s) affected
59   04:06:31  insert into client(Client_ID, Client_Name, Client_Contact_Name, Client_Con...   Error Code: 1062. Duplicate entry '333' for key 'client.PRIMARY'
```

Fig: Client_ID acts as a Primary key in Client table

Foreign Key:



```
use mydb;
insert into review (Review_ID, Rating, Feedback, Appraisal, Client_ID)  values
(42, '4', 'better', 'yes' , 118);
```

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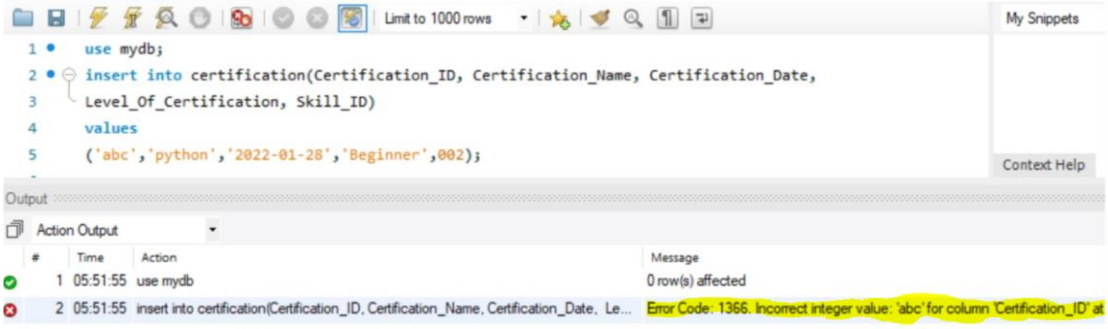
disabled. Use
manually get
current caret
toggle auto

```
#   Time      Action                                                          Message                                                          Dura
57  04:02:15  select * from skill LIMIT 0, 1000                               10 row(s) returned                                               0.00
58  04:06:31  use mydb                                                        0 row(s) affected                                                0.00
59  04:06:31  insert into client(Client_ID, Client_Name, Client_Contact_Name, Clie...  Error Code: 1062. Duplicate entry '333' for key 'client.PRIMARY'  0.00
60  04:10:48  use mydb                                                        0 row(s) affected                                                0.00
61  04:10:48  insert into review (Review_ID, Rating, Feedback, Appraisal, Client_...  Error Code: 1062. Duplicate entry '30' for key 'review.PRIMARY'  0.01
62  04:12:09  use mydb                                                        0 row(s) affected                                                0.00
63  04:12:09  insert into review (Review_ID, Rating, Feedback, Appraisal, Client_...  Error Code: 1452. Cannot add or update a child row: a foreign key ...  0.00
```

Fig: Reveiw_ID acts as a Foreignkey in Client table

Data Types:

Error while Inserting a Varchar value for Integer data type.



```
use mydb;
insert into certification(Certification_ID, Certification_Name, Certification_Date,
Level_Of_Certification, Skill_ID)
values
('abc','python','2022-01-28','Beginner',002);
```

```
#  Time      Action                                                                  Message
1  05:51:55  use mydb                                                                0 row(s) affected
2  05:51:55  insert into certification(Certification_ID, Certification_Name, Certification_Date, Le...  Error Code: 1366. Incorrect integer value: 'abc' for column 'Certification_ID' at
```

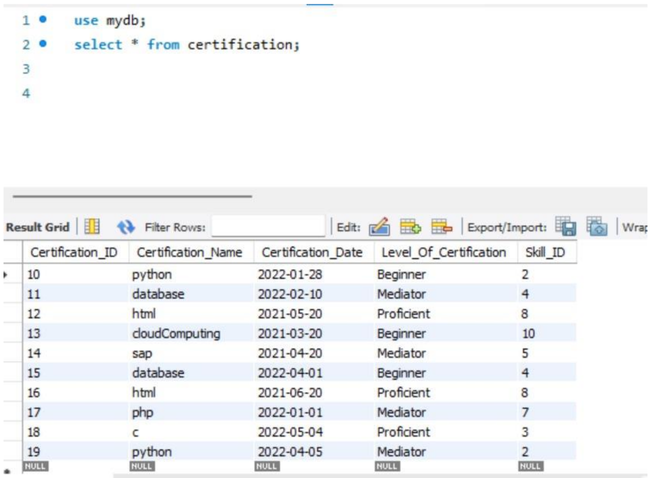
Fig: Error while inserting data with different datatype

5.0 Optimizing Database:

Select Query:

Select query is used to retrieve all data or specific data from a table.

Select * query on certification table, displays all the data from Certification table.



```
use mydb;
select * from certification;
```

Certification_ID	Certification_Name	Certification_Date	Level_Of_Certification	Skill_ID
10	python	2022-01-28	Beginner	2
11	database	2022-02-10	Mediator	4
12	html	2021-05-20	Proficient	8
13	cloudComputing	2021-03-20	Beginner	10
14	sap	2021-04-20	Mediator	5
15	database	2022-04-01	Beginner	4
16	html	2021-06-20	Proficient	8
17	php	2022-01-01	Mediator	7
18	c	2022-05-04	Proficient	3
19	python	2022-04-05	Mediator	2
NULL	NULL	NULL	NULL	NULL

Fig: Select Query on Certification table

Joins:

A JOIN [3] clause is used to combine rows from two or more tables based on a related column between them.

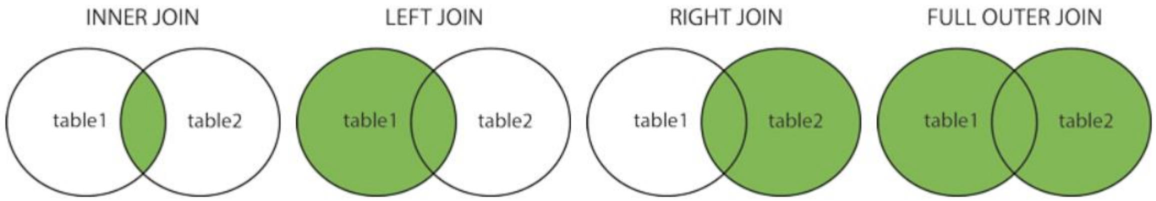
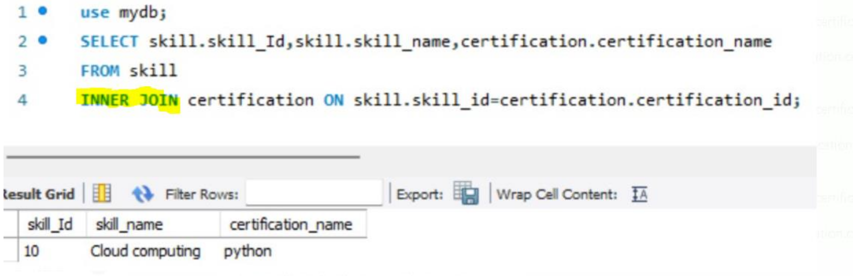


Fig: Different types of Joins

Inner Join:

It returns records that have matching values in both tables.

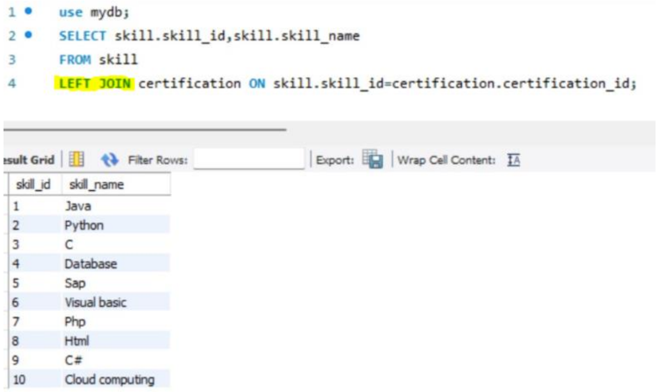


```
use mydb;
SELECT skill.skill_Id,skill.skill_name,certification.certification_name
FROM skill
INNER JOIN certification ON skill.skill_id=certification.certification_id;
```

skill_Id	skill_name	certification_name
10	Cloud computing	python

Left join:

It Returns all records from the left table, and the matched records from the right table.

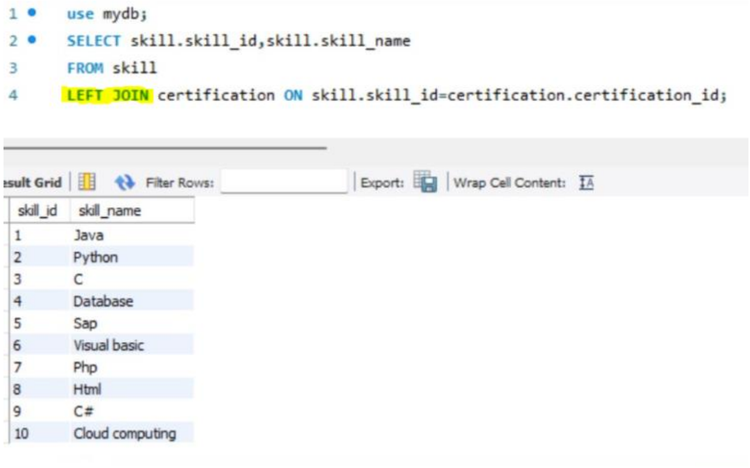


```
use mydb;
SELECT skill.skill_id,skill.skill_name
FROM skill
LEFT JOIN certification ON skill.skill_id=certification.certification_id;
```

skill_id	skill_name
1	Java
2	Python
3	C
4	Database
5	Sap
6	Visual basic
7	Php
8	Html
9	C#
10	Cloud computing

Right join:

It Returns all records from the right table, and the matched records from the left table.

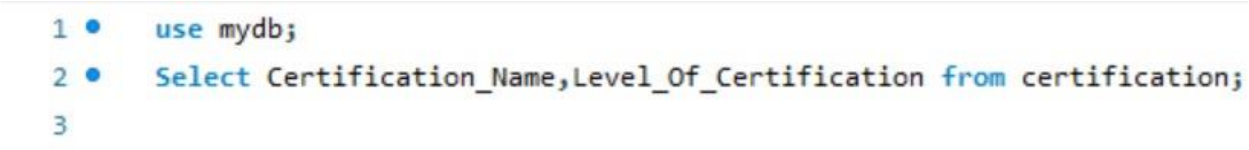


```
use mydb;
SELECT skill.skill_id,skill.skill_name
FROM skill
LEFT JOIN certification ON skill.skill_id=certification.certification_id;
```

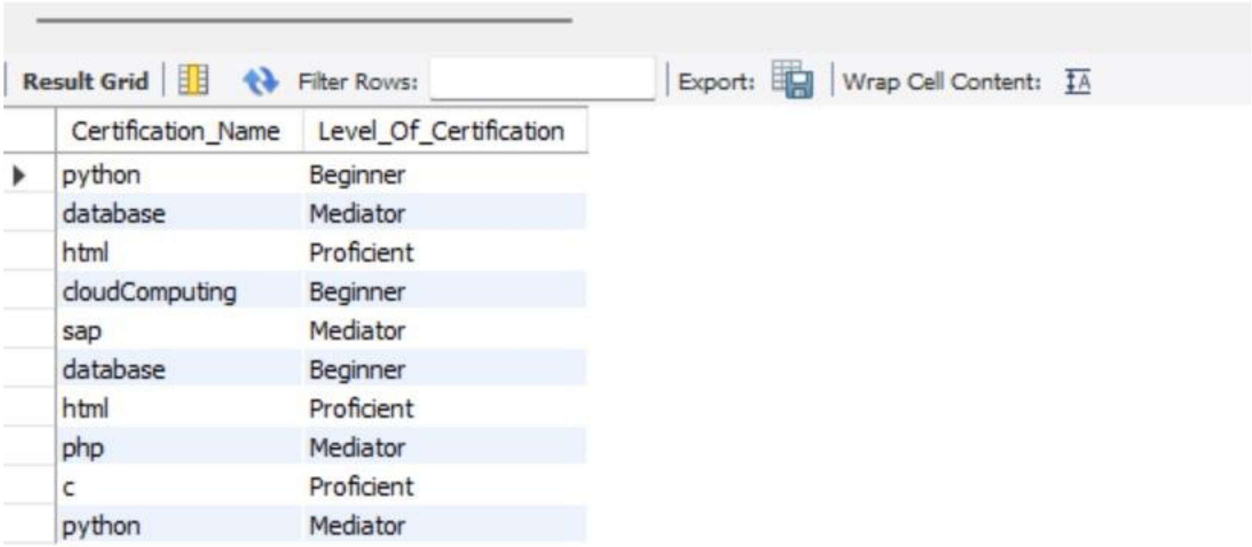
skill_id	skill_name
1	Java
2	Python
3	C
4	Database
5	Sap
6	Visual basic
7	Php
8	Html
9	C#
10	Cloud computing

Query Optimization Select Query:

Select query is used to retrieve all data or specific data from a table.
Select Certification_Name,Level_Of_Certification on certification table, displays all the data from Certification table.

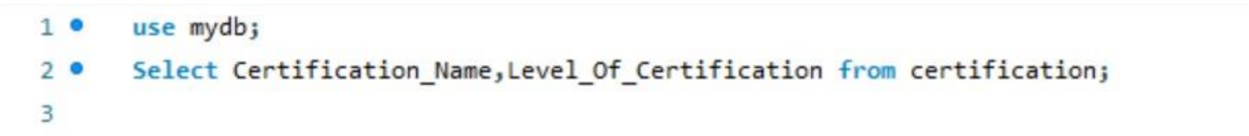


```
use mydb;
Select Certification_Name,Level_Of_Certification from certification;
```



Certification_Name	Level_Of_Certification
python	Beginner
database	Mediator
html	Proficient
cloudComputing	Beginner
sap	Mediator
database	Beginner
html	Proficient
php	Mediator
c	Proficient
python	Mediator

Fig: Select Query on Certification table



```
use mydb;
Select Certification_Name,Level_Of_Certification from certification;
```

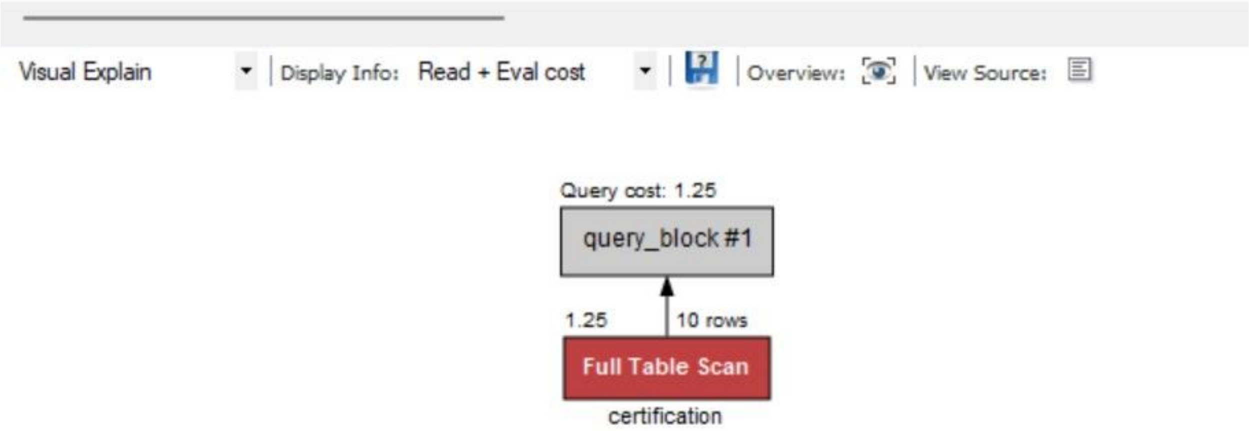


Fig: Optimization on Certification Table

7.0 Graphical user interface design:

A GUI (graphical user interface) [5] is **a system of interactive visual components for computer software**. A GUI displays objects that convey information and represent actions that can be taken by the user.

a. Connection to Database:

Code to connect PHP to Database:

```
<?php session_start();
include_once('../includes/config.php');
// Code for login
if(isset($_POST['login']))
{
  $adminusername=$_POST['username'];
  $pass=md5($_POST['password']);
$ret=mysqli_query($con,"SELECT * FROM admin WHERE username='$adminusername' and
password='$pass'");
$num=mysqli_fetch_array($ret);
if($num>0)
{
```

```
$extra="dashboard.php";
$_SESSION['login']=$_POST['username'];
$_SESSION['adminid']=$num['id'];
echo "<script>window.location.href='".$extra."'</script>";
exit();
}
else
{
echo "<script>alert('Invalid username or password');</script>";
$extra="index.php";
echo "<script>window.location.href='".$extra."'</script>";
exit();
}
}
?>
```

The connection strings $_Get, $_Post methods are used for sending and retreiveing the credentials that needs to be matched with the database. Only then the admin and user can be able to login to the website.

```
  $adminusername=$_POST['username'];
  $pass=md5($_POST['password']);
```

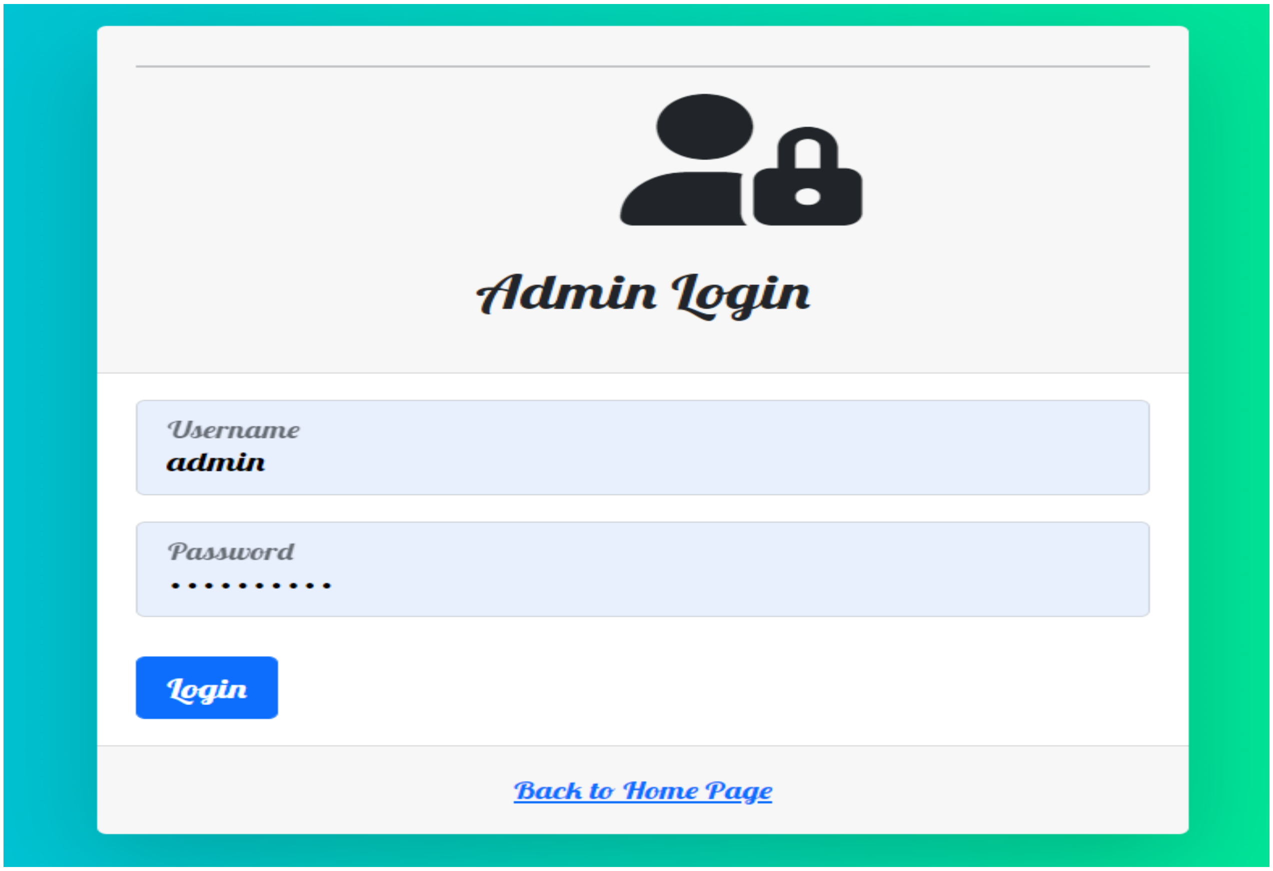
Here, it retrieves the admin username and password using the Select command through Php.

```
$ret=mysqli_query($con,"SELECT * FROM admin WHERE username='$adminusername' and
password='$pass'");
```

b. **Log in page:**
Below figure illustrates the Login page of Consultancy Management System (CMS), Which Contains the two login buttons for two respective user's Admin and User. Admin have the privileges to create a user, alter the details of user and delete the user from CMS. In order to login to the CMS dashboard, user should be created by admin and provides the username and password to the end user. Once the user gets the Username and password, CMS allows the user to change the password as the per the user requirement and user should be able to add the required information.

Admin Login Page:

Admin Login page allows the admin to access to every user profile. Admin can be able to update, add, delete, modify user's profile.



Username
admin

Password
•••••••••••

Code for Admin login page:

```
<?php session_start();
include_once('../includes/config.php');
// Code for login
if(isset($_POST['login']))
{
  $adminusername=$_POST['username'];
  $pass=md5($_POST['password']);
$ret=mysqli_query($con,"SELECT * FROM admin WHERE username='$adminusername' and
password='$pass'");
$num=mysqli_fetch_array($ret);
if($num>0)
{
$extra="dashboard.php";
$_SESSION['login']=$_POST['username'];
$_SESSION['adminid']=$num['id'];
echo "<script>window.location.href='".$extra."'</script>";
exit();
}
else
{
echo "<script>alert('Invalid username or password');</script>";
$extra="index.php";
echo "<script>window.location.href='".$extra."'</script>";
exit();
}
}
?>

<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8" />
        <meta http-equiv="X-UA-Compatible" content="IE=edge" />
        <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no" />
        <meta name="description" content="" />
        <meta name="author" content="" />
        <title>Admin Login | Registration and Login System</title>
        <script src="https://kit.fontawesome.com/e2182d37e5.js" crossorigin="anonymous"></script>
        <link href="../css/styles.css" rel="stylesheet" />
        <script src="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.15.3/js/all.min.js"
crossorigin="anonymous"></script>
    </head>
    <body style="background: linear-gradient(to right, #00AAFF, #00FF6C);">
        <div id="layoutAuthentication">
            <div id="layoutAuthentication_content">
                <main>
                    <div class="container">
                        <div class="row justify-content-center">
                            <div class="col-lg-5">
                                <div class="card shadow-lg border-0 rounded-lg mt-5">

<div class="card-header">

<hr />
<i class="fa-solid fa-user-lock fa-5x text-dark" style="margin-left: 200px;"></i>
    <h3 class="text-center font-weight-light my-4">Admin Login</h3></div>
                                    <div class="card-body">

                                        <form method="post">

<div class="form-floating mb-3">
<input class="form-control" name="username" type="text" placeholder="Username"  required/>
<label for="inputEmail">Username</label>
</div>


<div class="form-floating mb-3">
<input class="form-control" name="password" type="password" placeholder="Password" required />
<label for="inputPassword">Password</label>
</div>


<div class="d-flex align-items-center justify-content-between mt-4 mb-0">
```

```
<button class="btn btn-primary" name="login" type="submit">Login</button>
</div>
</form>
</div>
                  <div class="card-footer text-center py-3">
                    <div class="small"><a href="../index.php">Back to Home Page</a></div>
                  </div>
                </div>
              </div>
            </div>
          </div>
        </main>
      </div>

    </div>
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.0/dist/js/bootstrap.bundle.min.js"
crossorigin="anonymous"></script>
    <script src="../js/scripts.js"></script>
  </body>
</html>
```

User login:

User login Page allows access to your profile with the User credentials. User can update their details such as First Name, Last Name, Email, Contact Number, Date anytime.

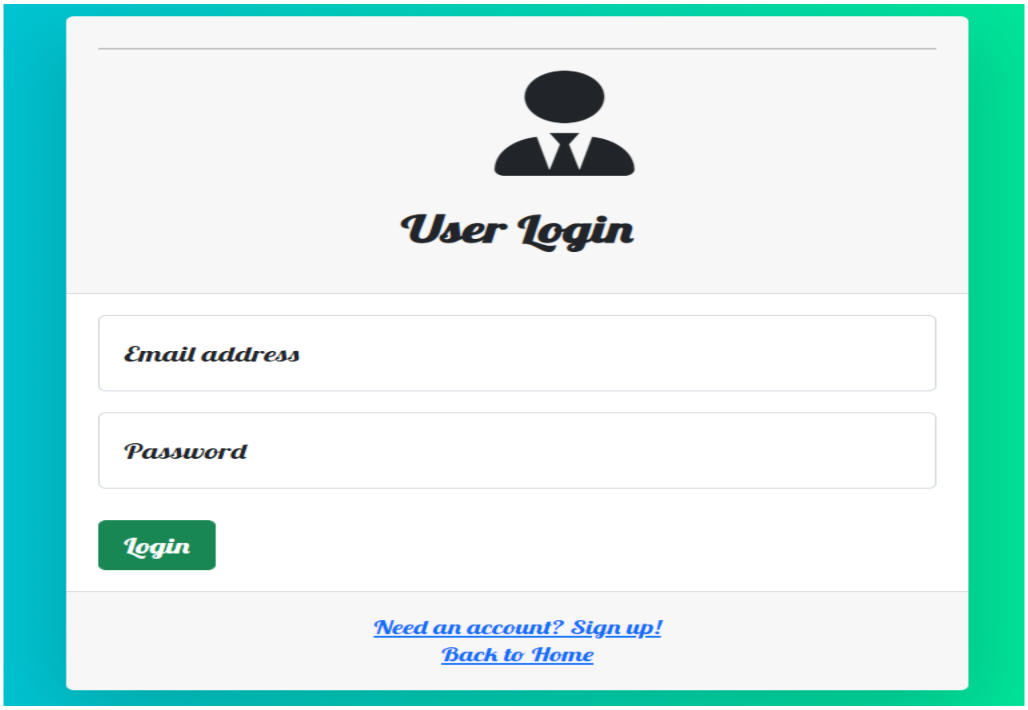


Fig: User Login page

Code for user Login page:

```
<?php session_start();
include_once('includes/config.php');
// Code for login
if(isset($_POST['login']))
{
$password=$_POST['password'];
$dec_password=$password;
$useremail=$_POST['uemail'];
$ret= mysqli_query($con,"SELECT id,fname FROM users WHERE email='$useremail' and
password='$dec_password'");
$num=mysqli_fetch_array($ret);
if($num>0)
{

$_SESSION['id']=$num['id'];
$_SESSION['name']=$num['fname'];
header("location:welcome.php");

}
else
{
echo "<script>alert('Invalid username or password');</script>";
}
}
?>

<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8" />
        <meta http-equiv="X-UA-Compatible" content="IE=edge" />
        <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no" />
        <meta name="description" content="" />
        <meta name="author" content="" />
        <title>User Login | CMS</title>
        <script src="https://kit.fontawesome.com/e2182d37e5.js" crossorigin="anonymous"></script>
        <link href="css/styles.css" rel="stylesheet" />
        <script src="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.15.3/js/all.min.js"
crossorigin="anonymous"></script>
    </head>
    <body style="background: linear-gradient(to right, #00AAFF, #00FF6C);">
        <div id="layoutAuthentication">
            <div id="layoutAuthentication_content">
                <main>
                    <div class="container">
                        <div class="row justify-content-center">
                            <div class="col-lg-5">
                                <div class="card shadow-lg border-0 rounded-lg mt-5">
```

```
<div class="card-header">

<hr />
<i class="fa-solid fa-user-tie fa-5x text-dark" style="margin-left: 198px;"></i>
   <h3 class="text-center fw-bolder my-4">User Login</h3></div>
<div class="card-body">
<form method="post">
<div class="form-floating mb-3">
<input class="form-control" name="uemail" type="email" placeholder="name@example.com"
required/>
<label for="inputEmail">Email address</label>
</div>

   <div class="form-floating mb-3">
       <input class="form-control" name="password" type="password" placeholder="Password" required
/>
       <label for="inputPassword">Password</label>
       </div>
       <div class="d-flex align-items-center justify-content-between mt-4 mb-0">

           <button class="btn btn-success" name="login" type="submit">Login</button>
           </div>
           </form>
           </div>
   <div class="card-footer text-center py-3">
   <div class="small"><a href="signup.php">Need an account? Sign up!</a></div>
   <div class="small"><a href="index.php">Back to Home</a></div>
      </div>
       </div>
       </div>
         </div>
           </div>
           </main>
           </div>

       </div>
       <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.0/dist/js/bootstrap.bundle.min.js"
crossorigin="anonymous"></script>
       <script src="js/scripts.js"></script>
   </body>
</html>
```

c. Main menu page:

The below figure illustrates Admin main menu page containing two buttons to create a user and delete a user namely Add a new user and Delete a User. After successful admin login, the admin main menu page is displayed where admin is allowed to create a new user which results in creating a new user in consultancy management system (CMS) and have the access to delete a user which results in deleting the existing user. The user got deleted from consultancy management system (CMS) is no longer is able to login to the CMS dashboard.

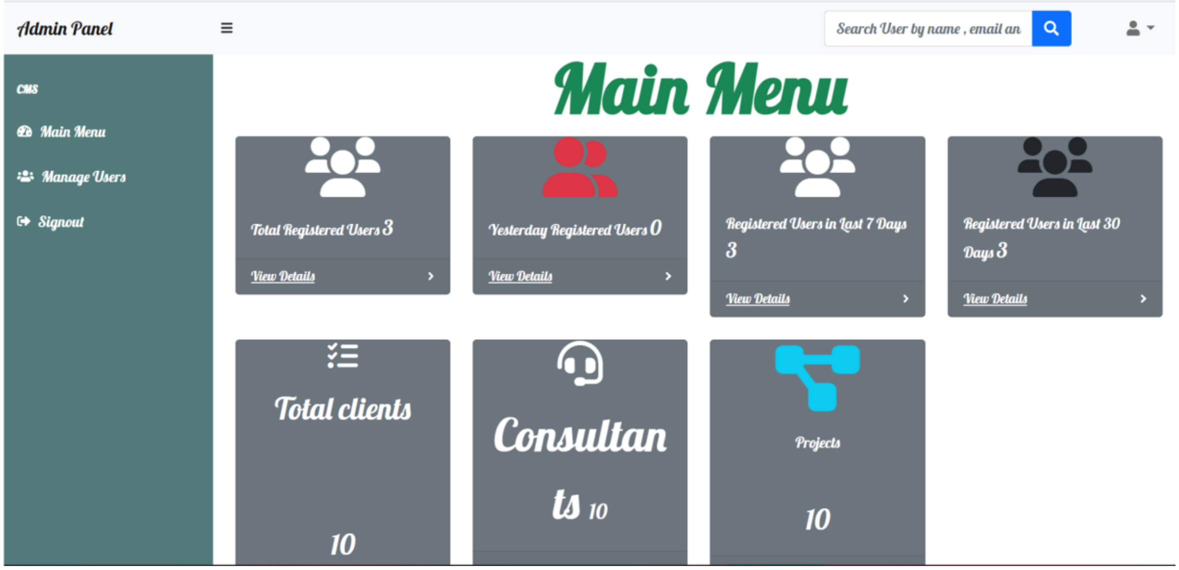


Fig: Admin Panel which acts as a main menu page.

Admin has the access to:

- The total no of user registered
- Total no of clients
- Total no of consultants
- How many users were registered in the last few days.
- And the No of projects they had to deal with.

All the operations for the user and for the consultants are carried out by the admin.

Code for main menu page:

```
<?php session_start();
include_once('../includes/config.php');
if (strlen($_SESSION['adminid']==0)) {
  header('location:logout.php');
  } else{

?>

<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8" />
        <meta http-equiv="X-UA-Compatible" content="IE=edge" />
        <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no" />
        <meta name="description" content="" />
        <meta name="author" content="" />
        <title>CMS</title>
        <script src="https://kit.fontawesome.com/e2182d37e5.js" crossorigin="anonymous"></script>
        <link href="https://cdn.jsdelivr.net/npm/simple-datatables@latest/dist/style.css" rel="stylesheet" />
        <link href="../css/styles.css" rel="stylesheet" />
    <script src="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.15.3/js/all.min.js"
crossorigin="anonymous"></script>
  </head>
  <body class="sb-nav-fixed">
 <?php include_once('includes/navbar.php');?>
    <div id="layoutSidenav">
     <?php include_once('includes/sidebar.php');?>
      <div id="layoutSidenav_content">
        <main>
          <div class="container-fluid px-4">
            <h2 class="mt-4 text-center fw-bolder text-success display-2">Main Menu</h2>

            <div class="row">
            <?php
            $query=mysqli_query($con,"select id from users");
            $totalusers=mysqli_num_rows($query);
            ?>

              <div class="col-xl-3 col-md-6">

                <div class="card bg-secondary text-white mb-4">
                <i class="fa-solid fa-users fa-4x text-center"></i>
                  <div class="card-body">Total Registered Users
                    <span style="font-size:22px;"> <?php echo $totalusers;?></span></div>
                  <div class="card-footer d-flex align-items-center justify-content-between">
                    <a class="small text-white stretched-link" href="manage-users.php">View
Details</a>
                    <div class="small text-white"><i class="fas fa-angle-right"></i></div>
                  </div>
                </div>
              </div>
                <?php
                $query1=mysqli_query($con,"select id from users where
date(posting_date)=CURRENT_DATE()-1");
                $yesterdayregusers=mysqli_num_rows($query1);
                ?>

              <div class="col-xl-3 col-md-6">
                <div class="card bg-secondary text-white mb-4">

                <i class="fa-solid fa-user-group fa-4x text-center text-danger"></i>
                  <div class="card-body">Yesterday Registered Users
                    <span style="font-size:22px;"> <?php echo
$yesterdayregusers;?></span></div>
                  <div class="card-footer d-flex align-items-center justify-content-between">
                    <a class="small text-white stretched-link" href="yesterday-reg-users.php">View
Details</a>
                    <div class="small text-white"><i class="fas fa-angle-right"></i></div>
                  </div>
                </div>
              </div>
```

```
                            <?php
                            $query2=mysqli_query($con,"select id from users where date(posting_date)>=now()
- INTERVAL 7 day");
                            $last7daysregusers=mysqli_num_rows($query2);
                            ?>

                        <div class="col-xl-3 col-md-6">
                            <div class="card bg-secondary text-white mb-4">
                            <i class="fa-solid fa-users fa-4x text-center"></i>
                                <div class="card-body"> Registered Users in Last 7 Days
                                    <span style="font-size:22px;"> <?php echo $last7daysregusers;?></span></div>
                                <div class="card-footer d-flex align-items-center justify-content-between">
                                    <a class="small text-white stretched-link" href="lastsevendays-reg-
users.php">View Details</a>
                                    <div class="small text-white"><i class="fas fa-angle-right"></i></div>
                                </div>
                            </div>
                        </div>

                        <?php
                        $query3=mysqli_query($con,"select id from users where date(posting_date)>=now() -
INTERVAL 30 day");
                        $last30daysregusers=mysqli_num_rows($query3);
                        ?>

                        <div class="col-xl-3 col-md-6">
                            <div class="card bg-secondary text-white mb-4">
                            <i class="fa-solid fa-users fa-4x text-center text-dark"></i>
                                <div class="card-body">Registered Users in Last 30 Days
                                    <span style="font-size:22px;"> <?php echo
$last30daysregusers;?></span></div>
                                <div class="card-footer d-flex align-items-center justify-content-between">
                                    <a class="small text-white stretched-link" href="lastthirtyays-reg-
users.php">View Details</a>
                                    <div class="small text-white"><i class="fas fa-angle-right"></i></div>
                                </div>
                            </div>
                        </div>
                    </div>
                <!-- another row -->
                <div class="row">
                    <?php
                    $query=mysqli_query($con,"select id from users");
                    $totalusers=mysqli_num_rows($query);
                    ?>

                        <div class="col-xl-3 col-md-6">
                            <div class="card bg-secondary text-white mb-4 fa-2x text-center secondary">
                            <i class="fa-solid fa-list-check"></i>
                                <div class="card-body">Total clients <br><br><br>
                                    <span style="font-size:30px;"> <?php echo 10?></span></div>
                                <div class="card-footer d-flex align-items-center justify-content-between">
                                    <a class="small text-white stretched-link btn btn-success"
href="clients.php">View clients</a>
                                    <div class="small text-white"><i class="fas fa-angle-right"></i></div>
                                </div>
                            </div>
                        </div>
                            <?php
                            $query1=mysqli_query($con,"select id from users where
date(posting_date)=CURRENT_DATE()-1");
                            $yesterdayregusers=mysqli_num_rows($query1);
                            ?>

                        <div class="col-xl-3 col-md-6">
                            <div class="card bg-secondary text-white mb-4 fa-3x text-center">
                            <i class="fa-solid fa-headset"></i>
                                <div class="card-body">Consultants
                                    <span style="font-size:22px;"> <?php echo 10;?></span></div>
                                <div class="card-footer d-flex align-items-center justify-content-between">
                                <a class="small text-white stretched-link btn btn-success"
href="consultants.php">View consultants</a>
                                    <div class="small text-white"><i class="fas fa-angle-right"></i></div>
                                </div>
                            </div>
                        </div>

                            <?php
                            $query2=mysqli_query($con,"select id from users where date(posting_date)>=now()
- INTERVAL 7 day");
                            $last7daysregusers=mysqli_num_rows($query2);
                            ?>

                        <div class="col-xl-3 col-md-6">
                            <div class="card bg-secondary text-white mb-4">

                            <i class="fa-solid fa-diagram-project fa-5x text-center text-info"></i>
                                <div class="card-body text-center"> Projects <br><br><br>
                                    <span style="font-size:30px;"> <?php echo 10;?></span></div>
                                <div class="card-footer d-flex align-items-center justify-content-between">
                                <a class="small text-white stretched-link btn btn-success text-center"
href="projects.php">View projects</a>
                                    <div class="small text-white"><i class="fas fa-angle-right"></i></div>
                                </div>
                            </div>
                        </div>

                        <?php
                        $query3=mysqli_query($con,"select id from users where date(posting_date)>=now() -
INTERVAL 30 day");
                        $last30daysregusers=mysqli_num_rows($query3);
                    ?>


                 </div>
             <!-- end of another row -->

              </div>
           </main>

        </div>
     </div>
     <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.0/dist/js/bootstrap.bundle.min.js"
crossorigin="anonymous"></script>
     <script src="../js/scripts.js"></script>
     <script src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.8.0/Chart.min.js"
crossorigin="anonymous"></script>
     <script src="https://cdn.jsdelivr.net/npm/simple-datatables@latest"
crossorigin="anonymous"></script>
     <script src="../js/datatables-simple-demo.js"></script>
  </body>
</html>
<?php } ?>
```

d. Action pages:

The below figure illustrates action page to add a user with admin in consultancy management system (CMS). This page contains some textboxes where it’s required to enter the user information like username, password, mobile number and email address.

Creation or inserting a user to Database:

For creation of user we need to insert the details of the user like First name, Last name, Email address, Contact Number, Password and Confirm password. We need to click on create account button, This button acts as a action page and it creates a user in the database.

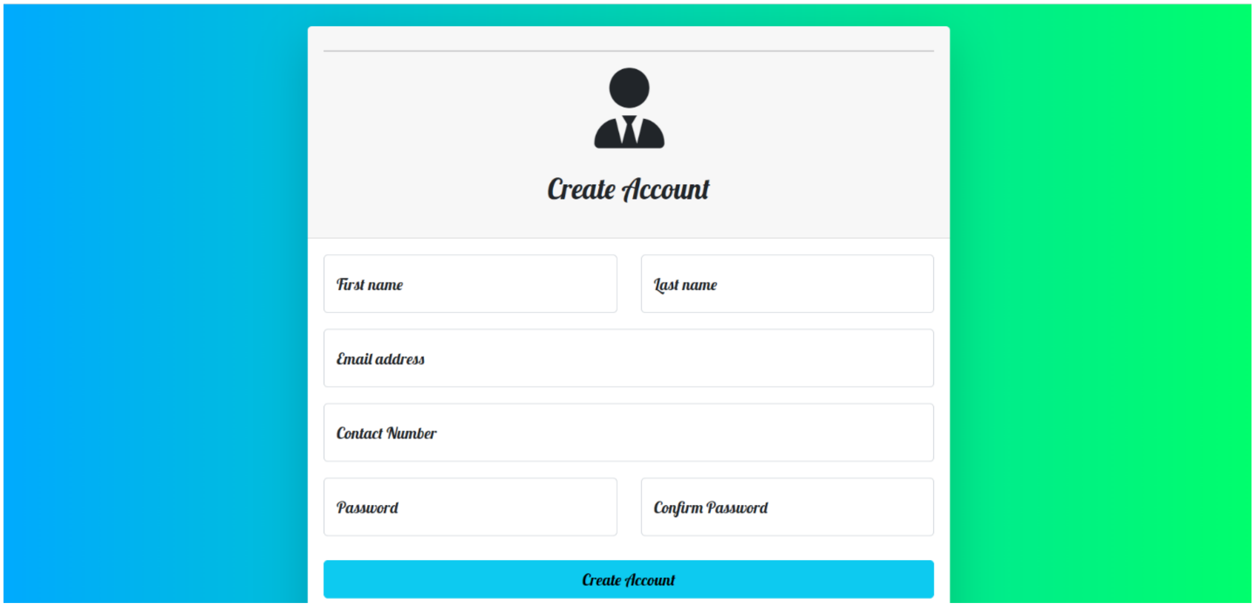


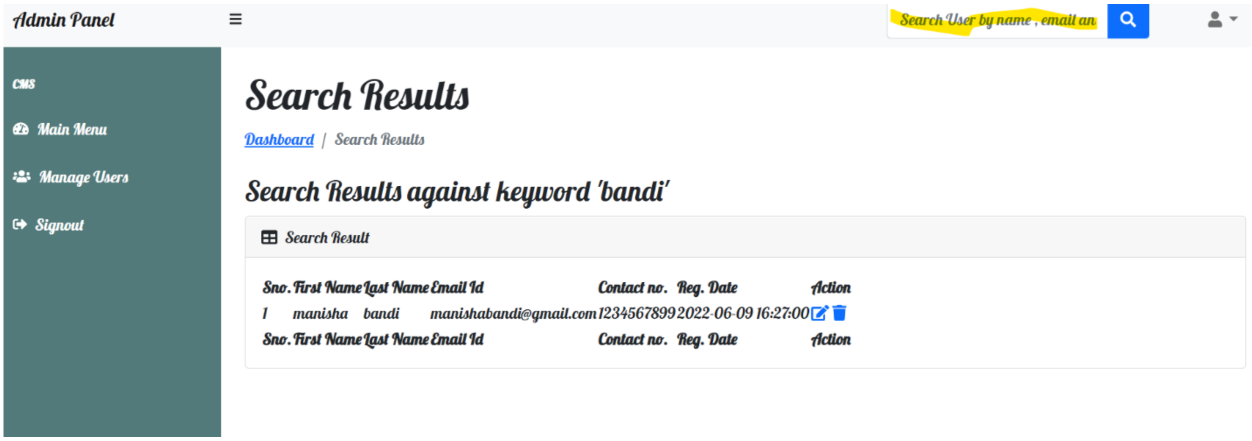
Fig. Creating/Inserting a user into Database.

```
<?php session_start();
include_once('../includes/config.php');
if (strlen($_SESSION['adminid']==0)) {
  header('location:logout.php');
  } else{

?>
<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8" />
        <meta http-equiv="X-UA-Compatible" content="IE=edge" />
        <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no" />
        <meta name="description" content="" />
        <meta name="author" content="" />
        <title>User Profile | CMS</title>
        <link href="https://cdn.jsdelivr.net/npm/simple-datatables@latest/dist/style.css"
rel="stylesheet" />
        <link href="../css/styles.css" rel="stylesheet" />
        <script src="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.15.3/js/all.min.js"
crossorigin="anonymous"></script>
    </head>
    <body class="sb-nav-fixed">
      <?php include_once('includes/navbar.php');?>
        <div id="layoutSidenav">
          <?php include_once('includes/sidebar.php');?>
      <div id="layoutSidenav_content">
        <main>
          <div class="container-fluid px-4">

            <?php
            $userid=$_GET['uid'];
            $query=mysqli_query($con,"select * from users where id='$userid'");
            while($result=mysqli_fetch_array($query))
            {?>
            <h1 class="mt-4"><?php echo $result['fname'];?>'s Profile</h1>
            <div class="card mb-4">

              <div class="card-body">
                <a href="edit-profile.php?uid=<?php echo $result['id'];?>">Edit</a>
                <table class="table table-bordered">
                  <tr>
                   <th>First Name</th>
                     <td><?php echo $result['fname'];?></td>
                  </tr>
                  <tr>
                     <th>Last Name</th>
                     <td><?php echo $result['lname'];?></td>
                  </tr>
                  <tr>
                     <th>Email</th>
                     <td colspan="3"><?php echo $result['email'];?></td>
                  </tr>
                    <tr>
                     <th>Contact No.</th>
                     <td colspan="3"><?php echo $result['contactno'];?></td>
                  </tr>

                      <tr>
                     <th>Reg. Date</th>
                     <td colspan="3"><?php echo $result['posting_date'];?></td>
                  </tr>
                   </tbody>
                </table>
              </div>
            </div>
<?php } ?>

          </div>
        </main>

      </div>
```

```
        </div>
        <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.0/dist/js/bootstrap.bundle.min.js"
crossorigin="anonymous"></script>
        <script src="../js/scripts.js"></script>
        <script src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.8.0/Chart.min.js"
crossorigin="anonymous"></script>
        <script src="https://cdn.jsdelivr.net/npm/simple-datatables@latest"
crossorigin="anonymous"></script>
        <script src="../js/datatables-simple-demo.js"></script>
    </body>
</html>
<?php } ?>
```

Selecting users from Database:

We can get the user details by searching with user name, email or contact number in the Search bar in the Search results page.



Search Results

Dashboard / Search Results

Search Results against keyword 'bandi'

Search Result

Sno.	First Name	Last Name	Email Id	Contact no.	Reg. Date	Action
1	manisha	bandi	manishabandi@gmail.com	1234567899	2022-06-09 16:27:00	✎ 🗑
Sno.	First Name	Last Name	Email Id	Contact no.	Reg. Date	Action

Fig: Searching for the users in the database.

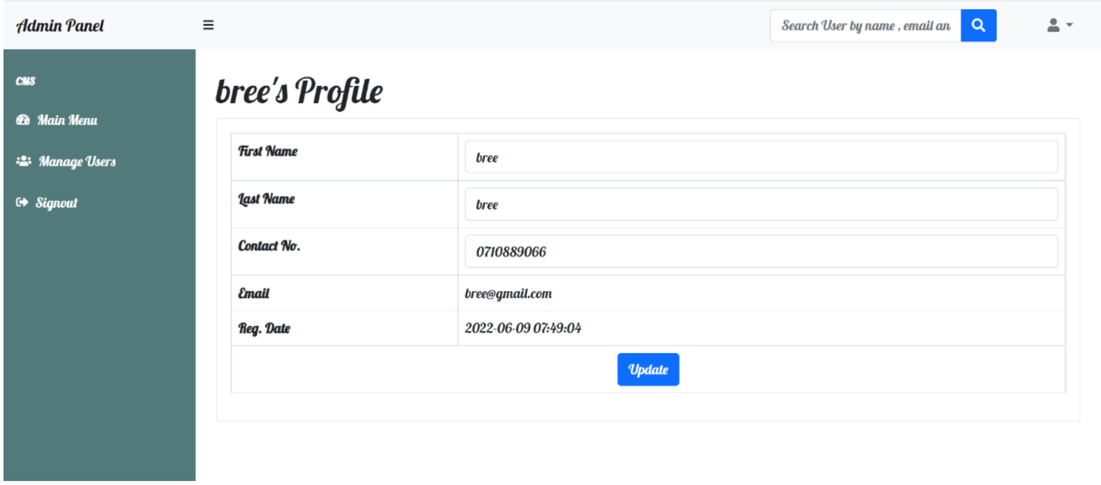
Code for Searching for user details:

```
<?php session_start();
include_once('../includes/config.php');
if (strlen($_SESSION['adminid']==0)) {
  header('location:logout.php');
  } else{

?>
<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8" />
        <meta http-equiv="X-UA-Compatible" content="IE=edge" />
        <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no" />
        <meta name="description" content="" />
        <meta name="author" content="" />
        <title>User Profile | CMS</title>
        <link href="https://cdn.jsdelivr.net/npm/simple-datatables@latest/dist/style.css"
rel="stylesheet" />
        <link href="../css/styles.css" rel="stylesheet" />
        <script src="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.15.3/js/all.min.js"
crossorigin="anonymous"></script>
    </head>
    <body class="sb-nav-fixed">
      <?php include_once('includes/navbar.php');?>
        <div id="layoutSidenav">
          <?php include_once('includes/sidebar.php');?>
            <div id="layoutSidenav_content">
                <main>
                    <div class="container-fluid px-4">

                        <?php
                        $userid=$_GET['uid'];
                        $query=mysqli_query($con,"select * from users where id='$userid'");
                        while($result=mysqli_fetch_array($query))
                        {?>
                        <h1 class="mt-4"><?php echo $result['fname'];?>'s Profile</h1>
                        <div class="card mb-4">

                            <div class="card-body">
                                <a href="edit-profile.php?uid=<?php echo $result['id'];?>">Edit</a>
                                <table class="table table-bordered">
                                   <tr>
                                    <th>First Name</th>
                                       <td><?php echo $result['fname'];?></td>
                                   </tr>
                                   <tr>
                                       <th>Last Name</th>
                                       <td><?php echo $result['lname'];?></td>
                                   </tr>
                                   <tr>
                                       <th>Email</th>
                                       <td colspan="3"><?php echo $result['email'];?></td>
                                   </tr>
                                     <tr>
                                       <th>Contact No.</th>
                                       <td colspan="3"><?php echo $result['contactno'];?></td>
                                   </tr>


                                        <tr>
                                       <th>Reg. Date</th>
                                       <td colspan="3"><?php echo $result['posting_date'];?></td>
                                   </tr>
```

```
                                    </tbody>
                                </table>
                            </div>
                        </div>
<?php } ?>

                    </div>
                </main>

            </div>
        </div>
        <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.0/dist/js/bootstrap.bundle.min.js"
crossorigin="anonymous"></script>
        <script src="../js/scripts.js"></script>
        <script src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.8.0/Chart.min.js"
crossorigin="anonymous"></script>
        <script src="https://cdn.jsdelivr.net/npm/simple-datatables@latest"
crossorigin="anonymous"></script>
        <script src="../js/datatables-simple-demo.js"></script>
    </body>
</html>
<?php } ?>
```

Updating User Details:

Admin can update the details of the user by clicking on the edit button.



bree's Profile

First Name	bree
Last Name	bree
Contact No.	0710889066
Email	bree@gmail.com
Reg. Date	2022-06-09 07:49:04

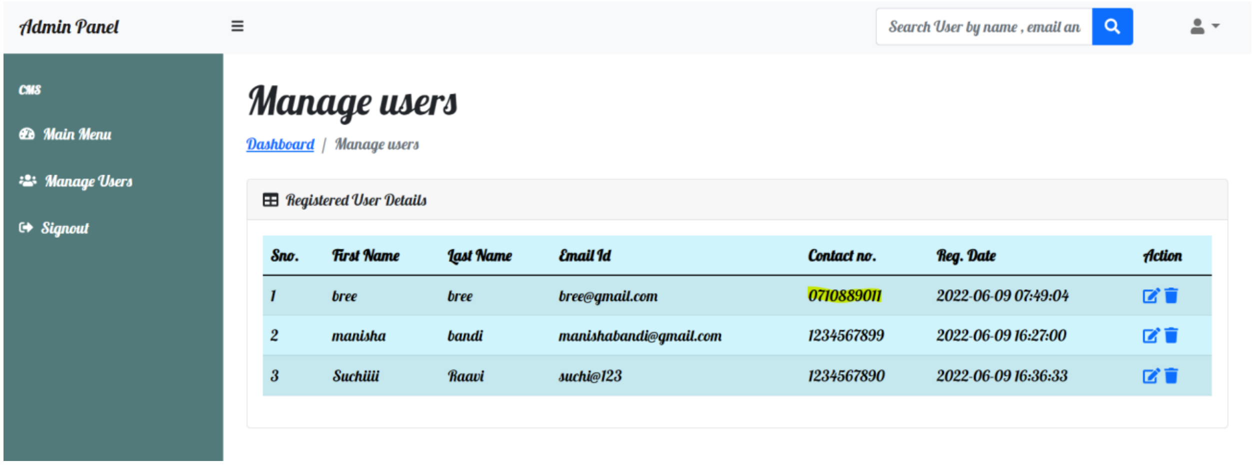
Fig: Before updating user details.

Code for updating of user:

```
<?php session_start();
include_once('../includes/config.php');
if (strlen($_SESSION['adminid']==0)) {
  header('location:logout.php');
  } else{
//Code for Updation
if(isset($_POST['update']))
{
    $fname=$_POST['fname'];
    $lname=$_POST['lname'];
    $contact=$_POST['contact'];
$userid=$_GET['uid'];
    $msg=mysqli_query($con,"update users set
fname='$fname',lname='$lname',contactno='$contact' where id='$userid'");

if($msg)
{
    echo "<script>alert('Profile updated successfully');</script>";
       echo "<script type='text/javascript'> document.location = 'manage-users.php'; </script>";
}
}



?>
<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8" />
        <meta http-equiv="X-UA-Compatible" content="IE=edge" />
        <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no" />
        <meta name="description" content="" />
        <meta name="author" content="" />
        <title>Edit Profile | ADVANCED UI WITH DATABASE</title>
        <link href="https://cdn.jsdelivr.net/npm/simple-datatables@latest/dist/style.css"
rel="stylesheet" />
        <link href="../css/styles.css" rel="stylesheet" />
        <script src="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.15.3/js/all.min.js"
crossorigin="anonymous"></script>
    </head>
    <body class="sb-nav-fixed">
      <?php include_once('includes/navbar.php');?>
        <div id="layoutSidenav">
          <?php include_once('includes/sidebar.php');?>
            <div id="layoutSidenav_content">
            <main>
                <div class="container-fluid px-4">

<?php
$userid=$_GET['uid'];
$query=mysqli_query($con,"select * from users where id='$userid'");
while($result=mysqli_fetch_array($query))
{?>
                    <h1 class="mt-4"><?php echo $result['fname'];?>'s Profile</h1>
                    <div class="card mb-4">
                   <form method="post">
                        <div class="card-body">
                            <table class="table table-bordered">
                              <tr>
                               <th>First Name</th>
                                  <td><input class="form-control" id="fname" name="fname"
type="text" value="<?php echo $result['fname'];?>" required /></td>
                              </tr>
                              <tr>
                                  <th>Last Name</th>
                                  <td><input class="form-control" id="lname" name="lname" type="text"
value="<?php echo $result['lname'];?>"  required /></td>
                              </tr>
                                    <tr>
                                  <th>Contact No.</th>
                                  <td colspan="3"><input class="form-control" id="contact"
name="contact" type="text" value="<?php echo $result['contactno'];?>"  pattern="[0-9]{10}"
title="10 numeric characters only"  maxlength="10" required /></td>
                              </tr>
                              <tr>
                                  <th>Email</th>
                                  <td colspan="3"><?php echo $result['email'];?></td>
                              </tr>



                                   <tr>
                                  <th>Reg. Date</th>
                                  <td colspan="3"><?php echo $result['posting_date'];?></td>
                              </tr>
                              <tr>
                                  <td colspan="4" style="text-align:center ;"><button type="submit"
class="btn btn-primary btn-block" name="update">Update</button></td>

                              </tr>
                               </tbody>
                            </table>
```

```
              </div>
              </form>
            </div>
<?php } ?>

          </div>
        </main>

      </div>
    </div>
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.0/dist/js/bootstrap.bundle.min.js"
crossorigin="anonymous"></script>
    <script src="../js/scripts.js"></script>
    <script src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.8.0/Chart.min.js"
crossorigin="anonymous"></script>
    <script src="https://cdn.jsdelivr.net/npm/simple-datatables@latest"
crossorigin="anonymous"></script>
    <script src="../js/datatables-simple-demo.js"></script>
  </body>
</html>
<?php } ?>
```

After Updating User:



Manage users

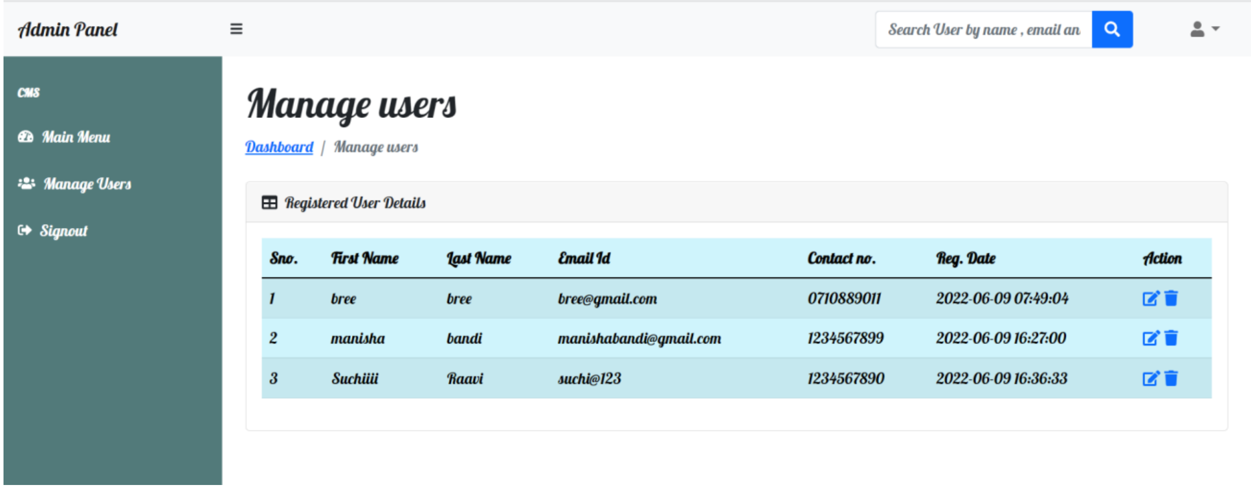
Registered User Details

Sno.	First Name	Last Name	Email Id	Contact no.	Reg. Date	Action
1	bree	bree	bree@gmail.com	0710889011	2022-06-09 07:49:04	
2	manisha	bandi	manishabandi@gmail.com	1234567899	2022-06-09 16:27:00	
3	Suchiiii	Raavi	suchi@123	1234567890	2022-06-09 16:36:33	

Fig: After updating contact number of User.

Deleting the User:

In admin Panel page, admin has access to delete the user from the database by clicking the delete button in manage user’s menu.



Manage users

Registered User Details

Sno.	First Name	Last Name	Email Id	Contact no.	Reg. Date	Action
1	bree	bree	bree@gmail.com	0710889011	2022-06-09 07:49:04	✎ 🗑
2	manisha	bandi	manishabandi@gmail.com	1234567899	2022-06-09 16:27:00	✎ 🗑
3	Suchiiii	Raavi	suchi@123	1234567890	2022-06-09 16:36:33	✎ 🗑

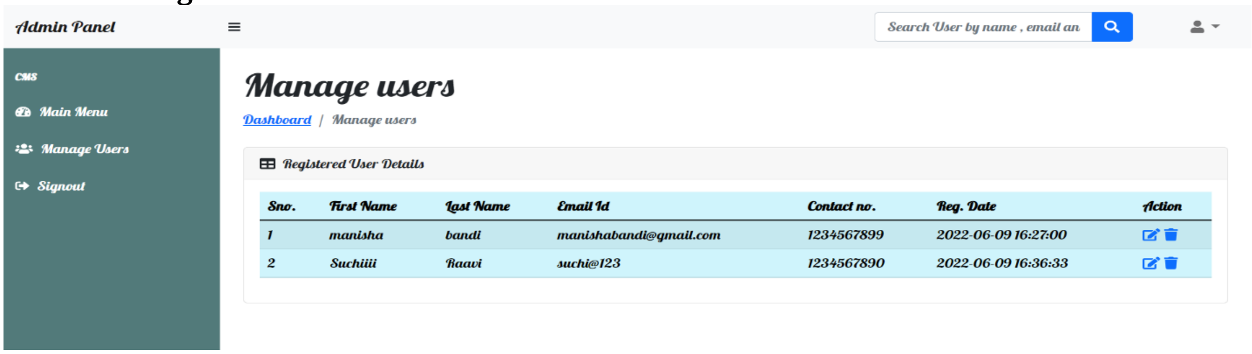
Fig: Before deleting user from database.

Code for deleting a user:

```
<?php session_start();
include_once('../includes/config.php');
if (strlen($_SESSION['adminid']==0)) {
  header('location:logout.php');
  } else{
// for deleting user
if(isset($_GET['id']))
{
$adminid=$_GET['id'];
$msg=mysqli_query($con,"delete from users where id='$adminid'");
if($msg)
{
echo "<script>alert('Data deleted');</script>";
}
}
   ?>
<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8" />
        <meta http-equiv="X-UA-Compatible" content="IE=edge" />
        <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no" />
        <meta name="description" content="" />
        <meta name="author" content="" />
        <title>Manage Users | CMS</title>
        <link href="https://cdn.jsdelivr.net/npm/simple-datatables@latest/dist/style.css"
rel="stylesheet" />
```

```
        <link href="../css/styles.css" rel="stylesheet" />
        <script src="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.15.3/js/all.min.js"
crossorigin="anonymous"></script>

    </head>
    <body class="sb-nav-fixed">
      <?php include_once('includes/navbar.php');?>
        <div id="layoutSidenav">
         <?php include_once('includes/sidebar.php');?>
            <div id="layoutSidenav_content">
                <main>
                    <div class="container-fluid px-4">
                        <h1 class="mt-4">Manage users</h1>
                        <ol class="breadcrumb mb-4">
                            <li class="breadcrumb-item"><a href="dashboard.php">Dashboard</a></li>
                            <li class="breadcrumb-item active">Manage users</li>
                        </ol>

                        <div class="card mb-4">
                            <div class="card-header">
                                <i class="fas fa-table me-1"></i>
                                Registered User Details
                            </div>
                            <div class="card-body">
                                <table id="datatablesSimple" class="table table-info table-striped">
                                    <thead>
                                        <tr>
                                             <th>Sno.</th>
                                  <th>First Name</th>
                                  <th> Last Name</th>
                                  <th> Email Id</th>
                                  <th>Contact no.</th>
                                  <th>Reg. Date</th>
                                  <th>Action</th>
                                        </tr>
                                    </thead>
                                    <tfoot>

                                        </tr>
                                    </tfoot>
                                    <tbody>
                                              <?php $ret=mysqli_query($con,"select * from users");
                              $cnt=1;
                              while($row=mysqli_fetch_array($ret))
                              {?>
                              <tr>
                              <td><?php echo $cnt;?></td>
                                  <td><?php echo $row['fname'];?></td>
                                  <td><?php echo $row['lname'];?></td>
                                  <td><?php echo $row['email'];?></td>
                                  <td><?php echo $row['contactno'];?></td>  <td><?php echo
$row['posting_date'];?></td>
                                  <td>

                                   <a href="user-profile.php?uid=<?php echo $row['id'];?>">
                             <i class="fas fa-edit"></i></a>
                                   <a href="manage-users.php?id=<?php echo $row['id'];?>"
onClick="return confirm('Do you really want to delete');"><i class="fa fa-trash" aria-
hidden="true"></i></a>
                                  </td>
                              </tr>
                              <?php $cnt=$cnt+1; }?>

                                    </tbody>
                                </table>
                            </div>
                        </div>
                    </div>
                </main>

            </div>
        </div>
        <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.0/dist/js/bootstrap.bundle.min.js"
crossorigin="anonymous"></script>
        <script src="../js/scripts.js"></script>
        <script src="https://cdn.jsdelivr.net/npm/simple-datatables@latest"
crossorigin="anonymous"></script>
        <script src="../js/datatables-simple-demo.js"></script>
    </body>
</html>
<?php } ?>
```

After deleting user:



Manage users

Dashboard / Manage users

Registered User Details

Sno.	First Name	Last Name	Email Id	Contact no.	Reg. Date	Action
1	manisha	bandi	manishabandi@gmail.com	1234567899	2022-06-09 16:27:00	✎ 🗑
2	Suchiiii	Raavi	suchi@123	1234567890	2022-06-09 16:36:33	✎ 🗑

Fig. After deleting user from database.

e. Conclusion and Future work:

From this Project Consultancy Management System (CMS), we have learned how to work with databases, normalization, entity relationships, sql commands for creating, inserting and manipulating the tables, database optimization, database connection, graphical user interface implementation with php and database security. All these concepts helped us to implement an end-to-end user interface for contact management system. There is a scope in extending the consultancy management system by making it more dynamic and security can be increased and there is also scope for implementing the more functionalities for the user and admin where they can perform additional operations.

2.8 References:

[1] https://studentprojectguide.com/vb-net/job-consultancy-management-system/

[2] https://erdplus.com/edit-diagram/41e53d32-f35f-48dc-8238-d7189f1851f9
[3] https://www.w3schools.com/sql/sql_join.asp
[4] https://www.adb.org/business/how-to/what-consultant-management-system
[5] https://www.computerhope.com/jargon/g/gui.htm