

Team - 13

Bright Beats (Project Report) |

Raghav Krishna M (2023BCS0171)

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Github Repo Link -> <https://github.com/RaghavEscada/Bright-Beats-Full-Mono-Repo>

Team members:-

- 1) Raghav Krishna M (2023BCS0171)
- 2) Bhuvan SM (2023BCS0198)
- 3) Suhail Khan (2023BCS0222)
- 4) Minhaj P S (2023BCS0225)
- 5) Nahil Rasheed (2023BCY0057)

Project Overview:

BrightBeats is a cutting-edge platform designed to connect students seeking mentorship with a pool of qualified student mentors. These mentors are carefully vetted through interviews conducted by faculty administrators, ensuring a high standard of expertise. Faculty members play a key role in maintaining the platform by adding and updating mentor profiles within their departments.

The platform's standout feature is its AI-powered search functionality. Users can interact with the system using natural language queries, which are seamlessly translated into SQL queries to efficiently retrieve relevant mentor information from the database. This intuitive approach simplifies the search process and enhances the overall user experience.

Key Objectives:

Robust Data Management: Create a well-structured database to store comprehensive information about student mentors, including their skills, experience, and availability.

Intelligent AI Integration: Develop an AI-driven interface that empowers users to interact with the database using natural language, eliminating the need for complex search parameters.

Advanced Search Capabilities: Implement a powerful search engine that allows users to quickly find mentors based on specific skills, interests, or other criteria.

User-Centric Design: Build a user-friendly web interface that prioritizes ease of navigation and presents mentor profiles in a clear and organized manner.

Scalable Architecture: Ensure the platform can seamlessly accommodate a growing number of users and data without compromising performance.

Stringent Security Measures: Implement robust security protocols to safeguard user data and prevent unauthorized access.

Scope and Features:

Target Audience: Primarily faculty members responsible for managing student mentors and students seeking mentorship opportunities.

Core Features:

- Faculty registration and profile management
- Mentor profile creation and management
- AI-powered natural language search interface
- SQL-based database for efficient data storage and retrieval
- Intuitive and user-friendly web interface

Technology Stack:

- Frontend: Next Js, React Js, Streamlit, TKinter
- Backend: PyMysql for MySql Workbench interaction
- Database: MySQL Workbench by Oracle
- AI Integration: GROQ API (groq cloud) + finetuning

Initial Focus: The first version of the platform will prioritize essential features like mentor profiles and skill-based searches. Future enhancements will be based on user feedback and evolving needs.

Requirements Analysis:

Functional Requirements:

- User management (faculty and student registration, profile creation)
- Mentor profile management (adding, updating, deleting mentor details)
- AI-powered search with natural language processing
- Data visualization (organized display of mentor profiles)
- Administrative features (user account management, content moderation)

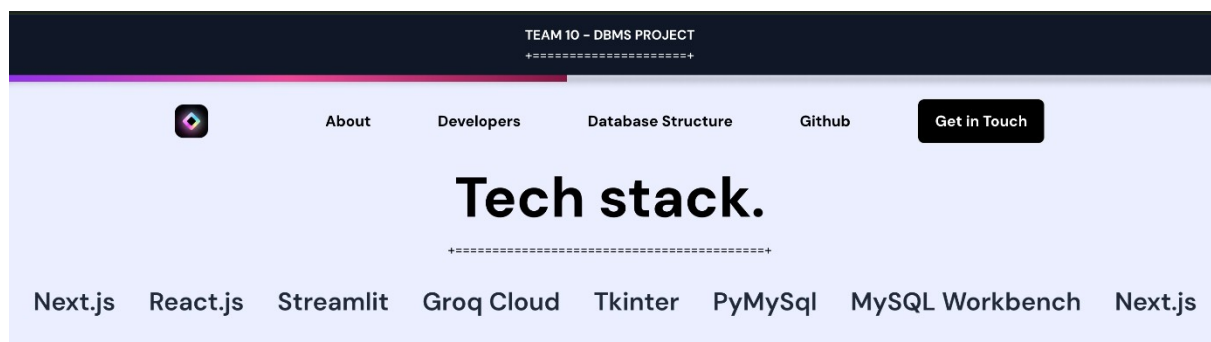
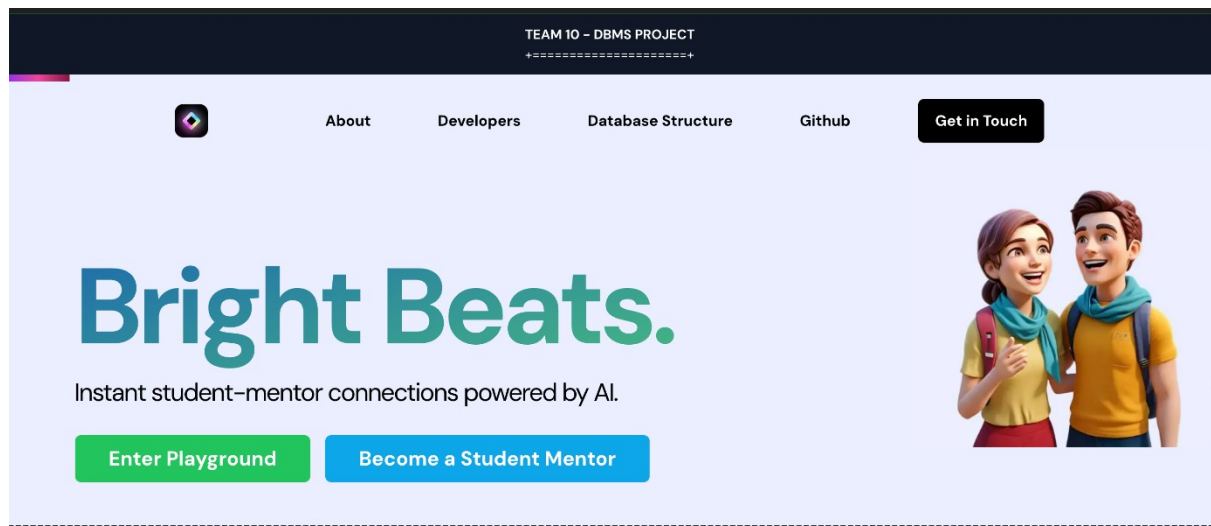
Non-Functional Requirements:

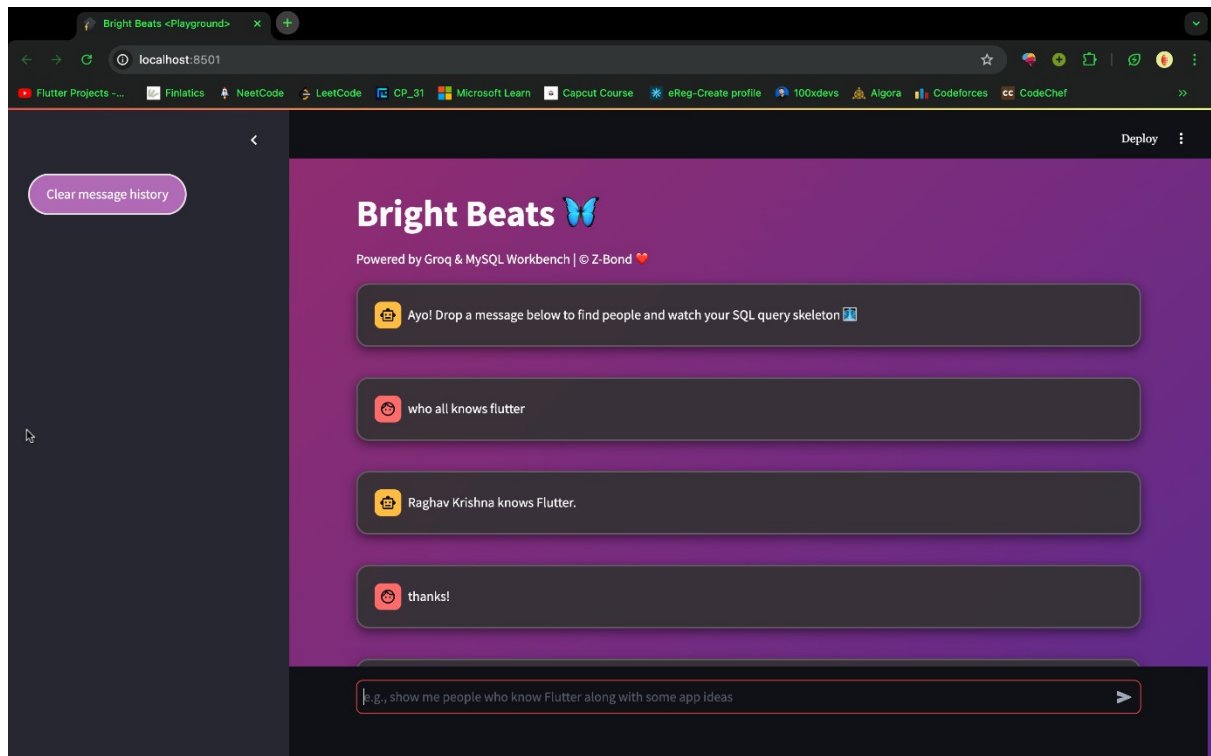
- Performance (handling concurrent users, fast query response times)
- Security (encryption, role-based access control, protection against threats)
- Scalability (accommodating growth)
- Usability (intuitive interface)
- Reliability (high uptime, backup and recovery)

By combining a comprehensive mentor database with AI-driven search capabilities, BrightBeats aims to revolutionize the way students connect with mentors, fostering a more accessible and efficient mentorship experience.

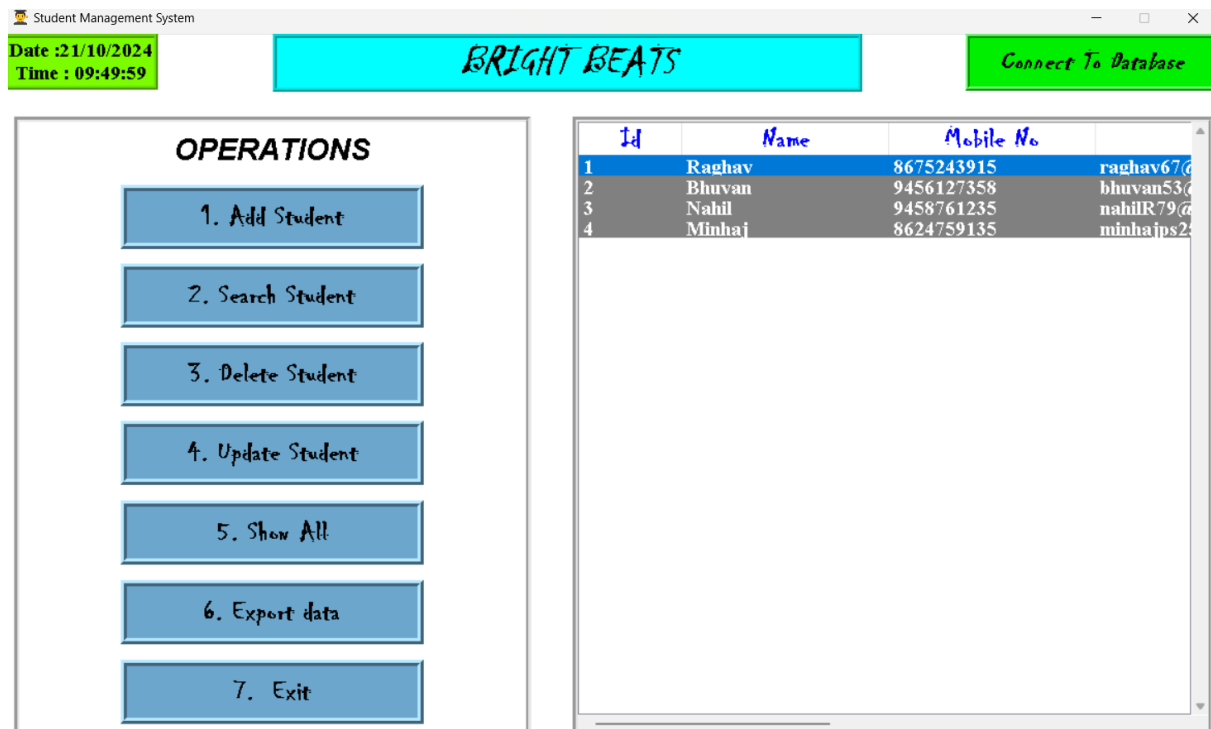
Implementations:

Landing page:





Database Management(will be done by subject expert):



Student Management System

Enter Id :

1

Enter Name :

Raghav

Enter Mobile :

8675243915

Enter Email :

raghav67@gmail.com

LinkedIn ID :

Raghav_Espada

GitHub ID :

Raghav_Esp

Enter Skillset :

Flutter

Enter Date :

21/10/2024

Enter Time :

09:36:35

Submit

Student Management System

Enter Id :

Enter Name :

Enter Mobile :

Enter Email :

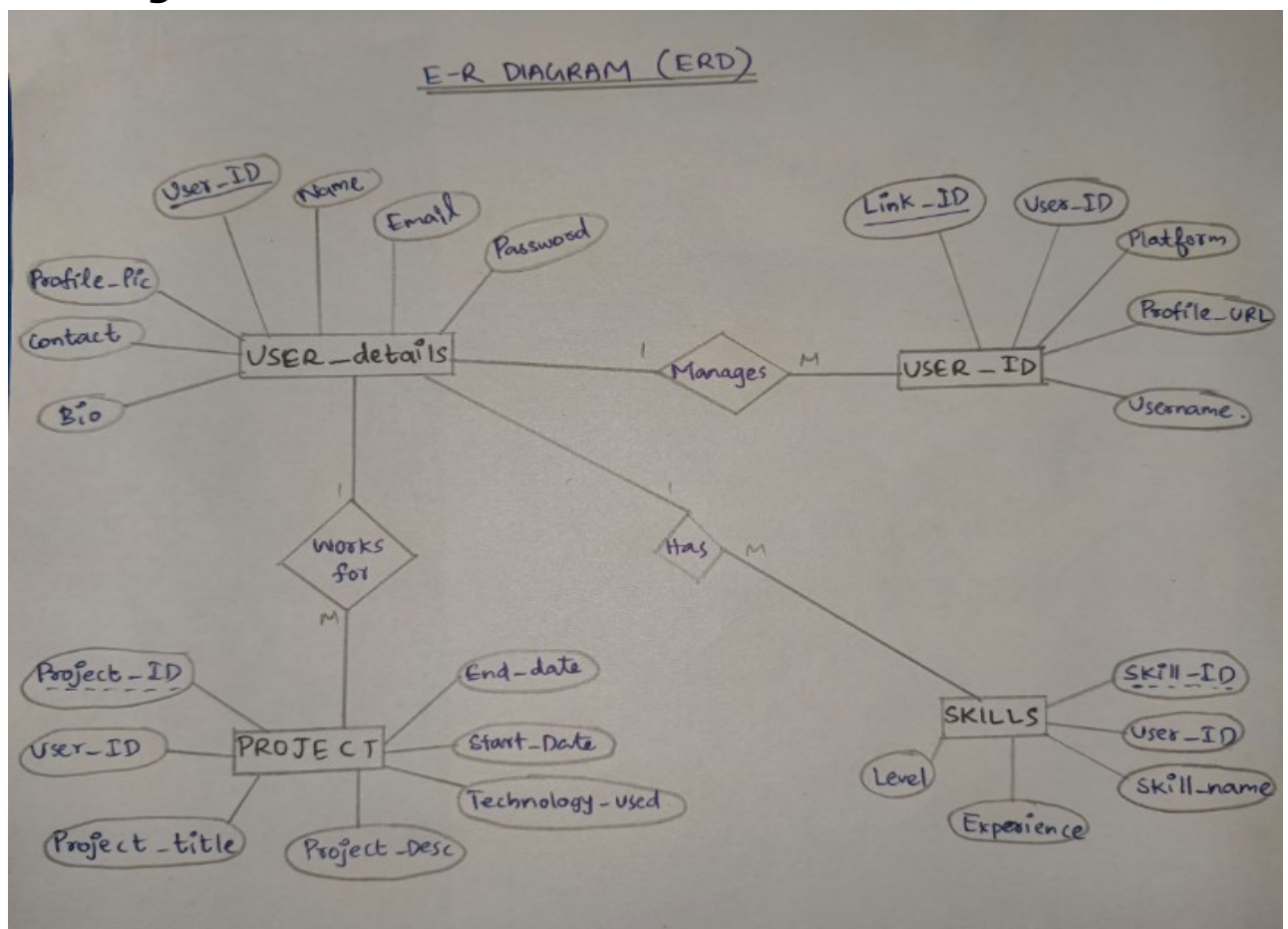
Enter LinkedIn ID :

Enter GitHub ID :

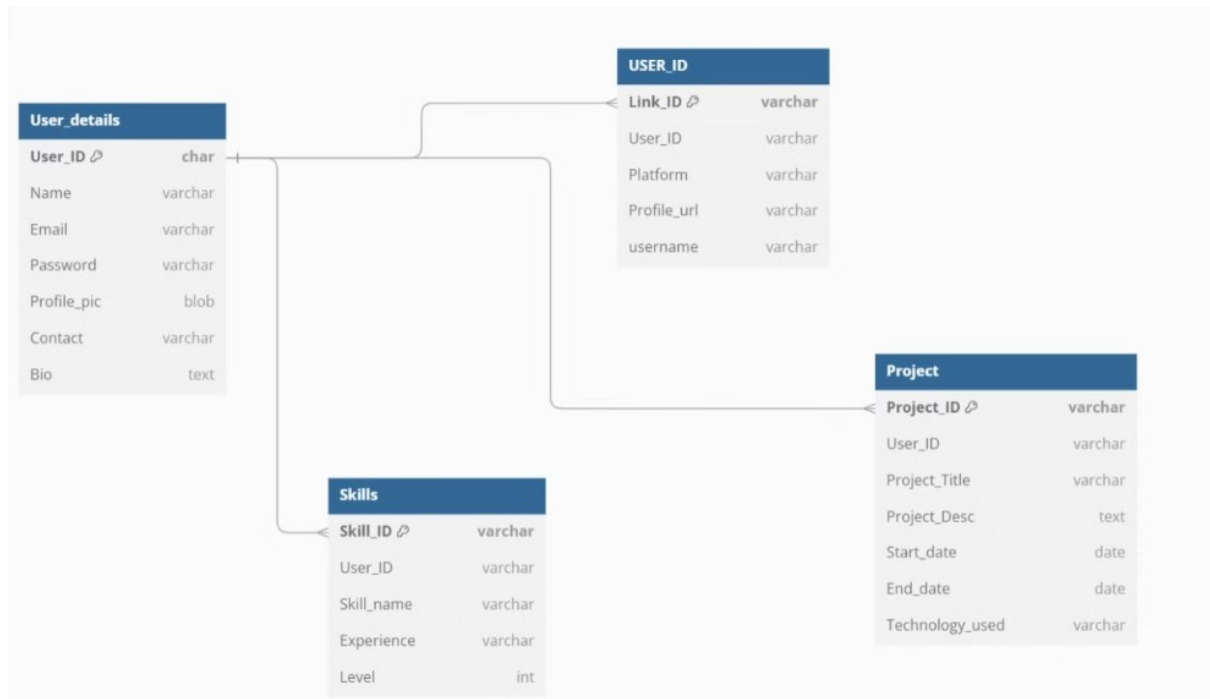
Enter Skillset :

Submit

ER-Diagram:



Shema Diagram:



Database Creation

```
1.CREATE TABLE User_Details (  
  User_ID INT PRIMARY KEY,  
  Name VARCHAR(100) NOT NULL,  
  Email VARCHAR(100) NOT NULL UNIQUE,  
  Password VARCHAR(255) NOT NULL,  
  Profile_Picture VARCHAR(255),  
  Contact_Info VARCHAR(50),  
  Bio TEXT  
);  
2.INSERT INTO User_Details (User_ID, Name, Email, Password,  
Profile_Picture, Contact_Info, Bio)  
VALUES  
(1, 'Raghav', 'raghav@example.com', 'hashed_password_123',  
'http://example.com/raghav.jpg', '123-456-7890', 'Software  
engineer specializing in cloud technologies and AI.'),
```

```

(2, 'Minhaj', 'minhaj@example.com', 'hashed_password_456',
'http://example.com/minhaj.jpg', '987-654-3210', 'Backend
developer with experience in Java and microservices. '),
(3, 'Bhuvan', 'bhuvan@example.com', 'hashed_password_789',
'http://example.com/bhuvan.jpg', '456-789-0123', 'Front-end
developer focused on React and Vue.js. '),
(4, 'Nahil', 'nahil@example.com', 'hashed_password_012',
'http://example.com/nahil.jpg', '321-654-0987', 'Data engineer
working with big data and analytics. '),
(5, 'Suhail', 'suhail@example.com', 'hashed_password_345',
'http://example.com/suhail.jpg', '789-012-3456', 'Machine
learning expert with a passion for data science. ');
3.INSERT INTO User_IDs (Link_ID, User_ID, Platform, Profile_URL,
Username)
VALUES
(1, 1, 'LinkedIn', 'http://linkedin.com/in/raghav',
'raghav_profile'),
(2, 2, 'Instagram', 'http://instagram.com/minhaj',
'minhaj_profile'),
(3, 3, 'LeetCode', 'http://leetcode.com/bhuvan',
'bhuvan_profile'),
(4, 4, 'GitHub', 'http://github.com/nahil', 'nahil_profile'),
(5, 5, 'Twitter', 'http://twitter.com/suhail', 'suhail_profile');
INSERT INTO Skills (Skill_ID, User_ID, Skill_Name,
Proficiency_Level, Years_Of_Experience)
VALUES
(1, 1, 'Python', 'Advanced', 5),
(2, 1, 'AI', 'Intermediate', 3),
(3, 2, 'Java', 'Advanced', 4),
(4, 2, 'Microservices', 'Intermediate', 2),
(5, 3, 'React', 'Intermediate', 3),
(6, 3, 'CSS', 'Beginner', 1),
(7, 4, 'SQL', 'Advanced', 4),
(8, 4, 'Data Analysis', 'Intermediate', 2),
(9, 5, 'Machine Learning', 'Advanced', 5),
(10, 5, 'Python', 'Intermediate', 3);

```


4.INSERT INTO Projects (Project_ID, User_ID, Project_Title, Project_Description, Technology_Used, Start_Date, End_Date, Status)

VALUES

(1, 1, 'AI Chatbot', 'Developed an AI-powered chatbot for customer service.', 'Python, TensorFlow', '2022-01-01', '2022-06-01', 'Completed'),

(2, 2, 'E-Commerce Backend', 'Built a scalable backend for an e-commerce platform.', 'Java, Spring Boot', '2021-03-15', '2022-02-01', 'Completed'),

(3, 3, 'Personal Portfolio', 'Created a personal portfolio website to showcase projects.', 'React, CSS', '2023-05-10', NULL, 'In Progress'),

(4, 4, 'Data Analysis Dashboard', 'Developed a dashboard for visualizing data insights.', 'SQL, Python, Tableau', '2022-04-01', '2022-12-15', 'Completed'),

(5, 5, 'Machine Learning Model', 'Built a predictive model for sales forecasting.', 'Python, Scikit-Learn', '2023-01-01', NULL, 'In Progress');

Database:

```
MySQL localhost:3306 ssl brightbeats SQL > select * from User_details;
```

| User_ID | Name | Email | Password | Profile_Picture | Contact_Info | Bio |
|---------|--------|--------------------|---------------------|-------------------------------|--------------|--|
| 1 | Raghav | raghav@example.com | hashed_password_123 | http://example.com/raghav.jpg | 123-456-7890 | Software engineer specializing in cloud technologies and AI. |
| 2 | Minhaj | minhaj@example.com | hashed_password_456 | http://example.com/minhaj.jpg | 987-654-3210 | Backend developer with experience in Java and microservices. |
| 3 | Bhuvan | bhuvan@example.com | hashed_password_789 | http://example.com/bhuvan.jpg | 456-789-0123 | Front-end developer focused on React and Vue.js. |
| 4 | Nahil | nahil@example.com | hashed_password_012 | http://example.com/nahil.jpg | 321-654-0987 | Data engineer working with big data and analytics. |
| 5 | Suhail | suhail@example.com | hashed_password_345 | http://example.com/suhail.jpg | 789-012-3456 | Machine learning expert with a passion for data science. |

```
MySQL localhost:3306 ssl brightbeats SQL > select * from User_IDs;
```

| Link_ID | User_ID | Platform | Profile_URL | Username |
|---------|---------|-----------|-------------------------------|----------------|
| 1 | 1 | LinkedIn | http://linkedin.com/in/raghav | raghav_profile |
| 2 | 2 | Instagram | http://instagram.com/minhaj | minhaj_profile |
| 3 | 3 | LeetCode | http://leetcode.com/bhuvan | bhuvan_profile |
| 4 | 4 | GitHub | http://github.com/nahil | nahil_profile |
| 5 | 5 | Twitter | http://twitter.com/suhail | suhail_profile |

5 rows in set (0.0007 sec)

MySQL localhost:3306 ssl brightbeats SQL > select * from skills;

| Skill_ID | User_ID | Skill_Name | Proficiency_Level | Years_Of_Experience |
|----------|---------|------------------|-------------------|---------------------|
| 1 | 1 | Python | Advanced | 5 |
| 2 | 1 | AI | Intermediate | 3 |
| 3 | 2 | Java | Advanced | 4 |
| 4 | 2 | Microservices | Intermediate | 2 |
| 5 | 3 | React | Intermediate | 3 |
| 6 | 3 | CSS | Beginner | 1 |
| 7 | 4 | SQL | Advanced | 4 |
| 8 | 4 | Data Analysis | Intermediate | 2 |
| 9 | 5 | Machine Learning | Advanced | 5 |
| 10 | 5 | Python | Intermediate | 3 |

MySQL localhost:3306 ssl brightbeats SQL > select * from projects;

| Project_ID | User_ID | Project_Title | Project_Description | Technology_Used |
|------------|---------|-------------------------|--|----------------------|
| 1 | 1 | AI Chatbot | Developed an AI-powered chatbot for customer service. | Python, TensorFlow |
| 2 | 2 | E-Commerce Backend | Built a scalable backend for an e-commerce platform. | Java, Spring Boot |
| 3 | 3 | Personal Portfolio | Created a personal portfolio website to showcase projects. | React, CSS |
| 4 | 4 | Data Analysis Dashboard | Developed a dashboard for visualizing data insights. | SQL, Python, Tableau |
| 5 | 5 | Machine Learning Model | Built a predictive model for sales forecasting. | Python, Scikit-Learn |