**P2 ASSIGNMENT**

**GROUP-7**

**Database Design and Conceptual ERD Document for Freelancer Collaboration Platform**

The Freelancer Collaboration Platform aims to address the following key business problems:

Provide an efficient system for managing freelancers, clients, projects, applications, and payments.

Ensure seamless interactions between entities by maintaining structured data relationships.

Automate processes like application tracking, project management, milestone tracking, notifications, payments, and dispute resolution.

Offer reporting and review functionalities to ensure transparency and reliability**.**

**Entities and Their Relationships**

**1. Freelancers**

* Stores personal and professional details of freelancers.
* Related to Projects (can apply for multiple projects).
* Related to Clients (hired by clients for projects).
* Related to Applications (submits applications for projects).
* Related to Reviews (receives reviews from clients).
* Related to Payments (receives payments for completed tasks).

**2. Clients**

* Stores business and contact details of clients.
* Related to Projects (can post multiple projects).
* Related to Freelancers (hires freelancers for projects).
* Related to Reviews (can provide reviews for freelancers).

**3. Projects**

* Stores details about projects posted by clients.
* Related to Clients (posted by a client).
* Related to Freelancers (freelancers apply and work on projects).
* Related to Applications (tracks applications for the project).
* Related to Tasks and Milestones (divides projects into smaller tasks and milestones).

**4. Applications**

* Tracks applications submitted by freelancers.
* Related to Freelancers (applied by a freelancer).
* Related to Projects (each application is linked to a specific project).

**5. Teams**

* Stores details about team assignments for projects.
* Related to Freelancers (freelancers assigned to teams).
* Related to Projects (teams work on projects).

**6. Tasks**

* Tracks project tasks and their completion status.
* Related to Projects (tasks belong to a project).
* Related to Freelancers (tasks assigned to freelancers).

**7. Milestones**

* Tracks project progress and payments.
* Related to Projects (milestones belong to projects).
* Related to Payments (triggers payments upon completion).

**8. Reviews**

* Stores feedback and ratings for freelancers and clients.
* Related to Freelancers (freelancers receive reviews).
* Related to Clients (clients receive reviews from freelancers).

**9. Notifications**

* Tracks system alerts and updates.
* Related to Freelancers and Clients (notifications sent to users).

**10. Payments**

* Stores transaction details.
* Related to Freelancers (freelancers receive payments).
* Related to Clients (clients make payments).
* Related to Milestones (payments triggered upon milestone completion).

**11. Disputes**

* Tracks complaints and resolution details.
* Related to Freelancers and Clients (disputes between these entities).
* Related to Projects (disputes are tied to projects).

**12. Subscription Plans**

* Stores details about platform subscriptions.
* Related to Clients and Freelancers (subscribed users).
* Related to Payments (tracks payments for subscriptions).

**13. Admin Users**

* Manages platform operations.
* Related to Clients, Freelancers, and Projects (admin oversight).
* Related to Disputes (resolves disputes).

**14. Reports**

* Stores generated reports for users and admins.
* Related to **Clients** and **Freelancers** (users can generate reports).
* Related to **Admin Users** (admins oversee reports).

**15. Service Fees**

* Tracks platform service charges.
* Related to **Payments** (fees deducted from freelancer payments).
* Related to **Clients** (clients pay service charges for transactions).

**Key Design Decisions**

1. Normalization: The database follows normalization principles to eliminate redundancy and improve data integrity.
2. Entity Relationships: Proper use of foreign keys ensures referential integrity between entities.
3. Payment and Dispute Tracking: Special consideration given to tracking payments and disputes to ensure fair transactions.
4. Scalability: Designed to support large volumes of freelancers, clients, and projects efficiently.
5. Security Considerations: Secure storage of sensitive information such as passwords (hashed) and payment details.
6. Notification System: Implemented to keep users informed about application status, payments, and disputes.