Who did what in each stage:  
Stage 1 (Requirements):

Requirements were split evenly between all 3 team members.

Stage 2 (DBMS Design and Implementation):

Ahmed Fekry: ERD, UPDATE queries.

Mohamed Rabie: Relational Data model, INSERT queries.

Omar Alhaywan: CREATE and SELECT queries.

Stage 3 (GUI using prompt engineering):

Ahmed Fekry: Admin web page and functionality.

Mohamed Rabie: Coach, Client web pages.

Omar Alhaywan: initial prompts to create the first few landing pages, Web page and database integration.

Stage 4 (Testing and Validation):

Testing and Validation was split evenly between us and each one performed one automated test case.

Requirement – Query Matrix:

| **Query** | **Requirement ID** | **Description** |
| --- | --- | --- |
| INSERT INTO Clients (ClientID, FirstName, LastName, Age, Gender, StartDate, Email, PhoneNumber, AssignedCoachID, NPID, TPID, MembershipStatus) VALUES (...); | **REQ\_001** | Inserting a new client profile into the system. |
| DELETE FROM Clients WHERE ClientID = 7; | **REQ\_001** | Deleting a client profile from the system. |
| UPDATE Clients SET AssignedCoachID = 2 WHERE ClientID = 1; | **REQ\_004** | Assigning a coach to a specific client. |
| SELECT cl.FirstName, cl.LastName, n.planType, t.DaysPerWeek, co.FirstName, co.LastName FROM Clients cl, nutritionPlan n, trainingPlan t, Coaches co WHERE cl.NPID = n.NutritionID AND cl.TPID = t.TrainingID AND cl.AssignedCoachID = co.CoachID AND ClientID = 2; | **REQ\_006** | Displaying a dashboard summarizing a client's active plans and assigned coach. |
| UPDATE Clients SET TPID = 3 WHERE ClientID = 1; | **REQ\_007** | Updating and monitoring the progress of a client by modifying their training plan. |
| SELECT cl.FirstName, cl.LastName FROM Clients cl, Coaches co WHERE co.Specialty = 'Calisthenics' AND cl.AssignedCoachID = co.CoachID; | **REQ\_004** | Finding clients assigned to a coach with a specific specialty (Calisthenics). |
| SELECT c.ClientID, c.FirstName, c.LastName FROM Clients c, nutritionPlan n WHERE c.NPID = n.NutritionID AND n.Calories >= 2000 ORDER BY c.ClientID DESC; | **REQ\_003** | Selecting clients with a nutrition plan of 2000 calories or more. |
| SELECT cl.FirstName, cl.LastName FROM Clients cl, Coaches co WHERE cl.AssignedCoachID = co.CoachID AND co.CoachID = 4; | **REQ\_004** | Selecting clients assigned to a specific coach (CoachID = 4). |
| ALTER TABLE Clients ADD username VARCHAR(100); ALTER TABLE Clients ADD password VARCHAR(255); | **REQ\_005** | Adding authentication fields (username and password) for clients. |
| ALTER TABLE Administrators ADD username VARCHAR(100); ALTER TABLE Administrators ADD password VARCHAR(255); | **REQ\_005** | Adding authentication fields (username and password) for administrators. |
| ALTER TABLE Coaches ADD username VARCHAR(100); ALTER TABLE Coaches ADD password VARCHAR(255); | **REQ\_005** | Adding authentication fields (username and password) for coaches. |
| UPDATE Clients SET username = 'fathyaley', password = 'fathyaley' WHERE ClientID = 1; | **REQ\_005** | Setting authentication credentials for a specific client. |
| UPDATE Coaches SET username = 'NasserAley', password = 'NasserAley' WHERE CoachID = 1; | **REQ\_005** | Setting authentication credentials for a specific coach. |
| UPDATE Administrators SET username = 'omar', password = 'omar' WHERE AdminID = 1; | **REQ\_005** | Setting authentication credentials for a specific administrator. |
| SELECT \* FROM Clients; | **REQ\_001** | Viewing all client profiles in the system. |
| SELECT \* FROM Coaches; | **REQ\_004** | Viewing all coach profiles in the system. |
| SELECT \* FROM nutritionPlan; | **REQ\_003** | Viewing all nutrition plans in the system. |
| SELECT \* FROM trainingPlan; | **REQ\_002** | Viewing all training plans in the system. |

Requirement – Testing Matrix:

| **Test Case ID** | **Requirement ID** | **Description** |
| --- | --- | --- |
| TC\_001 | REQ\_001 | Create a new client profile. |
| TC\_002 | REQ\_001 | Verify that an admin can update an existing client profile. |
| TC\_003 | REQ\_002 | Verify that a coach can assign a training plan for a client. |
| TC\_004 | REQ\_002 | Verify that a coach can update a training plan for a client. |
| TC\_005 | REQ\_004 | Verify that a coach can view their assigned clients. |
| TC\_006 | REQ\_005 | Verify that a client cannot log in with incorrect credentials. |
| TC\_007 | REQ\_010 | Verify that the system supports multiple roles (admin, coach, client). |
| TC\_008 | REQ\_001 | Verify that an admin can delete a client profile. |
| TC\_009 | REQ\_008 | Verify that a client can view their training plan. |
| TC\_010 | REQ\_008 | Verify that a client can view their nutrition plan. |
| TC\_011 | REQ\_013 | Verify that a client can cancel their membership. |
| TC\_012 | REQ\_013 | Verify that a client can re-register their membership. |
| TC\_013 | REQ\_001 | Verify that an admin can view all clients in the system. |
| TC\_014 | REQ\_002 | Verify that a coach can view all training plans. |
| TC\_015 | REQ\_008 | Verify that a client cannot view training plans without logging in. |
| TC\_016 | REQ\_008 | Verify that a client cannot view nutrition plans without logging in. |
| TC\_017 | REQ\_002 | Verify that a coach cannot assign plans to a client without selecting a plan. |
| TC\_018 | REQ\_013 | Verify that a client cannot cancel membership if already cancelled. |
| TC\_019 | REQ\_013 | Verify that a client cannot re-register if membership is active. |
| TC\_020 | REQ\_003 | Verify that an admin can view all nutrition plans. |
| TC\_021 | REQ\_004 | Verify that a coach cannot view clients assigned to another coach. |
| TC\_022 | REQ\_010 | Verify that a client cannot access the admin dashboard. |
| TC\_023 | REQ\_010 | Verify that a coach cannot access the client dashboard. |
| TC\_024 | REQ\_002 | Verify that an admin can view all training plans. |
| TC\_025 | REQ\_010 | Verify that a client cannot access the coach dashboard. |
| TC\_026 | REQ\_002 | Verify that a coach cannot assign a training plan to a non-existent client. |
| TC\_027 | REQ\_008 | Verify that a client cannot view a nutrition plan if none is assigned. |
| TC\_028 | REQ\_004 | Verify that an admin can assign a coach to a client. |
| TC\_029 | REQ\_004 | Verify that an admin cannot assign a coach to a non-existent client. |
| TC\_030 | REQ\_007 | Verify that a coach can view their client's profile. |
| TC\_031 | REQ\_004 | Verify that a coach cannot view a profile of a client that isn't theirs. |