**Fitness Center Dashboard**

**1. Business Requirement Gathering**

* Identified 5 problem statements:
  1. Overall business performance (clients, trainers, revenue, profit).
  2. Monthly performance tracking (trends in revenue, users, profit).
  3. Membership status tracking (active/expired members, progress tracking).
  4. Fitness & health calculator (BMI, BMR, TDEE, calorie targets).
  5. Member profile details (personal + membership history).

**2. Data Collection & Import**

* Source: Excel file containing raw data for Users, Payments, Expenses, Calendar.
* Imported into Power BI Desktop.
* Verified column data types (Date, Numeric, Text).

**3. Data Modeling**

* Built a structured star schema with relationships:
  + Users[UserID] → Payments[UserID]
  + Users[UserID] → Expenses[UserID]
  + Calendar[Date] → Payments[PaymentDate], Expenses[Date]
* Added helper tables:
  + ColorCodes → for conditional colors/icons.
  + Slider Tables (Age, Weight, Height, Gender, Activity) → for What-If parameters in health calculator.
  + Measure Table → central location for all DAX measures.

**4. DAX Measures Development**

Created measures step by step, grouped by problem statements:

**📌 Problem Statement 1 – Overall Business Performance**

Users\_Count = DISTINCTCOUNT(Users[UserID]) // Total unique clients

Revenue = SUM(Payments[Amount]) // Total revenue

Expenses = SUM(Expenses[Amount]) // Total expenses

Profit = [Revenue] - [Expanses] // Net profit

👉 Purpose: Automates high-level financial and member KPIs.

**📌 Problem Statement 2 – Monthly Performance Tracking**

Max\_users = MAXX(ALL('Calendar'[Month], 'Calendar'[MonthIndex]), [Users\_Count])

Min\_users = MINX(ALL('Calendar'[Month], 'Calendar'[MonthIndex]), [Users\_Count])

Con\_Users\_Color =

VAR MaxUser = [Max\_users]

VAR MinUser = [Min\_users]

VAR Con\_Color = SELECTEDVALUE(ColorCodes[Codes])

VAR Value\_Switch = SELECTEDVALUE(Min\_Max\_Switch[Type])

VAR Min\_Color = IF(MinUser = [Users\_Count], Con\_Color, "gray")

VAR Max\_Color = IF(MaxUser = [Users\_Count], Con\_Color, "gray")

RETURN IF(Value\_Switch = "Max", Max\_Color, Min\_Color)

👉 Purpose: Tracks user count trends, highlights peak/low months with dynamic colors.

**📌 Problem Statement 3 – Membership Status Tracking**

Complete\_Days =

DATEDIFF(SELECTEDVALUE(Users[MembershipStart]), MIN(TODAY(), SELECTEDVALUE(Users[MembershipEnd])), DAY)

RemainingDays =

DATEDIFF(TODAY(), SELECTEDVALUE(Users[MembershipEnd]), DAY)

Left\_Days\_Count = [RemainingDays] - [Complete\_Days]

Total\_Days = [Complete\_Days] + [Left\_Days\_Count]

ProgressPercent = DIVIDE([Complete\_Days], [Total\_Days], 0) \* 100

SVG\_BarChart1 = ... // Creates visual SVG progress bar

User\_Platinum = CALCULATE([Users\_Count], Users[Membership] = "Platinum")

User\_Gold = CALCULATE([Users\_Count], Users[Membership] = "Gold")

User\_Silver = CALCULATE([Users\_Count], Users[Membership] = "Silver")

Platinum\_Active = CALCULATE([User\_Platinum], Users[Status] = "Active")

Gold\_Active = CALCULATE([User\_Gold], Users[Status] = "Active")

Silver\_Active = CALCULATE([User\_Silver], Users[Status] = "Active")

Gold\_Expired = CALCULATE([User\_Gold], Users[Status] = "Expired")

Silver\_Expired = CALCULATE([User\_Silver], Users[Status] = "Expired")

Platinum\_Expired = CALCULATE([User\_Platinum], Users[Status] = "Expired")

Last\_Refresh = FORMAT(FIRSTNONBLANK(Last\_Refresh[Refresh], "None"), "hh:mm AM/PM")

👉 Purpose: Tracks active vs expired memberships, calculates membership progress in % and shows it via progress bars.

**📌 Problem Statement 4 – Fitness & Health Calculations**

BMI =

VAR WeightKg = SELECTEDVALUE(Weight\_Slider[Weight\_Slider])

VAR HeightFeet = SELECTEDVALUE(Height\_Slider[Height\_Slider])

VAR HeightMeters = HeightFeet \* 0.3048

RETURN ROUND(WeightKg / (HeightMeters \* HeightMeters), 1)

BMI\_Color =

VAR BMIValue = [BMI]

RETURN SWITCH(TRUE(),

BMIValue < 18.5, "#467AB5",

BMIValue < 25, "#77A95C",

BMIValue < 30, "#CD714C",

"#C94B4B"

)

BMI\_Color\_Label =

VAR BMIValue = [BMI]

RETURN SWITCH(TRUE(),

BMIValue < 18.5, "Underweight",

BMIValue < 25, "Normal",

BMIValue < 30, "Overweight",

"Obese"

)

BMR =

VAR Weight = SELECTEDVALUE(Weight\_Slider[Weight\_Slider])

VAR Height = SELECTEDVALUE(Height\_Slider[Height\_Slider])

VAR Age = SELECTEDVALUE(Age\_Slider[Age\_Slider])

VAR Gender = SELECTEDVALUE(Slider\_Gender[Category])

RETURN IF(Gender = "Male",

(10 \* Weight) + (6.25 \* Height) - (5 \* Age) + 5,

(10 \* Weight) + (6.25 \* Height) - (5 \* Age) - 161)

TDEE = [BMR] \* SELECTEDVALUE(Slider\_Activity[ActivityFactor])

Maintain Calories = [TDEE]

Mild Weight Loss Calories = [TDEE] \* 0.92

Weight Loss Calories = [TDEE] \* 0.85

Extreme Weight Loss Calories = [TDEE] \* 0.70

👉 Purpose: Provides personalized health metrics → BMI, calorie needs, fitness goals (maintain, mild loss, weight loss, extreme loss).

**5. Dashboard Design**

Created multiple report pages:

1. Business Overview Page → Revenue, Expenses, Profit, Users Count (cards + KPIs).
2. Monthly Trend Page → Line chart of users/revenue/expenses with conditional colors.
3. Membership Tracker Page → Progress bar visuals for membership completion, active vs expired breakdown.
4. Health Calculator Page → Interactive slicers (Age, Weight, Gender, Activity) to calculate BMI, BMR, TDEE with color-coded results.
5. Member Profile Page → Drill-through details: personal info, membership tier, start/end dates, progress %.

6. Testing & Validation

* Cross-checked totals (Payments vs Revenue, Expenses vs Profit).
* Validated BMI/BMR/TDEE calculations against online standards.
* Verified slicers worked independently without breaking relationships.

7. Deployment

* Published to Power BI Service.
* Set Scheduled Refresh to keep data up to date.
* Shared with stakeholders (fitness center managers, trainers).

8. Business Value Delivered

* Saved manual effort → now fully automated analysis.
* Management → Quick insights into revenue, profit, and expenses.
* Trainers → Can track member fitness progress.
* Members → Get personalized calorie & BMI insights.
* Business → Better renewal tracking → improved retention.