```sql
-- VIEW TABLE TO UNDERSTAND THE DATA TYPES AND CHECK THE COLUMNS
-- DELEGATE EACH COLUMN TO THE SUITABLE DATA TYPE

SELECT *
FROM Reliance..Claims
Reliance..
ALTER TABLE Claims
ALTER COLUMN Claim_ID INT;

ALTER TABLE Claims
ALTER COLUMN Enrollee_ID INT;

ALTER TABLE Claims
ALTER COLUMN Provider_ID INT;

SELECT *
FROM Reliance..Enrollees

ALTER TABLE Enrollees
ALTER COLUMN Enrollee_ID INT;

ALTER TABLE Enrollees
ALTER COLUMN Plan_ID INT;

ALTER TABLE Enrollees
ALTER COLUMN Gender CHAR(1);

ALTER TABLE Enrollees
ALTER COLUMN Age INT;

SELECT *
FROM Reliance..Plans

ALTER TABLE Plans
ALTER COLUMN Plan_ID INT;

ALTER TABLE Plans
ALTER COLUMN Plan_Name VARCHAR(50);

ALTER TABLE Plans
ALTER COLUMN Plan_Price_Individual INT;

SELECT *
FROM Reliance..Providers

ALTER TABLE Providers
ALTER COLUMN Provider_ID INT;

ALTER TABLE Providers
ALTER COLUMN Cost INT;


--CLEANING THE DATA: EXCLUDING MISSING DATA AND REMOVING DUPLICATES
--Claims table
SELECT DISTINCT *
FROM Reliance..CLAIMS
WHERE Claim_ID is null
ORDER BY Provider_ID
```

```sql
SELECT DISTINCT *
FROM Reliance..CLAIMS
WHERE Enrollee_ID is null

SELECT DISTINCT *
FROM Reliance..CLAIMS
WHERE Claim_ID is null

-- Enrollees table
SELECT DISTINCT *
FROM Reliance..Enrollees
WHERE Enrollee_ID is null

SELECT DISTINCT *
FROM Reliance..Enrollees
WHERE Plan_ID is null

-- Ensuring there are only two values for Gender M or F
SELECT DISTINCT *
FROM Reliance..Enrollees
WHERE Gender !='M' AND Gender !='F'

SELECT DISTINCT *
FROM Reliance..Enrollees
WHERE Age is null

-- Plans Table
SELECT DISTINCT *
FROM Reliance..Plans
WHERE Plan_ID is null

SELECT DISTINCT *
FROM Reliance..Plans
WHERE Plan_Name is null

SELECT DISTINCT *
FROM Reliance..Plans
WHERE Plan_Price_Individual is null


-- TO FIND OUT IF THE COMPANY IS PROFITABLE, I would calculate the total revenue and
incurred cost

--To Find total Revenue, I would be joining Plans Table and Enrollees table on Plan ID
SELECT *
FROM Reliance..Plans

SELECT *
FROM Reliance..Enrollees

-- Create Table for the Join of Plans Table and Enrollees table

SELECT Plans.Plan_ID, Enrollee_ID, Gender, Age, Plan_Name, Plan_Price_Individual
INTO Enrolled_plans
FROM Reliance..Enrollees INNER JOIN Reliance..Plans
       ON Enrollees.Plan_ID = Plans.Plan_ID
       ORDER BY Enrollee_ID
```

```sql
-- CALCULATE REVENUE; by adding all the Plan price Individual based on the Enrollee ID
SELECT SUM(Plan_Price_Individual) AS Rev
INTO Revenue
FROM Reliance..Enrolled_plans


SELECT *
FROM Reliance..Revenue


--To Find total Revenue, I would be joining  Claims Table and Providers table on Provider
ID

-- Create Table for the Join of Claims Table and Providers table
SELECT *
From Reliance..Claims

SELECT *
From Reliance..Providers

SELECT Providers.Provider_ID, Enrollee_ID, Claim_ID, Cost
INTO Claimed_Plans
FROM Reliance..Providers INNER JOIN Reliance..Claims
       ON Providers.Provider_ID = Claims.Provider_ID
       ORDER BY Enrollee_ID ASC

-- CALCULATE EXPENSES; by finding the sum of all the cost
SELECT SUM(Cost) AS Expe
INTO Expenses
FROM Reliance..Claimed_Plans

SELECT *
FROM Expenses

-- CHECK IF COMPANY IS PROFITABLE; which equals Revenue - Expenses
-- Cross join both Revenue and Expenses Save as Finances and also Calculate Profit
SELECT Rev,Expe,(Rev-Expe) as Profit
INTO Finances
FROM Reliance..Revenue
CROSS JOIN Expenses

SELECT *
FROM Reliance..Finances

-- FIND MEDICAL LOSS RATIO; The medical loss ratio is the cost of claims paid divided by
total revenue from premiums
SELECT CAST(Rev AS DECIMAL(8,2)) AS Decimal_Rev, CAST(Expe AS DECIMAL(8,2)) AS
Decimal_Expe
INTO Medical
FROM Reliance..Finances


SELECT Decimal_Rev,Decimal_Expe,(Decimal_Expe/Decimal_Rev) AS Medical_Loss_Ratio
INTO Medical_Loss
FROM Reliance..Medical

SELECT *
```

```sql
FROM Reliance..Medical_Loss


-- QUESTION 2; Which segment of the population is the most (least) profitable (e.g. age,
gender)? Feel free to group the age any way you want.
--SEGMENTING BY GENDER INTO M(MALE) AND F(FEMALE)

SELECT *
FROM Reliance..Enrolled_Plans

SELECT *
FROM Reliance..Claimed_Plans

-- CALCULATING MALE SEGMENT PROFIT
-- Calculating Revenue for Male Segment
SELECT SUM(Plan_Price_Individual) AS Male_Revenue
FROM Reliance..Enrolled_Plans
WHERE Gender ='M'

-- Group cost by Enrolled_ID to create a table that has a Cost that corresponds to each
Enrollee_ID
SELECT DISTINCT Enrollee_ID, SUM(Cost) AS Cost_Per_Enrollee_ID
INTO Enrolled_ID_Cost
FROM Reliance..Claimed_Plans
GROUP BY Enrollee_ID
ORDER BY Enrollee_ID,Cost_Per_Enrollee_ID ASC

SELECT *
FROM Reliance..Enrolled_ID_Cost

-- Join Enrolled_ID_Cost table with Enrolled_Plans on Enrolle_ID to find the Cost of Each
Segment
SELECT Enrolled_plans.Enrollee_ID, Gender, Age,
Cost_Per_Enrollee_ID,Plan_ID,Plan_Name,Plan_Price_Individual
INTO Enrolled_Cost
FROM Reliance..Enrolled_ID_Cost INNER JOIN Reliance..Enrolled_Plans
       ON Enrolled_ID_Cost.Enrollee_ID = Enrolled_plans.Enrollee_ID
       ORDER BY Enrollee_ID ASC


SELECT *
FROM Reliance..Enrolled_Cost


-- Calculating Cost,Revenue and Profit for Male Segment
SELECT SUM(Cost_Per_Enrollee_ID) AS Male_Cost, SUM(Plan_Price_Individual) AS
Male_Revenue, (SUM(Plan_Price_Individual)-SUM(Cost_Per_Enrollee_ID)) As
Male_Segment_Profit
INTO Male_Segment
FROM Reliance..Enrolled_Cost
WHERE Gender ='M'


SELECT *
FROM Reliance..Male_Segment

-- Calculating Cost,Revenue and Profit for Female Segment
```

```sql
SELECT SUM(Cost_Per_Enrollee_ID) AS Female_Cost, SUM(Plan_Price_Individual) AS
Female_Revenue, (SUM(Plan_Price_Individual)-SUM(Cost_Per_Enrollee_ID)) As
Female_Segment_Profit
INTO Female_Segment
FROM Reliance..Enrolled_Cost
WHERE Gender ='F'

SELECT *
FROM Reliance..Female_Segment

-- Cross join both Male_Segment and Female_Segment Save as Segment_Gender and Difference
in Profit
SELECT Male_Segment_Profit,Female_Segment_Profit,(Male_Segment_Profit-
Female_Segment_Profit) as Diff_Segment_Gender
INTO Gender_Segment_Profit
FROM Reliance..Male_Segment
CROSS JOIN Reliance..Female_Segment

SELECT *
FROM Reliance..Gender_Segment_Profit

-- The Table Segment_Gender Shows Male Segment is the most profitable


-- CALCULATING MOST PROFITABLE AGE SEGMENTS BY GROUPING THEIR AGES INTO YOUNG,
MIDDLE_AGED AND OLD

-- STATISTICS OF THE AGES
 SELECT DISTINCT MIN(Age)OVER() AS Min_Age,     --Calculating the Maximum and Minimum age
 (PERCENTILE_DISC(0.25) WITHIN GROUP (ORDER BY Age)OVER()) AS Q1,    --Calculating the
lower quartile age
 (PERCENTILE_DISC(0.5) WITHIN GROUP (ORDER BY Age)OVER()) AS MEDIAN, --Calculating the
Median age
 (PERCENTILE_DISC(0.75) WITHIN GROUP (ORDER BY Age)OVER()) AS Q3,    --Calculating the
Upper quartile age
 MAX(Age)OVER() AS Max_Age,       --Calculating the Maximum age
 (PERCENTILE_DISC(0.75) WITHIN GROUP (ORDER BY Age)OVER()-PERCENTILE_DISC(0.25) WITHIN
GROUP (ORDER BY Age)OVER()) AS IQR  --Calculating the Inter quartile range age

 INTO Age_Stats
 FROM Reliance..Enrolled_Cost


 SELECT *
 FROM Reliance..Age_Stats

-- SET YOUNG <=30, Middle_Age >30 and <= 60, Old_Age>60
-- Calculate Young Segment Profit
SELECT SUM(Cost_Per_Enrollee_ID) AS Young_Cost,
SUM(Plan_Price_Individual) AS Young_Revenue,
(SUM(Plan_Price_Individual)-SUM(Cost_Per_Enrollee_ID)) As Young_Segment_Profit
INTO Young_Segment
FROM Reliance..Enrolled_Cost
WHERE Age <=30

SELECT *
FROM Reliance..Young_Segment
```

```sql
-- Calculate Middle_Aged Segment Profit
SELECT SUM(Cost_Per_Enrollee_ID) AS Middle_Age_Cost,
SUM(Plan_Price_Individual) AS Middle_Age_Revenue,
(SUM(Plan_Price_Individual)-SUM(Cost_Per_Enrollee_ID)) As Middle_Age_Segment_Profit
INTO Middle_Age_Segment
FROM Reliance..Enrolled_Cost
WHERE Age<= 60 AND Age> 30

SELECT *
FROM Reliance..Middle_Age_Segment

-- Calculate Old_Age Profit
SELECT SUM(Cost_Per_Enrollee_ID) AS Old_Age_Cost,
SUM(Plan_Price_Individual) AS Old_Age_Revenue,
(SUM(Plan_Price_Individual)-SUM(Cost_Per_Enrollee_ID)) As Old_Age_Segment_Profit
INTO Old_Age_Segment
FROM Reliance..Enrolled_Cost
WHERE Age> 60


 --CREATE TABLE FOR PROFIT
SELECT Young_Segment_Profit, Middle_Age_Segment_Profit, Old_Age_Segment_Profit
INTO Age_Segment_Profit
FROM Reliance..Young_Segment, Reliance..Middle_Age_Segment, Reliance..Old_Age_Segment

SELECT *
FROM Reliance..Age_Segment_Profit



-- QUESTION 3; Which plan is the most profitable?
SELECT *
FROM Reliance..Enrolled_Cost

-- Calculate Plan Profit

SELECT SUM(Cost_Per_Enrollee_ID) AS Bronze_Cost, SUM(Plan_Price_Individual) AS
Bronze_Revenue, (SUM(Plan_Price_Individual)-SUM(Cost_Per_Enrollee_ID)) As Bronze_Profit
INTO Bronze_Plan
FROM Reliance..Enrolled_Cost
WHERE Plan_Name = 'Bronze'


SELECT SUM(Cost_Per_Enrollee_ID) AS Silver_Cost, SUM(Plan_Price_Individual) AS
Silver_Revenue, (SUM(Plan_Price_Individual)-SUM(Cost_Per_Enrollee_ID)) As Silver_Profit
INTO Silver_Plan
FROM Reliance..Enrolled_Cost
WHERE Plan_Name = 'Silver'


SELECT SUM(Cost_Per_Enrollee_ID) AS Gold_Cost, SUM(Plan_Price_Individual) AS
Gold_Revenue, (SUM(Plan_Price_Individual)-SUM(Cost_Per_Enrollee_ID)) As Gold_Profit
INTO Gold_Plan
FROM Reliance..Enrolled_Cost
WHERE Plan_Name = 'Gold'
```

```sql
SELECT SUM(Cost_Per_Enrollee_ID) AS Gold_Cost, SUM(Plan_Price_Individual) AS
Gold_Revenue, (SUM(Plan_Price_Individual)-SUM(Cost_Per_Enrollee_ID)) As Platinum_Profit
INTO Platinum_Plan
FROM Reliance..Enrolled_Cost
WHERE Plan_Name = 'Platinum'


SELECT Bronze_Profit, Silver_Profit, Gold_Profit, Platinum_Profit
INTO Plan_Profit
FROM Reliance..Bronze_Plan, Reliance..Silver_Plan, Reliance..Gold_Plan,
Reliance..Platinum_Plan

SELECT*
FROM Reliance..Plan_Profit


-- QUESTION 4 Is there any correlation between plan selection and segment of the
population
--i.e do certain groups have a higher affinity to a given plan). For example: old women
prefer gold plans.

--EXPORT TABLES
```