

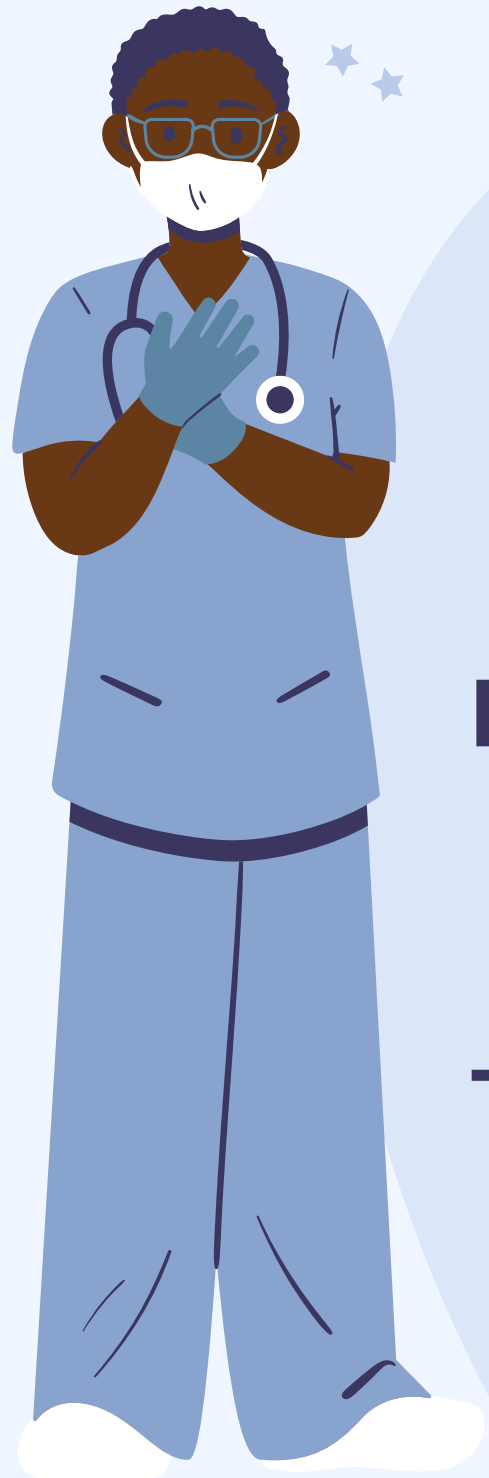
Lung Cancer Project



INTRODUCTION

The project focuses on analyzing a dataset containing patient data related to lung cancer symptoms, demographics, and lifestyle factors. The primary aim is to explore the relationships between various factors such as smoking, alcohol consumption, chronic diseases, and symptoms like wheezing, chest pain, and fatigue. Using PostgreSQL, the project involves data cleaning, exploration, and answering targeted analytical questions to uncover trends and insights.

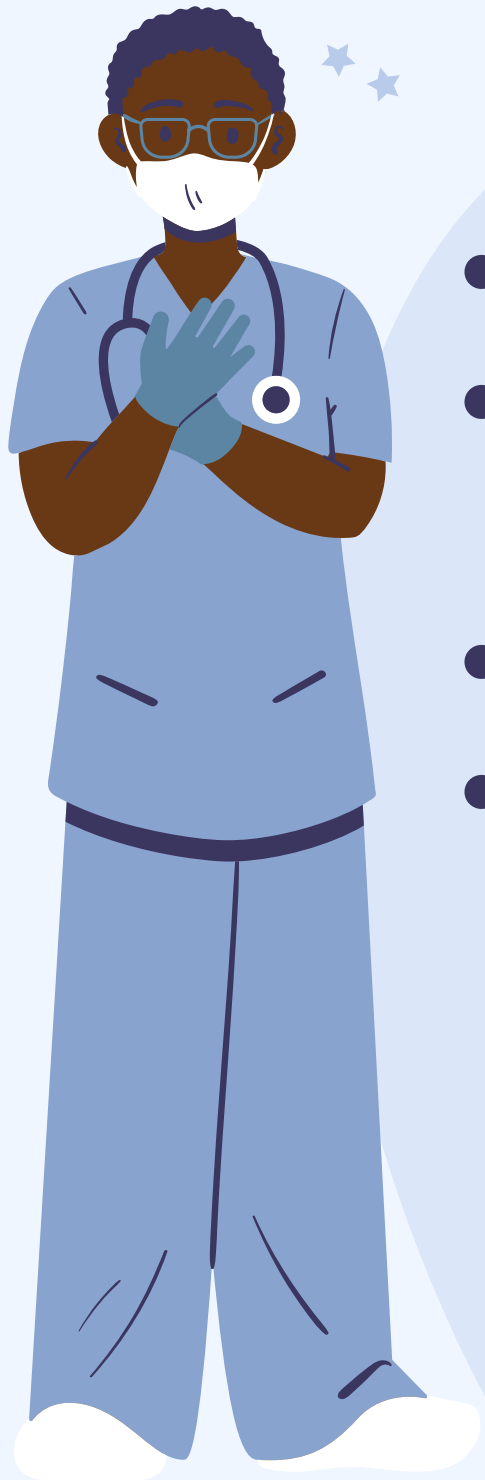
This project focuses on converting categorical variables like '1' and '2' into a 'Yes/No' format for better readability, cleaning the data for accuracy, and exploring key trends.



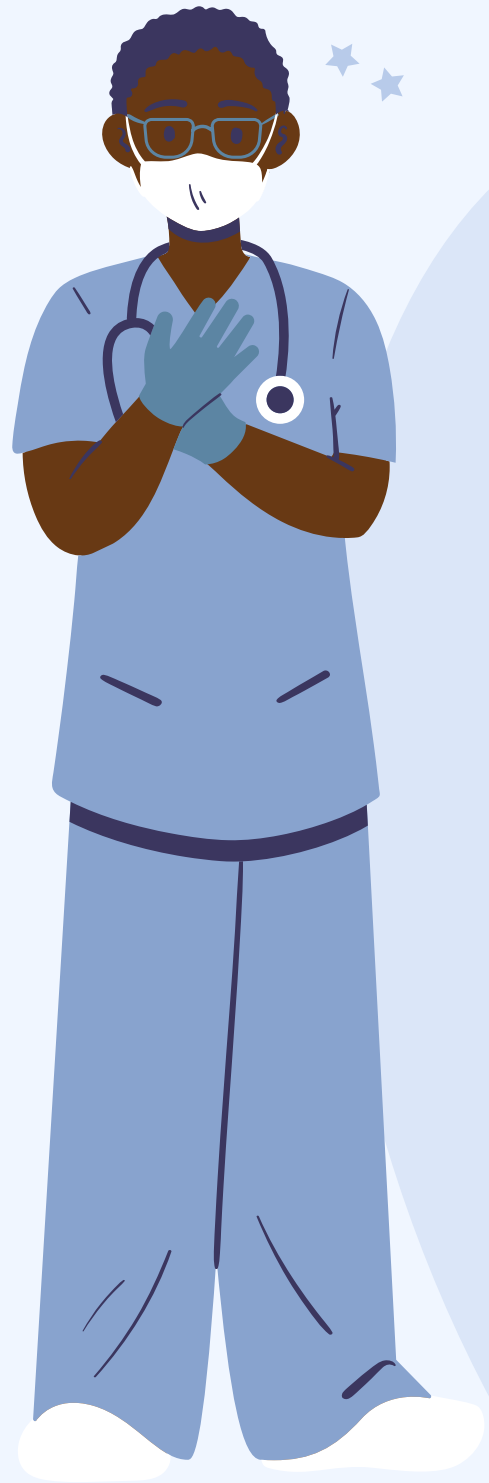
INTRODUCTION

The primary objectives include:

- Cleaning and transforming the dataset to ensure data integrity.
- Exploring patient characteristics such as age, gender, and smoking habits.
- Analyzing the relationship between symptoms and diagnosis.
- Developing actionable insights to support preventive measures and resource allocation.



SQL LUNG CANCER PROJECT



```
--Sql lung cancer project  
CREATE DATABASE lung_cancer_project;
```




CREATE TABLE

```
--Create Table
create table lung_cancer (
  ID int primary key ,
  GENDER varchar (3),
  AGE int ,
  SMOKING_STATUS varchar (3),
  YELLOW_FINGERS varchar (3),
  ANXIETY varchar (3),
  PEER_PRESSURE      varchar (3),
  CHRONIC_DISEASE varchar (3),
  FATIGUE varchar (3),
  ALLERGY varchar (3),
  WHEEZING varchar (3),
  ALCOHOL_CONSUMING varchar (3),
  COUGHING varchar (3),
  SHORTNESS_OF_BREATH varchar (3),
  SWALLOWING_DIFFICULTY varchar (3),
  CHEST_PAIN      varchar (3),
  LUNG_CANCER varchar (3) );
```



TABLE

	id [PK] integer	gender character varying	age integer 	smoking_status character varying	yellow_fingers character varying	anxiety character varying	peer_pressure character varying	chronic_disease character varying	fatigue character varying	allergy character varying	wheezing character varying	alcohol_consumi character varying	coughing character varying	shortness_of character varying	swallowing_d character varying	chest_pain character varying	lung_cancer character varying
1	1	M	65	Yes	Yes	Yes	No	No	Yes	No	No	No	No	No	No	Yes	No
2	2	F	55	Yes	No	No	Yes	No	No	No	No	Yes	Yes	Yes	No	No	No
3	3	F	78	No	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes	Yes
4	4	M	60	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No	No	Yes
5	5	F	80	Yes	Yes	No	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	No	No
6	6	F	58	Yes	Yes	Yes	No	Yes	No	No	Yes	No	No	Yes	Yes	No	Yes
7	7	F	70	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	Yes	Yes
8	8	F	74	No	No	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	No
9	9	M	77	Yes	No	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
10	10	F	67	No	No	No	No	No	No	No	Yes	No	Yes	No	Yes	Yes	No
11	11	F	35	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No	No	No	No	No
12	12	F	60	No	No	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No	Yes	Yes
13	13	M	79	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Yes	No	No	Yes
14	14	M	70	Yes	No	No	No	No	No	No	No	Yes	No	No	Yes	Yes	No
15	15	F	67	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	Yes	Yes	No
16	16	F	39	No	No	Yes	Yes	No	No	No	No	Yes	No	No	No	Yes	No
17	17	M	62	Yes	Yes	No	No	Yes	Yes	No	No	Yes	No	Yes	Yes	No	Yes
18	18	F	64	No	No	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	No	Yes	No
19	19	M	66	No	Yes	Yes	Yes	No	Yes	No	Yes	No	No	Yes	Yes	Yes	No
20	20	M	79	No	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	No	No	No
21	21	F	76	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
22	22	M	65	No	Yes	No	Yes	No	No	No	No	Yes	No	No	Yes	No	No
23	23	F	48	No	Yes	No	No	No	No	Yes	Yes	No	Yes	No	Yes	No	No
24	24	M	33	Yes	Yes	No	No	No	No	Yes	Yes	Yes	No	No	No	No	No

DATA CLEANING

```
--Data Cleaning
-- In excel i generated a column name ID for making it primary key because there is no any primary key.
-- Convert Numerical Encodings to Descriptive Labels Change 1 to "Yes" and 2 to "No" for relevant columns.
-- Standardize Column Names: Use consistent naming conventions (smoking_status instead of SMOKING).
-- Remove Duplicates: Identify and remove duplicate rows to ensure data uniqueness. 2 DUPLICATES WERE FOUND AND DELETE. REMAINS 2998 ROWS.
-- Delete Null Values There's no any null values to Delete.
```



CHECK NULL VALUES

```
8  -- Check Null Values __
9  SELECT * FROM LUNG_CANCER
0  WHERE ID IS NULL OR
1  GENDER IS NULL OR
2  AGE IS NULL OR
3  SMOKING_STATUS IS NULL OR
4  YELLOW_FINGERS IS NULL OR
5  ANXIETY IS NULL OR
6  PEER_PRESSURE IS NULL OR
7  CHRONIC_DISEASE IS NULL OR
8  FATIGUE IS NULL OR
9  ALLERGY IS NULL OR
0  WHEEZING IS NULL OR
1  ALCOHOL_CONSUMING IS NULL OR
2  COUGHING IS NULL OR
3  SHORTNESS_OF_BREATH IS NULL OR
4  SWALLOWING_DIFFICULTY IS NULL OR
5  CHEST_PAIN IS NULL OR
6  LUNG_CANCER IS NULL ;
```


Data Exploration

```
-- Data Exploration
```

```
-- How many Data we have?
```

```
SELECT COUNT(*) as total_case FROM lung_cancer;
```

total_case
2998

```
-- How many unique age we have ?
```

```
SELECT COUNT(DISTINCT age) as total_unique_age FROM lung_cancer;
```

total_unique_age
51

Data Exploration

```
--Identify extreme values for specific groups like oldest_smoker and Youngest_smoker.  
SELECT  
    MAX(CASE WHEN smoking_status = 'Yes' THEN age ELSE NULL END) AS oldest_smoker,  
    MIN(CASE WHEN smoking_status = 'Yes' THEN age ELSE NULL END) AS youngest_smoker  
FROM lung_cancer;
```

oldest_smoker integer	youngest_smoker integer
80	30

DATA ANALYSIS & BUSINESS KEY PROBLEMS & ANSWERS

-- Data Analysis & Business Key Problems & Answers

-- My Analysis & Findings

-- Q.1 How many patients are present in the dataset?

-- Q.2 What is the gender distribution of the patients?

-- Q.3 What is the average age of patients diagnosed with lung cancer?

-- Q.4 How many patients have chronic diseases?

-- Q.5 How many smokers report chest pain as a symptom?

-- Intermediate Questions:

-- Q.6 Which age group has the highest number of lung cancer cases?

-- Q.7 What percentage of patients exhibit symptoms like wheezing or fatigue?

-- Q.8 How does the prevalence of symptoms differ between smokers and non-smokers?

-- Q.9 What is the relationship between alcohol consumption and shortness of breath?

-- Q.10 How does peer pressure correlate with smoking habits?

-- Advanced Questions:

-- Q.11 Which symptoms most frequently occur together among diagnosed patients?

-- Q.12 How does the combination of chronic disease and smoking affect the occurrence of wheezing?

-- Q.13 What is the impact of gender on the severity and number of symptoms reported?

-- Q.14 Can you predict the likelihood of chest pain in patients with chronic diseases and smoking habits?

-- Q.15 Which demographic (age and gender) has the highest risk factors for developing lung cancer based on the dataset?

-- Q16. who smoke and who don't smoke?

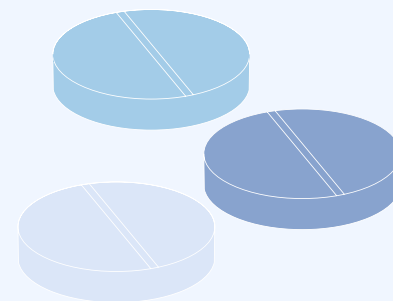
Q.1 HOW MANY PATIENTS ARE PRESENT IN THE DATASET?



```
--Q.1 How many patients are present in the dataset?
```

```
select count(*) as patients  
from lung_cancer;
```

patients	
bigint	
2998	





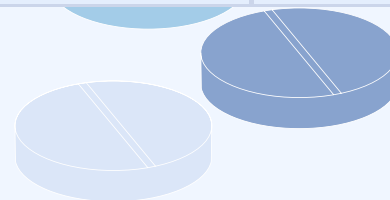
Q.2 WHAT IS THE GENDER DISTRIBUTION OF THE PATIENTS?



--Q.2 What is the gender distribution of the patients?

```
select gender, count(*) from lung_cancer  
group by gender;
```

gender character varying (1) 	count bigint 
M	1512
F	1486



Q.3 WHAT IS THE AVERAGE AGE OF PATIENTS DIAGNOSED WITH LUNG CANCER?



```
--Q.3 What is the average age of patients diagnosed with lung cancer?
```

```
SELECT  
    round(avg(age),2) AS average_age  
FROM  
    lung_cancer  
WHERE  
    LUNG_CANCER = 'Yes';
```

average_age	
numeric	

54.65

Q.4 HOW MANY PATIENTS HAVE CHRONIC DISEASES?

--Q.4 How many patients have chronic diseases?

```
SELECT
    COUNT(*) AS chronic_disease_count
FROM
    lung_cancer
WHERE
    CHRONIC_DISEASE = 'Yes';
```

chronic_disease_count	bigint	
		1517



Q.5 How many smokers report chest pain as a symptom?

```
--Q.5 How many smokers report chest pain as a symptom?
```

```
SELECT
    COUNT(*) AS smokers_with_chest_pain
FROM
    lung_cancer
WHERE
    SMOKING_status = 'Yes' AND CHEST_PAIN = 'Yes';
```

smokers_with_chest_pain	🔒
bigint	
	742

Q.6 Which age group has the highest number of lung cancer cases?

--Q.6 Which age group has the highest number of lung cancer cases?

```
SELECT
CASE
  WHEN AGE BETWEEN 0 AND 30 THEN '0-30'
  WHEN AGE BETWEEN 31 AND 50 THEN '31-50'
  WHEN AGE BETWEEN 51 AND 70 THEN '51-70'
  ELSE '71+'
END AS age_group,
COUNT(*) AS lung_cancer_cases
FROM
  lung_cancer
WHERE
  LUNG_CANCER = 'Yes'
GROUP BY
  age_group
ORDER BY
  lung_cancer_cases DESC;
```

age_group	lung_cancer_cases
text	bigint
31-50	627
51-70	582
71+	292
0-30	16

Q.7 What percentage of patients exhibit symptoms like wheezing or fatigue?

--Q.7 What percentage of patients exhibit symptoms like wheezing or fatigue?

```
SELECT
  ROUND(
    (COUNT(*) * 100.0) / (SELECT COUNT(*) FROM lung_cancer), 2
  ) AS symptom_percentage
FROM
  lung_cancer
WHERE
  WHEEZING = 'Yes' OR FATIGUE = 'Yes';
```

symptom_percentage	🔒
numeric	
75.28	

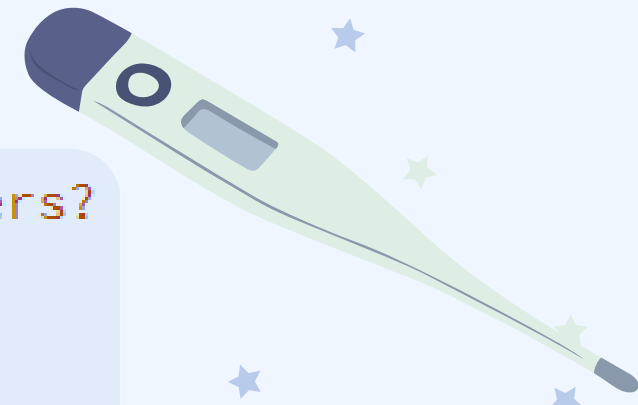
Q.8 How does the prevalence of symptoms differ between smokers and non-smokers?



--Q.8 How does the prevalence of symptoms differ between smokers and non-smokers?

```
SELECT
    SMOKING_status,
    SUM(CASE WHEN WHEEZING = 'Yes' THEN 1 ELSE 0 END) AS wheezing_count,
    SUM(CASE WHEN FATIGUE = 'Yes' THEN 1 ELSE 0 END) AS fatigue_count,
    SUM(CASE WHEN CHEST_PAIN = 'Yes' THEN 1 ELSE 0 END) AS chest_pain_count,
    COUNT(*) AS total_patients
FROM
    lung_cancer
GROUP BY
    SMOKING_status;
```

smoking_status character varying (3) 🔒	wheezing_count bigint 🔒	fatigue_count bigint 🔒	chest_pain_count bigint 🔒	total_patients bigint 🔒
No	740	737	762	1473
Yes	767	793	742	1525



You can further modify this query to calculate percentages for easier comparison:

This will output the percentage prevalence of each symptom for smokers and non-smokers.



```
--You can further modify this query to calculate percentages for easier comparison:
--This will output the percentage prevalence of each symptom for smokers and non-smokers.

SELECT
  SMOKING_status,
  ROUND(SUM(CASE WHEN WHEEZING = 'Yes' THEN 1 ELSE 0 END) * 100.0 / COUNT(*), 2) AS wheezing_percentage,
  ROUND(SUM(CASE WHEN FATIGUE = 'Yes' THEN 1 ELSE 0 END) * 100.0 / COUNT(*), 2) AS fatigue_percentage,
  ROUND(SUM(CASE WHEN CHEST_PAIN = 'Yes' THEN 1 ELSE 0 END) * 100.0 / COUNT(*), 2) AS chest_pain_percentage
FROM
  lung_cancer
GROUP BY
  SMOKING_status;
```





	smoking_status character varying (3)	wheezing_percentage numeric	fatigue_percentage numeric	chest_pain_percentage numeric
1	No	50.24	50.03	51.73
2	Yes	50.30	52.00	48.66



Q.9 What is the relationship between alcohol consumption and shortness of breath?

--Q.9 What is the relationship between alcohol consumption and shortness of breath?





```
SELECT
  ALCOHOL_CONSUMING,
  SUM(CASE WHEN SHORTNESS_OF_BREATH = 'Yes' THEN 1 ELSE 0 END) AS shortness_of_breath_count,
  COUNT(*) AS total_patients,
  ROUND(SUM(CASE WHEN SHORTNESS_OF_BREATH = 'Yes' THEN 1 ELSE 0 END) * 100.0 / COUNT(*), 2) AS percentage_with_breath_issues
FROM
  lung_cancer
GROUP BY
  ALCOHOL_CONSUMING;
```

	alcohol_consuming character varying (3) 	shortness_of_breath_count bigint 	total_patients bigint 	percentage_with_breath_issues numeric 
1	No	754	1473	51.19
2	Yes	782	1525	51.28

Q.10 How does peer pressure correlate with smoking habits?

--Q.10 How does peer pressure correlate with smoking habits?





```
SELECT
  PEER_PRESSURE,
  SUM(CASE WHEN SMOKING_status = 'Yes' THEN 1 ELSE 0 END) AS smokers_count,
  COUNT(*) AS total_patients,
  ROUND(SUM(CASE WHEN SMOKING_status = 'Yes' THEN 1 ELSE 0 END) * 100.0 / COUNT(*), 2) AS percentage_smokers
FROM
  lung_cancer
GROUP BY
  PEER_PRESSURE;
```

	peer_pressure character varying (3) 	smokers_count bigint 	total_patients bigint 	percentage_smokers numeric 
1	No	784	1495	52.44
2	Yes	741	1503	49.30

Q.11 Which symptoms most frequently occur together among diagnosed patients?

```
--Q.11 Which symptoms most frequently occur together among diagnosed patients?

SELECT
  SUM(CASE WHEN WHEEZING = 'Yes' AND FATIGUE = 'Yes' THEN 1 ELSE 0 END) AS wheezing_and_fatigue,
  SUM(CASE WHEN COUGHING = 'Yes' AND SHORTNESS_OF_BREATH = 'Yes' THEN 1 ELSE 0 END) AS coughing_and_shortness_of_breath,
  SUM(CASE WHEN YELLOW_FINGERS = 'Yes' AND ANXIETY = 'Yes' THEN 1 ELSE 0 END) AS yellow_fingers_and_anxiety,
  SUM(CASE WHEN CHEST_PAIN = 'Yes' AND SWALLOWING_DIFFICULTY = 'Yes' THEN 1 ELSE 0 END) AS chest_pain_and_swallowing_difficulty
FROM
  lung_cancer
WHERE
  LUNG_CANCER = 'Yes';
```

	peer_pressure character varying (3) 	smokers_count bigint 	total_patients bigint 	percentage_smokers numeric 
1	No	784	1495	52.44
2	Yes	741	1503	49.30

Q.12 How does the combination of chronic disease and smoking affect the occurrence of wheezing?

-- Q.12 How does the combination of chronic disease and smoking affect the occurrence of wheezing?

```
SELECT
  COUNT(*) AS total_patients,
  SUM(CASE WHEN CHRONIC_DISEASE = 'Yes' AND SMOKING_status = 'Yes' AND WHEEZING = 'Yes' THEN 1 ELSE 0 END) AS both_chronic_and_smoking_with_wheezing,
  SUM(CASE WHEN CHRONIC_DISEASE = 'Yes' AND SMOKING_status = 'No' AND WHEEZING = 'Yes' THEN 1 ELSE 0 END) AS chronic_only_with_wheezing,
  SUM(CASE WHEN CHRONIC_DISEASE = 'No' AND SMOKING_status = 'Yes' AND WHEEZING = 'Yes' THEN 1 ELSE 0 END) AS smoking_only_with_wheezing,
  SUM(CASE WHEN CHRONIC_DISEASE = 'No' AND SMOKING_status = 'No' AND WHEEZING = 'Yes' THEN 1 ELSE 0 END) AS neither_with_wheezing
FROM
  lung_cancer;
```

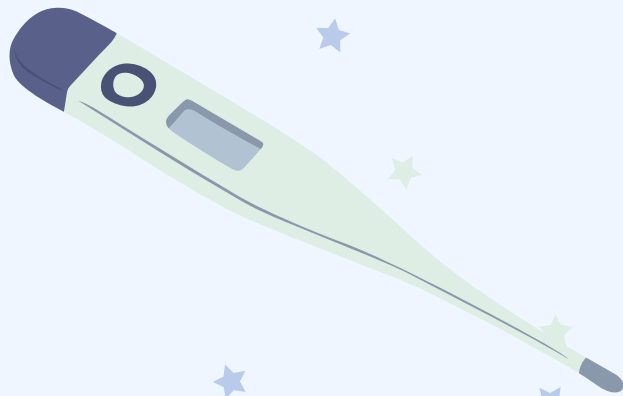
	total_patients bigint	both_chronic_and_smoking_with_wheezing bigint	chronic_only_with_wheezing bigint	smoking_only_with_wheezing bigint	neither_with_wheezing bigint
1	2998	394	398	373	342

Q.13 What is the impact of gender on the severity and number of symptoms reported?

-- Q.13 What is the impact of gender on the severity and number of symptoms reported?

```
SELECT
  GENDER,
  COUNT(*) AS total_patients,
  SUM(
    CASE WHEN WHEEZING = 'Yes' THEN 1 ELSE 0 END +
    CASE WHEN FATIGUE = 'Yes' THEN 1 ELSE 0 END +
    CASE WHEN CHEST_PAIN = 'Yes' THEN 1 ELSE 0 END +
    CASE WHEN SHORTNESS_OF_BREATH = 'Yes' THEN 1 ELSE 0 END +
    CASE WHEN COUGHING = 'Yes' THEN 1 ELSE 0 END
  ) AS total_symptoms_reported,
  AVG(
    CASE WHEN WHEEZING = 'Yes' THEN 1 ELSE 0 END +
    CASE WHEN FATIGUE = 'Yes' THEN 1 ELSE 0 END +
    CASE WHEN CHEST_PAIN = 'Yes' THEN 1 ELSE 0 END +
    CASE WHEN SHORTNESS_OF_BREATH = 'Yes' THEN 1 ELSE 0 END +
    CASE WHEN COUGHING = 'Yes' THEN 1 ELSE 0 END
  ) AS avg_symptoms_per_patient
FROM
  lung_cancer
GROUP BY
  GENDER;
```

gender	total_patients	total_symptoms_reported	avg_symptoms_per_patient
character varying (1)	bigint	bigint	numeric
M	1512	3808	2.52
F	1486	3737	2.51



Q.14 Can you predict the likelihood of chest pain in patients with chronic diseases and smoking habits?



```
-- Q.14 Can you predict the likelihood of chest pain in patients with chronic diseases and smoking habits?

SELECT
  COUNT(*) AS total_patients_with_chronic_disease_and_smoking,
  SUM(CASE WHEN CHEST_PAIN = 'Yes' THEN 1 ELSE 0 END) AS patients_with_chest_pain,
  ROUND(
    CAST(SUM(CASE WHEN CHEST_PAIN = 'Yes' THEN 1 ELSE 0 END) AS NUMERIC) /
    NULLIF(COUNT(*), 0) * 100, 2
  ) AS likelihood_of_chest_pain_percentage
FROM
  lung_cancer
WHERE
  CHRONIC_DISEASE = 'Yes' AND SMOKING_status = 'Yes';
```

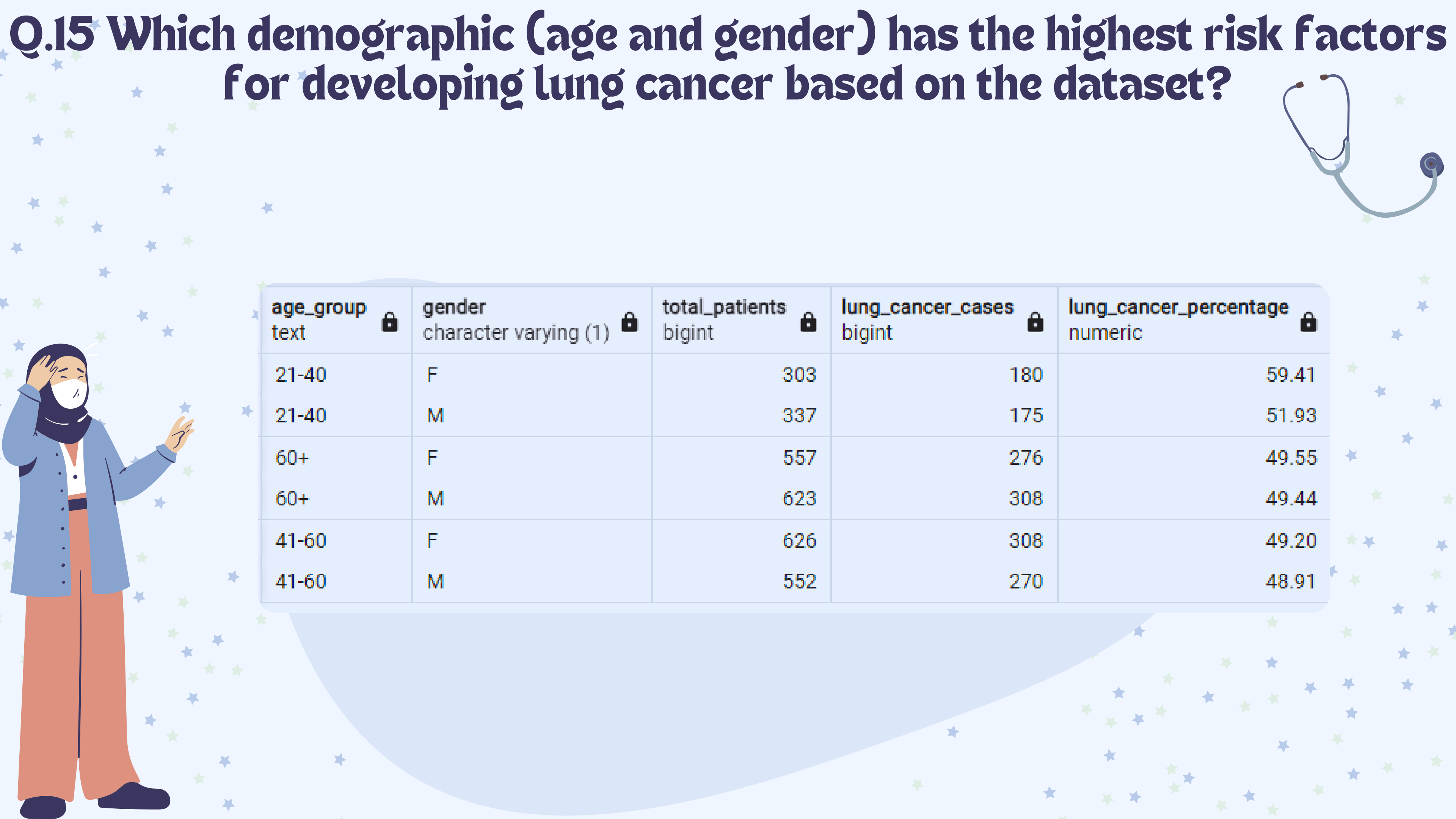
total_patients_with_chronic_disease_and_smoking	patients_with_chest_pain	likelihood_of_chest_pain_percentage
bigint	bigint	numeric
761	384	50.46

Q.15 Which demographic (age and gender) has the highest risk factors for developing lung cancer based on the dataset?

```
-- Q.15 Which demographic (age and gender) has the highest risk factors for developing lung cancer based on the dataset?

SELECT
  AGE_GROUP,
  GENDER,
  COUNT(*) AS total_patients,
  SUM(CASE WHEN LUNG_CANCER = 'Yes' THEN 1 ELSE 0 END) AS lung_cancer_cases,
  ROUND(
    CAST(SUM(CASE WHEN LUNG_CANCER = 'Yes' THEN 1 ELSE 0 END) AS NUMERIC) /
    NULLIF(COUNT(*), 0) * 100, 2
  ) AS lung_cancer_percentage
FROM
  (
    SELECT
      *,
      CASE
        WHEN AGE BETWEEN 0 AND 20 THEN '0-20'
        WHEN AGE BETWEEN 21 AND 40 THEN '21-40'
        WHEN AGE BETWEEN 41 AND 60 THEN '41-60'
        ELSE '60+'
      END AS AGE_GROUP
    FROM
      lung_cancer
  ) AS age_grouped_data
GROUP BY
  AGE_GROUP, GENDER
ORDER BY
  lung_cancer_percentage DESC;
```





Q.15 Which demographic (age and gender) has the highest risk factors for developing lung cancer based on the dataset?

age_group text	gender character varying (1)	total_patients bigint	lung_cancer_cases bigint	lung_cancer_percentage numeric
21-40	F	303	180	59.41
21-40	M	337	175	51.93
60+	F	557	276	49.55
60+	M	623	308	49.44
41-60	F	626	308	49.20
41-60	M	552	270	48.91

Q16. who smoke and who don't smoke?



```
-- Q16. who smoke and who don't smoke?
```

```
SELECT
    smoking_status,
    COUNT(*) AS patient_count
FROM lung_cancer
GROUP BY smoking_status;
```

```
-- same query with windows function.
```

```
WITH smoker_data AS (
    SELECT smoking_status, COUNT(*) AS count
    FROM lung_cancer
    GROUP BY smoking_status
)
SELECT * FROM smoker_data;
```



Q16. who smoke and who don't smoke?



smoking_status character varying (3) 🔒	count bigint 🔒
No	1473
Yes	1525





Conclusion



This project provided a comprehensive analysis of factors contributing to lung cancer risk using SQL. Key insights highlighted the importance of demographics, lifestyle habits, and symptom patterns in identifying high-risk groups. By employing structured queries and advanced techniques, the analysis demonstrated how data-driven approaches can inform healthcare decisions and preventive measures.

The SQL analysis of the Lung Cancer dataset demonstrates the power of structured querying for deriving actionable insights from raw data. The findings emphasize the critical role of lifestyle and environmental factors in lung cancer prevalence, highlighting areas for targeted interventions such as anti-smoking campaigns and workplace safety measures.

This project showcases the importance of data cleaning and transformation in enhancing the readability and utility of datasets. By answering questions ranging from basic demographic patterns to complex risk factor correlations, the project underscores the potential of SQL in medical data analysis, paving the way for more informed healthcare strategies.

PREVENTION METHODS

- **LIFESTYLE SOLUTIONS**
- **MEDICAL SOLUTIONS**
- **SOCIETAL SOLUTIONS**
- **PSYCHOLOGICAL SOLUTIONS**
- **ADVANCED MEDICAL INTERVENTIONS
(FOR DIAGNOSED PATIENTS)**

PREVENTION METHODS

1. Lifestyle Solutions

Quit Smoking:

- Smoking is the leading cause of lung cancer. Quitting reduces the risk significantly and improves respiratory health.

- Use nicotine replacement therapy, counseling, or smoking cessation programs for support.

Reduce Alcohol Consumption:

- Excessive alcohol consumption can exacerbate symptoms like shortness of breath. Limiting intake helps reduce risks.

Healthy Diet:

- A diet rich in fruits, vegetables, and whole grains supports lung and immune health.
- Avoid processed and high-fat foods, which can contribute to chronic diseases.

Regular Exercise:

- Moderate physical activity improves lung function, reduces fatigue, and strengthens the immune system.

Avoid Environmental Pollutants:

- Minimize exposure to secondhand smoke, radon gas, and air pollution by using air purifiers and ensuring proper ventilation at home and work.

PREVENTION METHODS

2. Medical Solutions

Regular Health Screenings:

- **Early detection is key to managing lung cancer effectively. Individuals at high risk (e.g., smokers over 50) should undergo regular screenings such as low-dose CT scans.**

Vaccinations:

- **Get vaccines like the flu shot and pneumonia vaccine to prevent respiratory infections that can worsen symptoms.**

Prompt Medical Consultation:

- **Seek medical attention for persistent symptoms like coughing, wheezing, or chest pain.**

Manage Comorbidities:

- **Control chronic conditions like diabetes, COPD, and hypertension, which may worsen lung health.**

PREVENTION METHODS

- **3. Societal Solutions**
- **Public Awareness Campaigns:**
- **Educating communities about the risks of smoking, secondhand smoke, and environmental factors can help prevent lung cancer.**
- **Workplace Safety Regulations:**
- **Employers should provide protective gear and ensure minimal exposure to harmful substances like asbestos or industrial fumes.**
- **Community Support Programs:**
- **Provide accessible smoking cessation clinics, counseling services, and support groups.**

PREVENTION METHODS

-
-
- **4. Psychological Solutions**
Manage Stress and Anxiety:
Chronic stress and anxiety can weaken the immune system. Practices like mindfulness, yoga, or therapy can improve mental health.
- **Peer Pressure Resistance:**
- **Educate young people on resisting peer pressure related to smoking or alcohol consumption.**

PREVENTION METHODS

- **5. Advanced Medical Interventions (for Diagnosed Patients)**
- **Symptom Management:**
- **Medications for coughing, pain, or shortness of breath can alleviate discomfort.**
- **Pulmonary rehabilitation programs help improve lung capacity.**
- **Innovative Treatments:**
- **Immunotherapy and targeted therapies are effective for certain types of lung cancer.**
- **Oxygen Therapy:**
- **For severe cases, oxygen therapy can help alleviate breathlessness.**

The background is a light blue gradient with scattered small blue and green stars. In the top left, there are three blue pills. In the top right, there is a green syringe and a blue IV drip bag. In the center, there are two medical professionals: a woman on the left in blue scrubs holding a syringe, and a man on the right in a white lab coat holding a clipboard. The text "Thank you for your attention" is written in a large, bold, dark blue serif font, flanked by two small blue starburst icons.

Thank you for your attention

LINKEDIN PROFILE