Youngsters Migration Database

Group ID - 44

Student ID and name:

Mohsin Pathan: 202412070
Hem Shah: 202412094

Date of submission: 13th November 2024

Table of Contents

Chapter 1: Software Requirements Specification (SRS)

1.1 Problem Description

Migration is the process of moving from one region, place or locality to another in search of better opportunities to settle. Migration in India is not new and historical accounts show that people have moved in search of work, in response to environmental shocks and stresses, to escape religious persecution and political conflict. Youngsters migrate from one place to another for new opportunities and to explore more options which may include various factors like education, employment, marriage and many more. However, there is no comprehensive system to track this migration, making it difficult for policymakers and researchers to identify patterns, understand the reasons behind the movement, and address the challenges faced by young migrants. Without accurate data, government initiatives aimed at regional development, job creation, and infrastructure planning may not effectively meet the needs of young people. Keeping a track of these migrations is important as well as beneficial for the migrants as they will be informed about various opportunities in the area where they went. So after addressing the problem we started our research and reasoned the background of research papers to find the problem domain.

After going through certain research papers and studies we determined the scope of our project lied within India and domain we determined to work on were the various reasons why people migrate in India so we can keep track of the migrations that are happening in India, get the reason for migration and with the help of this data we can help the migrants to get the opportunities provided by Government and various schemes that they can get benefited from.The influence of government policies on migration. For this we read 3 research papers in which one was MAHA MTS which is the live database example of migration tracking system in Maharashtra. It helps us to gather information on how to create a certain system. The next research paper was related to IPUMS which is an international level portal that tracks migration all over the world. The next paper we studied was related to the e-shram portal which is the Indian system that helps us gather information about the migrants. After all the background reading of 10 research papers we were able to conclude the main reasons why people migrate from one place to another, they were:

1.Education migration
2.Employment migration
3.Marriage migration
4.Health issues related to migration
5.Climate change issues of migration
6.Lack of security issues in migration
7.Social security or exclusion issues in migration
8.Two database reviews of IPUMS as an international resource and the e-Shram portal
9.An existent study of the database Maha MTS

After we defined the problems related to our domain we conducted an interview with the company that wants to implement the database. We gathered information for the database and from the interview we got to know the need to create this database was to track migrant data as it was not proper, analyze the data and form a web application that helps the migrants to fulfill their purpose of migration. To gather more trends and patterns on data we created a questionnaire and surveyed various people all over India so that we can get an idea of what exactly they needed. We made an anonymous survey so that no one feels violated. We asked people for their age, gender, education level, occupation(if they had any), their place of origin, their current location, how long they have stayed there, how many times they have migrated and the reasons why they have migrated and the challenges they faced on migration that is any cultural difference that are present how they adapted to situations. On the basis of our survey we were able to get the outputs that we displayed in the SRS. On the basis of the outputs we gathered requirements that were:

- Age Range of the migrated people
- Gender of the migrated people
- Education level of the migrated people
- Occupation of the migrated people (optional)
- Place of origin
- Current location
- Duration at migrated location (patterns)
- Frequency of migration (patterns)
- Reasons for migration Challenges faced after migration

Observations that we made were:

Most of the people that have migrated away for any purpose are in the age group of 21-25, followed by 15-20 and then there are others that helps us to observe that mostly people migrate during their young ages and people are settled after the age of 26 so helps us find the age patterns of people migrating. The number of men and women that are migrating is in the ratio of 60-40 around according to the survey which helps us to make an observation that men migrate partially more than women do. The number of educated people is migrating more than the uneducated ones for new job opportunities, education or any other reason. On the basis of current location and place of origin we can observe the distance migrated by people in order to fulfill their wishes. From the survey we also get to know most people have migrated recently. We also are able to observe that many people have migrated only once to a new location. The most common reason for migration in youth has been education followed by employment and then by marriage and other factors. We can also observe the challenges faced by people like weather, home sickness, food, housing, cultural differences, language barrier, new people, health maintenance, pollution, marital issues and many more… Migration is draining talent from rural or underdeveloped regions. Migrants can be made aware of the government schemes and can be helped to sustain themselves in the alien surroundings.

After making all the observations starting from background reading, then defining the project problems, performing an interview to get a look towards the problems that we have faced whilst creating the same project earlier. Some references to the earlier work done, creating and formulating surveys, doing field work and observing we arrived to the

requirements for creating our database, however it is not complete and can have changes as we are going to create the database as an iterative model so any changes can be made during any part of the project. After all the observations we arrived at the requirements gathering for our project for now. They were:

1. Age-based migration patterns
2. Gender ratio analysis
3. Education level of the migrated people
4. Distance of migration (mostly used to find if the migration is intrastate or interstate)
5. Recent migration trends
6. Frequency of migration
7. Primary reasons of migration
8. Challenges faced by the migrants
9. Information on talent drain

Some of the other requirements we needed were the government policies information, health issues for people that have migrated, the climatic issues and all different kinds of issues that affect the migrants in one way or the other. Some of the functional and non-functional requirements for our project that we could determine so far are:

Functional Requirements:

1. User authentication
2. User authorization
3. Data collection (age, gender, distance, education, challenges, etc.)
4. Search options after creating the database
5. Government scheme integration
6. Survey integration

Non-functional Requirements:

1. Performance
2. Scalability
3. Security
4. Usability
5. Availability
6. Reliability

The youngsters migration database will be useful to various stakeholders such as Government officials and policymakers to track migration trends, design programs that help the migrants and deploy various schemes for them. Researchers to access data patterns on the migrants. NGOs and social organizations to identify vulnerable migrant groups and offer targeted assistance and finally help the migrants to get to the relevant schemes, services and employment opportunities.

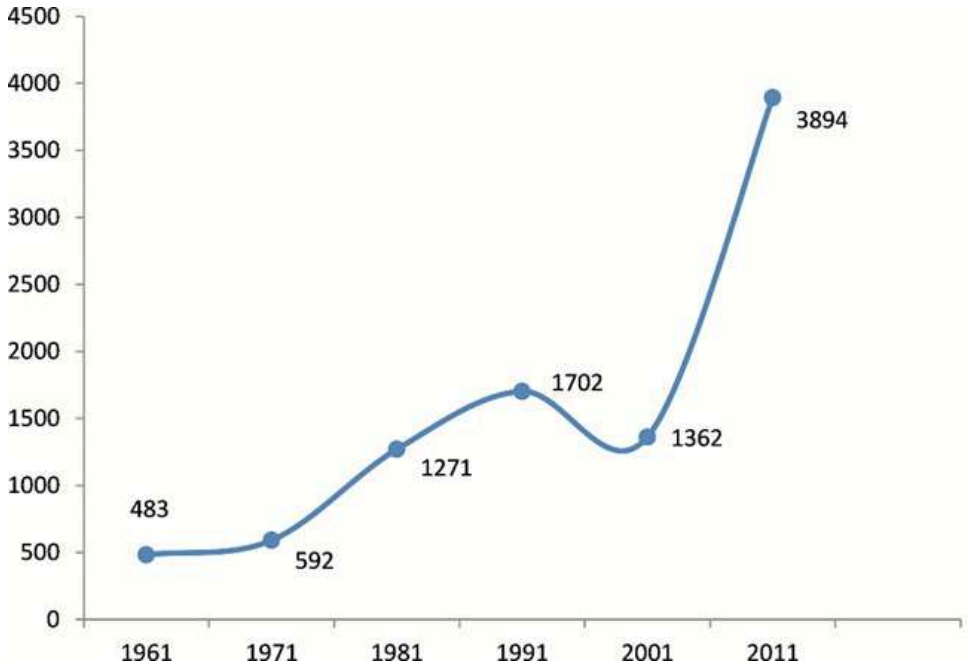
This database allows us to gather information on migrants and has various functions like data management which provides capabilities for administrators to manage, edit and delete migration records. Offers search functionalities on the basis of age, gender, education, etc so that we can target people on the basis of the scheme that is needed for them. Various government schemes related to the migrants can be sent to them and work can be done to help them provide opportunities in the area they are living. This concludes our brief description of the project we are working on.

1.2 Requirement Collection

1.2.1 Background Reading

BR-1 Changing livelihoods at India's rural–urban transition

- This paper describes the important facts of migration from rural areas to urban areas over the decades. It is divided into the shift of employment from agricultural sector, rapid growth at the bottom of the urban system with rural villages turning into urban and significant increases in labor migration
- According to the International Labor Organisation, agricultural employment 250 million jobs in 2004 to 215 million jobs in 2016.
- Urbanization of various rural villages into urban towns called Census Towns (CT) that meet for the first time the threefold Indian Census definition of urban.



- The relation of the first two points is that 75% of the CT became non-agricultural villages which referred to our first concluded point of shifting from agriculture with decades.
- The focus of the paper shifts to the migration of people for labour activities with the terms circular migration and seasonal migration, it mainly focuses on one aspect or reason for migration that is the term ‘bread-winning’ or commonly called employment.
- Circular migrations can be defined as people moving between two or more locations in a repetitive pattern, and often unified for taking seasonal advantage and overlaps with seasonal migration.
- The paper research studies help us to find various reasons for migration like employment and also to figure from where and where are people moving as stated from rural areas to urban areas, this makes our data clear on that.

BR-2 **The Changing Pattern of Internal Migration in India Issues and Challenges**

- The paper has many references to the NSS (2007-08) data and discusses many aspects that are important for our domain of the project.
- The first point that it addresses is the trend of increasing migration of rural women is comparatively increasing than that of men. A reason supporting it is the success of the NREGA in village itself giving men more opportunities.

NSS rounds	Rural		Urban	
	Male	Female	Male	Female
38th (1983)	7.2	35.1	27	36.6
43rd(1987/88)	7.4	39.8	26.8	39.6
49th(1993)	6.5	40.1	23.9	38.2
55th(1999/00)	6.9	42.6	25.8	41.8
64th(2007/08)	5.42	47.3	25.9	45.62

Source: Authors Calculation from various NSS Rounds

- The second point it describes is the short-term migration which can be interpreted as inter-district or intra-state migration and the patterns discovered there too were gender specific to women. The percentage of women migrants is more than that of men in a smaller domain as well.

Table-2: Percentage distribution of migrants in different distance categories, NSS, 1999/00 & 2007/08 (Duration<5yr)

Types of migration	Total		Rural		Urban	
2007/08	M	F	M	F	M	F
Intra-district	37.59	59.05	52.5	69.57	27.71	38.32
Inter-district	34.71	30.33	27.77	24.15	39.31	42.51
Inter-state	26.27	10.33	17.77	6.07	31.9	18.72
International	1.43	0.29	1.95	0.21	1.08	0.45
1999/00						
Intra-district	47.78	63.09	59.84	71.98	37.77	43.47
Inter- district	30.94	26.64	23.06	21.18	37.47	38.67
Inter-state	19.72	9.94	15.08	6.53	23.57	17.46
International	1.56	0.34	2.01	0.31	1.19	0.4

Source: Author's Calculation from various NSS rounds

- The next point it talks about is the inter-state net migration in India which discusses the fact that inter-state migration is more among males and the mobility is from the states with higher levels of

poverty and illiteracy. Below is the table and fig for all the states' net migration.

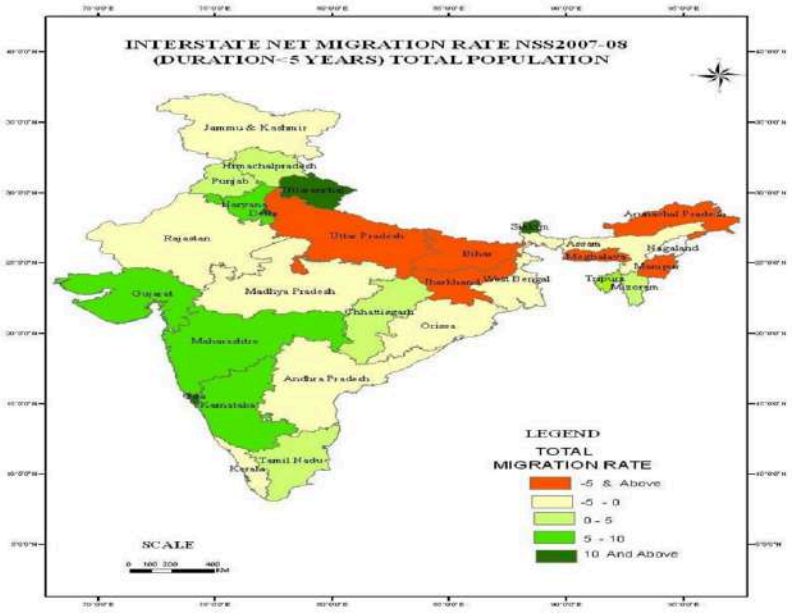


Table-4: Interstate net migration rate (Duration<5yr), NSS 1999/00 & 2007/08

	2007/08			1999/00		
State	**M**	**F**	**T**	**M**	**F**	**T**
Andhra	-2.31	-1.59	-1.95	0.91	-0.03	0.45
Assam	-2.28	-2.44	-2.36	-1.52	-1.13	-1.34
Bihar	-23.25	-12.3	-17.99	-13.77	-10.64	-12.27
Chhattisgarh	2.43	4.59	3.48			
Delhi	93.38	44.57	71.51	-18.74	-26.81	-22.42
Gujarat	13.77	5.19	9.72	2.88	3.47	3.17
Haryana	5.08	7.73	6.32	18.94	25.07	21.81
Jharkhand	-9.63	-5.98	-7.86			
Karnataka	12.84	5.73	9.33	-2.98	-1.42	-2.21
Kerala	-2.44	1.1	-0.58	0.69	-0.46	0.09
MP	-0.87	-1.65	-1.24	2.41	2.89	2.64
Maharashtra	13.51	6.1	9.94	12.56	10.44	11.54
Orissa	-6.71	-1.87	-4.27	0.3	-0.93	-0.31
Punjab	7.92	1.29	4.8	13.96	3.31	8.92
Rajasthan	-2.46	-0.16	-1.34	-3.4	-0.35	-1.93
Tamil Nadu	1.55	0	0.76	0.47	0.77	0.62
Uttar Pradesh	-11.59	-5.52	-8.66	-2.69	-2.18	-2.45
Uttaranchal	33.75	18.67	26.41			
West Bengal	-2.55	1.6	-0.53	1.4	3.45	2.4

Source: Author's Calculation from various NSS rounds

- Next it also talks about the employment patterns of migrants before and after migration, in short it was noted that there was an increase

in the per capita income as well as employment of the migrated workers.

Table-7: Percentage Distribution of Migrants by Occupation Before and After Migration (Dur <5yr, 15-59 age)

Activity Status	Male		Female	
Total	BM	AM	BM	AM
Self employed	28.86	26.01	38.67	41.96
Salaried/wage earner	40.06	54.41	12.8	19.17
Casual Laborer	31.07	19.59	48.53	38.88
Rural				
Self employed	26.88	33.33	40.24	47.04
Salaried/wage earner	32.81	35.23	6.85	9.01
Casual Laborer	40.31	31.43	52.91	43.95
Urban				
Self employed	30.09	22.26	31.88	21.85
Salaried/wage earner	44.55	64.22	38.44	59.34
Casual Laborer	25.37	13.52	29.68	18.81

Source: Author's Calculation from NSS 64th round(2007/08)

- This paper helps us to conclude two parts of our findings as the gender aspect of migration and the difference of migration from interstate to intrastate.

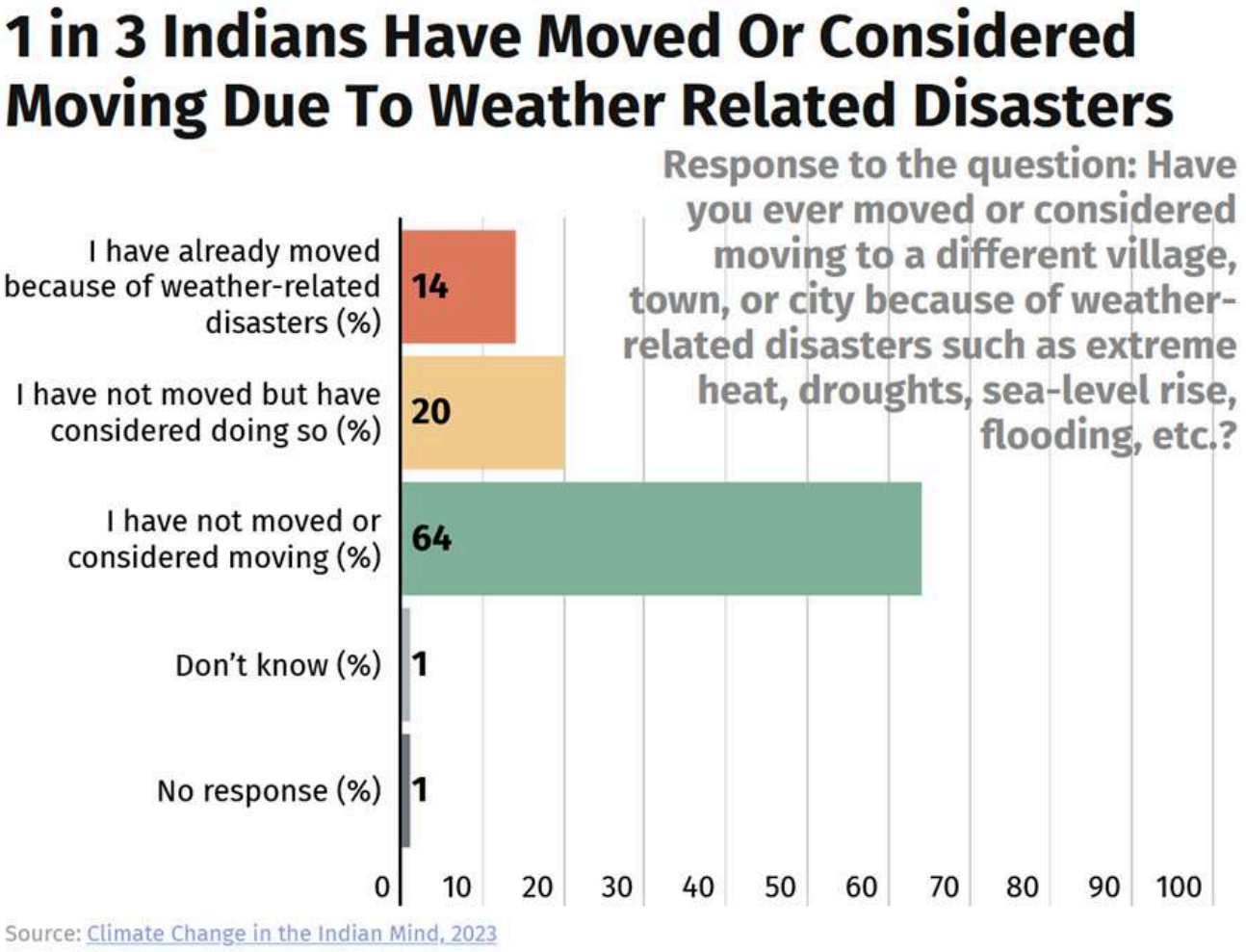
BR-3 **Migration and health: A systematic review on health and health care of internal migrants in India**

- This paper in general talks about the health issues of the migrants that have migrated from one place to another place.
- The poor migrants often are from the less-developed Indian states to the large and metropolis cities. They eventually get absorbed in the informal sector as daily wage laborers or as temporary salaried employees in the industries, factories, and construction companies.
- It discusses various diseases that are prevalent in the migrant workers and how many of them are related to blood pressure.

- Some common problems determined by the paper were hypertension, fasting blood glucose, higher body mass index, diabetes, and vascular diseases whereas their rural siblings did not have that kind of problems
- It also discusses the reasons for their diseases like alcohol and tobacco.
- Some other problems discussed in the paper were headache, fever, malaria and fatigue. There are many migrants that face the issue of acute respiratory diseases.
- Other diseases were skin diseases, sunstroke, myalgia.
- Some had accidents whereas some migrant women were subjected to sexual harassment.
- The paper helps us conclude the problems of migrants related to the health issues and some of the cultural issues that need to be addressed to help them be more impactful towards their contribution in the economy.

BR-4 **Climate change effects a major concern for Indians, 14% migrated due to weather-related disasters**

- This article talks about the displacement of people from one place to another because of weather-related issues like floods, drought, water logging, eroded rivers, etc.
- Then it also talks about the fact that 14% of people in the affected areas migrated because of these prevalent issues.



- Various causes of climatic migration include agricultural pests and diseases, extinction of plant and animal species, severe heat waves, droughts and water shortages, severe air pollution, famines and food shortages, severe cyclones and severe floods

BR-5 Marriage Migration in India

- This paper talks about the largest permanent migration that happens and is called as marriage migration in which the bride migrates from one region to another because of marital reasons.
- The first important point is the bifurcation of marriage migration in northern and southern states, as the amount of migration is more in northern states which relates to the determination of irregular sex ratio resulting into imbalance of men and women in a particular area. Whereas the southern states are less as mostly they marry in same areas and cousin marriage is allowed. This results into a total balanced out state in the southern states.
- The next important point focusses on average marriage migration and gross marriage migration. It is very low for average marriage migration as women moving out of one place are cancelled out by the women moving in to the same place. However, the gross marriage migration is the most in case of migration in India and has resulted as a permanent migration in India.
- Its next focusses on the facts of spatial variance of women from one area to another which is an important data collection for our project. The number of women moving out between 16-22 is the most and it declines with the age of 40. Many of the earlier migrated women are either half or one hour away from their natal home so the distance of women migrated also is an important aspect of it.
- The paper also discusses various problems for brides in their daily household life and how they are mistreated on the basis of low dowry or many other reasons.

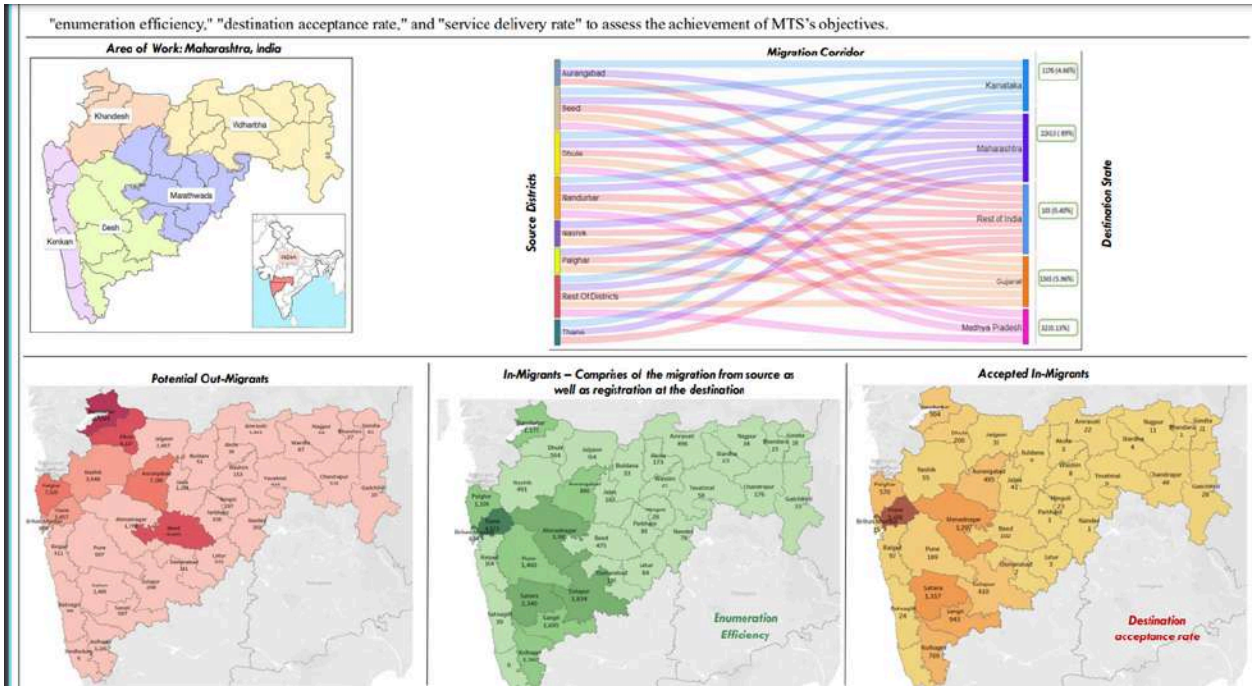
Table 1: Marriage migration, female autonomy, and marriage customs

	All India	Northern states		Rest of India	
		Rural	Urban	Rural	Urban
Fraction women over 22	1.00	0.29	0.07	0.43	0.21
Fraction migrate for marriage	0.66	0.83	0.68	0.62	0.39
Fraction women over 22 illiterate	0.57	0.71	0.43	0.56	0.27
Fraction women migrate illiterate	0.52	0.71	0.39	0.54	0.27
Fraction do any non-domestic work	0.30	0.34	0.14	0.36	0.18
Fraction with any work ouside home	0.07	0.07	0.05	0.07	0.09
Hours to natal home on marriage	3.42	3.48	4.81	2.91	3.87
Who chose your husband?					
Respondent herself	0.05	0.02	0.03	0.07	0.06
Respondent and parents	0.34	0.22	0.30	0.38	0.43
Parents alone	0.60	0.75	0.66	0.54	0.50
Other	0.01	0.00	0.00	0.01	0.01
How long had you known your husband before you married him?					
On wedding/gauna day	0.68	0.87	0.85	0.59	0.54
Less than a month	0.09	0.03	0.04	0.13	0.14
Less than a year	0.11	0.04	0.03	0.13	0.18
More than a year	0.04	0.03	0.04	0.04	0.06
Since childhood	0.08	0.03	0.05	0.11	0.08
In your community (jati) do people:					
Marry a daughter in her natal village?	0.48	0.30	0.48	0.56	0.57
Marry a daughter to her cousin?	0.38	0.16	0.25	0.49	0.47
Do you need permission to visit the health center?					
Yes	0.73	0.83	0.76	0.73	0.61
If yes, can you go alone?	0.66	0.44	0.66	0.74	0.83
Do you need permission to visit the home of relatives or friends in the neighborhood?					
Yes	0.73	0.79	0.73	0.72	0.69
If yes, can you go alone?	0.69	0.53	0.67	0.74	0.79
In your *community* is it usual for husbands to beat their wives if:					
She goes out without telling him?	0.39	0.50	0.32	0.38	0.29
Her natal family does not give expected gifts?	0.29	0.34	0.26	0.29	0.22
She neglects the house or children?	0.35	0.37	0.26	0.37	0.29
She doesn't cook food properly?	0.29	0.34	0.21	0.31	0.23

BR-6 [Mitigating Vulnerabilities of Seasonal Migration Case of Maharashtra Migration Tracking System]

- This paper discusses the web application launched by the Maharashtra Government known as the Maha MTS, and it is the same model as we are working on which allows people to apply on the web portal and find various opportunities in the area they have migrated to.

- The aims of Maha MTS are:
    i. Enumerate seasonal migrants in high burden districts
    ii. Deliver essential social services and entitlements to migrant families
    iii. Develop technology platform for seamless service transfer
    iv. Leverages existing in government field functionaries and officers for uninterrupted transfer and access to state's social protection services
- This study critically assesses the operational feasibility of MTS in mitigating health and nutrition vulnerabilities among migrant populations.
- Analysis of data for 37,848 seasonal migrants (for the year 2021-22) from high-burden districts in Maharashtra was conducted, employing operational efficiency indicators like "enumeration efficiency," "destination acceptance rate," and "service delivery rate" to assess the achievement of MTS's objectives.
- The Maha MTS mobile-based application has proven instrumental in enumerating a total of 69,195 potential migrant beneficiaries, with 21,472 individuals actually undergoing migration. Among these migrants, 10,161 were successfully accepted at their intended destinations, allowing services to be delivered to 31% of the beneficiaries.
- Most seasonal migrants were 'Intra-State' migrants (89%), about 6% went to Gujrat, 4.6% Karnataka and the rest to other states.



BR-7 [Internal Migration for Education and Employment among Youth in India]

- States with low literacy rate such as UP, Bihar, Rajasthan face challenges while providing higher quality education which leads to higher fertility rates and an outflow of human capital

  Finding: We can get the states from where young people move out

- Intra state migration with 45% is on a higher side than inter-state migration that accounts to only 17% of the total migration

  Finding: Intra state migration is more than inter-state migration

- The flow of human capital across states has significant implications for balanced regional development in India like Gujarat, Maharashtra benefit from this influx while other regions suffer from losing educated individuals.

  Finding: Migration effects on various states in India

There are four migration streams: rural-rural, rural-urban, urban-rural and urban-urban. Further, the stream can be intra-district, intra-state and inter-state.

Table 1: Net Attendance Ratio by Broad Class Group (All India)

Class Group	Rural			Urban			Rural +Urban		
	Female	Male	Total	Female	Male	Total	Female	Male	Total
I-V	83	86	84	84	86	85	83	86	84
VI-VIII	54	59	57	64	67	65	56	61	59
IX-X	35	40	38	51	52	51	39	43	41
XI-XII (general education)	19	25	22	39	39	39	25	29	27
XI-XII *(all education)	20	25	23	39	40	40	25	29	27
Post higher secondary (general education)	5	8	6	14	13	14	7	9	8
Post higher secondary (all education.)	6	10	8	21	20	21	10	13	12

* includes diploma with minimum requirements below higher secondary
Education is categorized in three classes in the survey: (i) general education, (ii) technical and professional education and (iii) vocational education. All education includes (i) (ii) and (iii)
Source: Government of India (2010a)

Table 2: Distribution of internal migrants by last usual place of residence for each component of rural-urban migration streams

Migration streams	Intra district	Inter district	Intrastate (Intra district+ Inter district)	Interstate	All (intrastate+ Interstate)
55th round (1999-2000)					
Rural-to-rural	75.3	20.1	95.4	4.6	100
Rural-to-urban	43.8	36.5	80.3	19.6	100
Urban-to-rural	46.5	33.5	80.0	20.0	100
Urban-to-urban	36.6	43.5	80.1	19.9	100
64th round (2007-08)					
Rural-to-rural	72.4	23.2	95.6	4.4	100
Rural-to-urban	41.2	33.6	74.8	25.2	100
Urban-to-rural	48.8	33.8	82.6	17.5	100
Urban-to-urban	27.9	49.2	77.1	22.9	100

Source: NSSO (2010) Report on Migration in India

Table 3 : Number of Migrants by Reason for Migration (15-32 years)					
	Migration Streams				
Reason for migration	Rural-Rural	Rural-Urban	Urban-Rural	Urban-Urban	Total
In search of employment	1,810,512	5,707,409	590,054	2,353,658	10,461,633
Education	708,610	1,617,152	604,671	915,401	3,845,834
Marriage	60,048,081	8,070,261	3,812,910	5,619,806	77,551,058
With parent/earning member of family	3,267,400	5,482,397	883,167	4,354,838	13,987,802
Others	2,120,095	686,414	648,865	758,396	4,213,770
Total	67,954,698	21,563,633	6,539,667	14,002,099	110,060,097

10

This paper helps us to determine the different field levels in different states according to the NSSO websites within the age group of 15-32 which exactly lies in the domain of our project and helps us determine the people we are going to figure out the ways to manage them in a database.

Table 6: Share of migrant population by states and educational attainment in last 10 years (Age group 15-32 years)							
	Education level						
Destination States	Illiterate	Below Primary	Primary/ Middle	Secondary	Higher Secondary Diploma	Graduate and above	Total
Jammu & Kashmir	0.3	0	0.3	0.1	0.2	0.1	0.2
Himachal Pradesh	0.9	0.5	0.8	0.3	0.4	0.6	0.6
Punjab	7.8	10	5.6	4.2	3.9	3.9	5.7
Uttaranchal	3.6	2.3	2.7	2.8	2.3	2.4	2.8
Haryana	7	5.9	6	7.4	5.5	5.4	6.3
Delhi	14.1	10.8	17.1	19.4	14.8	15.8	16
Rajasthan	9.3	7.4	4.3	3	5.2	3	5.3
Uttar Pradesh	13	11.5	4.9	7.9	6.3	11.1	8.4
Bihar	2.7	3.1	1.1	1.6	1.1	1.1	1.6
NE States	0.4	0.8	0.7	0.3	0.3	0.4	0.5
Assam	0.2	0.2	0.3	0.3	0	0.1	0.2
West Bengal	6.1	3.6	3.8	3	0.8	3.9	3.8
Jharkhand	0.6	1.9	0.8	0.9	0.3	0.7	0.8
Orissa	1.1	2.4	1.2	1	1.5	1	1.2
Chattisgarh	1.5	1.3	1.8	0.7	1.5	0.6	1.4
Madhya Pradesh	4.4	5.4	3.1	2.1	2.4	2.4	3.2
Gujarat	5.2	9.9	11.5	7.9	4.9	4	7.8
UTs except Delhi	1.8	1.8	1.7	2.9	4.7	3.5	2.5
Maharashtra	12.6	11.8	19.5	19.5	16.9	14.7	16.6
Andhra Pradesh	2.8	3	2.7	3.4	3.3	3	3
Karnataka	3.1	2.7	5	5.7	14.9	14.1	6.9
Goa	0.2	1.4	0.5	0.9	1	1.5	0.8
Kerala	0.4	0.6	1.8	1.3	2.3	2	1.4
Tamil Nadu	1.1	1.6	3	3.3	5.3	4.6	3.1
Total	100	100	100	100	100	100	100

- This table gives the share of each state's contribution in migrants education attainment in the last 10 years
- This table helps us to bifurcate the migrants of different states in India

Table 9: Transition across Broad industry groups after migration (age group 15-32)

	Agriculture and mining	Manufacturing	Construction	Trade and Hotels	Transport	Other Services
Agriculture and Mining	**50.9**	**7.3**	**2.7**	**2.7**	1.6	2.0
Manufacturing	0.7	**8.0**	0.2	0.4	0.2	0.3
Construction	0.8	0.7	**3.7**	0.2	0.3	0.1
Trade and Hotels	0.3	0.7	0.1	**5.1**	0.1	0.5
Transport	0.1	0.2	0.0	0.1	**2.1**	0.1
Other Services	0.2	0.2	0.1	0.1	0.1	**6.9**

Table 7: Migration for employment by current state and location of last usual place of residence (Age group 15-32 years)

	Last Usual Place of Residence								
	Same District		Other District		Same State		Other State		
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	urban	Total
State	1	2	3	4	5(1+3)	6(2+4)	7	8	5+6+7+8
Jammu & Kashmir	11.7	20.8	15.8	17.2	27.5	38	28.8	5.8	100
Himachal Pradesh	30.5	8.2	18.2	6.9	48.7	15.1	21.7	14.5	100
Punjab	6.1	0.9	5.8	3.4	11.9	4.3	75.1	8.6	100
Uttaranchal	11.5	3.6	9.6	8.9	21.1	12.5	46.8	19.7	100
Haryana	4.1	3.5	12.2	3.3	16.3	6.8	56.3	20.5	100
Delhi	0.6	1	0.9	2.9	1.5	3.9	73	21.6	100
Rajasthan	43.3	3.4	19.3	9.1	62.6	12.5	16.1	8.8	100
Uttar Pradesh	12.6	6.7	34.6	18.6	47.2	25.3	15.5	12	100
Bihar	33.6	4	34.8	7.6	68.4	11.6	8.5	11.5	100
NE States	26.2	7.3	15.2	13.4	41.4	20.7	28.8	9.1	100
Assam	29.4	2.3	42.1	14.6	71.5	16.9	9	2.7	100
West Bengal	20.5	4.8	19.4	12.1	39.9	16.9	32.3	10.8	100
Jharkhand	33.9	1.4	47.1	5.1	81	6.5	2.5	10	100
Orissa	30.4	4.9	40.5	8	70.9	12.9	10.4	5.8	100
Chattisgarh	38.4	2.7	14.4	12.2	52.8	14.9	13.5	18.8	100
Madhya Pradesh	24.7	13.5	24.9	12.5	49.6	26	17.5	6.8	100
Gujarat	13.8	3.5	9.3	7.2	23.1	10.7	61.3	4.8	100
UTs except Delhi	5.3	2.1	1.3	0.9	6.6	3	68.3	22.1	100
Maharashtra	11.3	4.4	19.8	14.6	31.1	19	42.3	7.6	100
Andhra Pradesh	37	3.4	28.5	20.2	65.5	23.6	5	5.9	100
Karnataka	11.4	2.2	26.2	23	37.6	25.2	18.3	18.9	100
Goa	3.4	0.4	0	1.6	3.4	2	53	41.6	100
Kerala	22.4	2	40.2	14.5	62.6	16.5	15.1	5.9	100
Tamil Nadu	14.8	9.5	29.2	27.5	44	37	10.6	8.5	100
Total	17.1	4.1	19.9	13.3	37	17.4	34.9	10.7	100

- This is the table for migrant employment in different states which helps us to bifurcate the people with employment on the basis of different states.

BR-8 Data Resource Profile: IPUMS-International

- The Integrated Public Use Microdata Series-International (IPUMS-International) is a global initiative to disseminate census microdata. Since its inception in 1999, IPUMS-International has partnered with over 100 national statistical agencies to provide standardized census data from more than 82 countries, making it the largest collection of publicly available census microdata in the world.
- IPUMS-International currently offers 277 anonymized microdata samples, spanning from 1960 to 2011 and covering over 600 million persons globally. These data cover a broad range of population characteristics, including fertility, migration, education, and labor force participation. The data are available free of charge through an online system, where researchers can create customized datasets tailored to their specific needs.
- The data series uses a uniform coding system, allowing variables to be harmonized across countries and time periods without losing detail. IPUMS-International offers advanced features like constructed household relationship variables and spatiotemporal harmonization of geographical boundaries to enable precise research and comparison across regions.
- The database includes detailed geographical data, often down to the second administrative level (e.g., municipalities or districts), making it suitable for analyzing regional variations in public health, economic development, and migration patterns. IPUMS

also provides GIS boundary files to support mapping and spatial analysis.

- The strengths of IPUMS-International include its global reach, harmonized data, and free access to vast census datasets. The main limitation is that the data are cross-sectional, meaning individuals cannot be tracked across censuses. Despite this, the large sample sizes and harmonized variables provide precise analyses across time and space.
- This paper helps us to figure the database creation of the whole world migration as an idea

BR-9 Visibilising Invisible Population: e-Shram Portal and Essentiality of Internal Migration Database in India

- This paper talks about various issues of internal migration various factors that affect them like the structural changes in the economy, regional inequalities, agrarian distress and urbanization that led millions of people to migrate
- By 2020, an estimated 600 million people were internal migrants in India, most of whom work in informal urban sectors.
- This paper talks about the lack of social security for the migrants. Internal migrants face exclusion, marginalization, and lack of social security in destination cities. They are often employed in informal jobs such as construction, street vending, and domestic work, yet remain invisible in policy frameworks. The COVID-19 pandemic exacerbated their vulnerability, exposing the lack of support and protection for this population.
- It talks about the need for social security of the migrants to protect them from extortion. The paper emphasizes the necessity of

registering migrants, which allows them to access entitlements and government benefits.

- The focus then shifts from it to the creation of e-Shram portal which is a comprehensive database of unorganized workers. The portal aims to register unorganized workers and provide them with access to social security benefits. By May 2023, over 289 million workers had registered, with more women than men, highlighting the importance of gender-specific protection measures.
- The registration process faces hurdles, such as the need for Aadhaar-linked mobile numbers and bank accounts, which many migrants do not have. Technical issues, confusion in job categorization, and regional disparities in registration also hinder the process. Misconceptions about the portal among workers further complicate effective registration.
- To ensure the inclusion of migrants in policy and development, the paper calls for a data-driven, rights-based approach. It recommends disaggregating and triangulating migration data to better understand the specific needs of different migrant groups, especially vulnerable populations like women and seasonal workers. The paper also stresses the need for collaboration between various stakeholders to improve social security provision for internal migrants.

BR-10 **A Study on Social Security and Health Rights of Migrant Workers in India**

- This paper is useful to gather information about the social security of Indian migrant workers.
- Social security consists of policies and programmes designed to reduce poverty and vulnerability.

- It can include social insurance, social assistance and other interventions.
- Social insurance programmes require regular contributions and provide insurance against shocks.
- Social assistance programmes are generally targeted at the poor and non-contributory. Interstate migrant workers, by and large, are poor while some of them are in the most vulnerable and in worst condition who need support through various social assistance programmes. In fact, we cover their eligibility for participating in social protection programmes.
- It is pertinent to identify the barriers to such participation and to examine what has been or can be done to minimize risks of exclusion and promote adequate coverage for interstate migrant workers.

Figure: 1.2

Components of Social Security or Social Protection

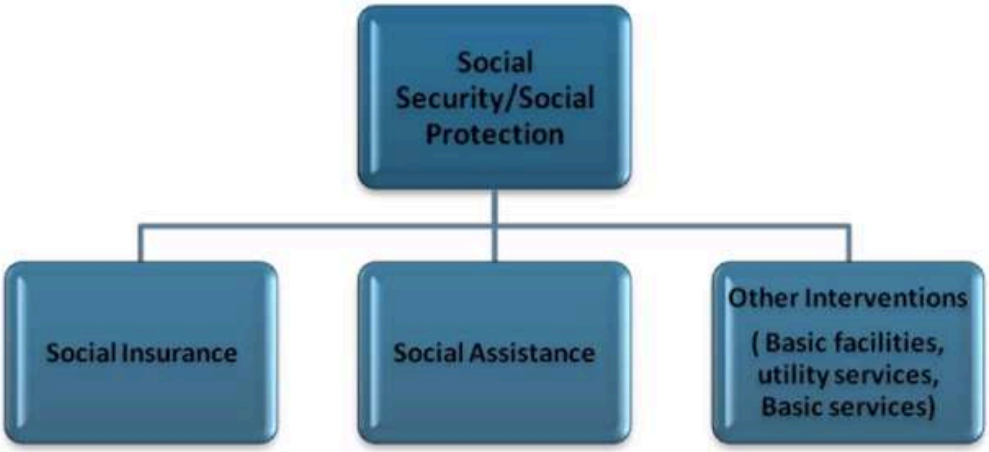


Table 2.3

Occupation of Interstate Migrant Workers Covered by Survey

Occupation of ISMW covered	ISMW in Delhi		ISMW in Gujarat		ISMW in Haryana		ISMW in Maharashtra	
	Number	%	Number	%	Number	%	Number	%
Construction workers	60	15	84	21	88	22	92	23
Factory workers in organized sectors such as Textiles and Chemicals	28	7	40	10	28	7	28	7
Factory workers in unorganized sector (include Artisans, workers / welding units, automobile workshops/ other workshops)	32	8	44	11	16	4	24	6
Trading activities such as hotel, restaurant, shops, wholesale and retail markets and street vending	68	17	44	11	60	15	60	15
Agriculture workers such as farming operations, sugarcane cutters, salt pans, cotton ginning)	4	1	16	4	20	5	12	3
Jewelry works, brick kilns, salt making, stone quarrying, Diamond cutting	4	1	28	7	8	2	8	2
Work with security agency as security guards	48	12	48	12	40	10	52	13
Rickshaw pullers, E – Rickshaw drivers, rag pickers	44	11	20	5	8	2	20	5
Domestic Workers	44	11	40	10	56	14	48	12
Daily wage workers with Television and film industry and e-commerce companies including delivery boys	20	5	16	4	12	3	28	7
Other Daily wage workers such as Plumbers, electricians and painters)	48	12	20	5	64	16	28	7
Total	**400**	**100**	**400**	**100**	**400**	**100**	**400**	**100**

Source: Primary Data

Table 2.4

Interstate Migrant Workers: Period of Stay in Host States

Duration of stay in host States	Delhi		Gujarat		Haryana		Maharashtra	
	Number of Responses	%	Number of Responses	%	Number of Responses	%	Number of Responses	%
Up to 3 months	12	3	22	5.5	10	2.5	21	5.25
Up to 6 months	15	3.75	30	7.5	40	10	27	6.75
Up to 9 months	19	4.75	90	22.5	65	16.25	80	20
Up to 1 year	21	5.25	60	15	82	20.5	67	16.75
2-3 years	98	24.5	85	21.25	99	24.75	97	24.25
3-4 years	152	38	72	18	65	16.25	92	23
4-5 years	63	15.75	30	7.5	21	5.25	10	2.5
Above 5 years	20	5	11	2.75	18	4.5	6	1.5
Total	**400**	**100**	**400**	**100**	**400**	**100**	**400**	**100**

Source: Primary Data

- There are several forms of human rights violations against interstate migrant workers. These are poor access to health services, poor access to social protection, poor access to education services, poor access to housing and sanitation, poor access to food, water and other utility services. There is clear evidence of poor access to health services for migrant workers in all four States.

Fig 2.3

Areas of Human Rights Violations

Table 2.5
Social Security and Health of Interstate Migrant Workers and Human Rights Violations: State wise

Types of Violations	Delhi		Gujarat		Haryana		Maharashtra	
	Number of Responses	%	Number of Responses	%	Number of Responses	%	Number of Responses	%
Absence of proper accommodation/ Poor quality of accommodation	336	84	324	74	324	81	356	89
Inadequate safeguards / high risk at worksites	289	72.3	292	73	304	76	308	77
Non- Provisioning of entitlements of government schemes	248	62	260	65	244	61	276	69
Poor access to available schemes and services due to the lack of information and language barriers	204	51.2	212	53	224	56	220	55
Distress from ill treatment of local laborer	100	25	108	27	196	49	210	52.5
Long working hours	192	48	208	52	212	53	218	54.5
Absence of leisure time/ entertainment	156	39	152	38.2	162	40.5	170	42.5
Poor social interactions and lack of integration with the local community	154	38.5	156	39	158	39.5	206	51.5
Limited access to health care services	68	17	180	45	116	29	220	55
Distress from ill treatment and discrimination of employer	48	12	128	32	72	18	156	39
Exploitation of migrant labourers by middleman/ agents and the resultant low wage	48	12	76	19	54	13.5	174	43.5

Source: Primary Data
Note (1) Multiple Response Questions
Note (2): A significant number of ISMW are unaware of their problems, especially the long working hours and lack of leisure or entertainment. ISMW, mostly young and without family members in host States prefer to work overtime and earn maximum amount of salary

- There are many different discriminations against the migrant worker due to difference in regional practices that makes them left out and groupism is created and looked down on.

Table 2.6

Interstate Migrant Workers: Forms of Prejudices and Discriminations

Forms of Prejudices/ Discriminations	Responses of ISMW in Delhi		Responses of ISMW in Gujarat		Responses of ISMW in Haryana		Responses of ISMW in Maharashtra	
	Number	%	Number of Responses	%	Number of Responses	%	Number of Responses	%
Local people believe migrant labourers are polluting the environment by dumping wastes in public places. Migrant labourers are accused of dumping food and other wastes into common land and rivers/canals thus polluting the environment	374	93.5	360	90	348	87	356	89
Local people consider migrant laborers as outsiders and do not treat them as equals in the society. Social exclusion of ISMW a reality	370	92.5	348	87	344	86	362	90.5
Employers discriminate ISMW in the labour market in respect of wages and accommodation. A significant number of ISMW do not have much complaint about the wage discrimination as the current wage is quite attractive to them compared to the home State	228	57	260	65	236	59	276	69

Source: Primary Data

Note:(i). Responses of three categories of responders are included : A total of 2800 respondents –ISMW, Local Labourers and Employers have indicated various forms of prejudices and discriminations. These are presented under five broad heads

(ii).Multiple Response Questions and the total number of respondents are 2800

- This study is mainly limited to the worker conditions in 4 states of Gujarat, Haryana, Delhi, and Maharashtra but the main outcome we needed from this paper was about the social security concerns of the migrants.

Conclusion

After reading all the 10 research papers we have figured out the domains of our project and where we can gather data revolve around and briefing of the project description helps us find the points we need to work during this project:

1. Education migration
2. Employment migration
3. Marriage migration
4. Health issues related to migration
5. Climate change issues of migration
6. Lack of security issues in migration
7. Social security or exclusion issues in migration
8. Two database reviews of IPUMS as an international resource and the e-Shram portal
9. An existent study of the database Maha MTS

These points conclude the project description on background reading.

References

BR-1https://www.sciencedirect.com/science/article/pii/S0305750X21002321

BR-2 https://www.shram.org/uploadFiles/20130128045030.pdf

BR-3https://www.researchgate.net/publication/326830056_Migration_and_health_A_systematic_review_on_health_and_health_care_of_internal_migrants_in_India

BR-4https://scroll.in/article/1069564/climate-change-effects-a-major-concern-for-indians-14-migrated-due-to-weather-related-disasters

BR-5https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=42b4648b6f9bdcbf834e35b37f917aeab2aae83a#:~:text=Marriage%20migration%20in%20India%20is,from%20their%20place%20of%20birth.

BR-6https://cartography.genevahealthforum.com/images/posters/posters_2024_pdf/sankhe_tiksha.pdf

BR-7 https://www.shram.org/uploadFiles/20140122121634.pdf

BR-8 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5837405/

BR-9https://journals.sagepub.com/doi/full/10.1177/23944811231174827#:~:text=To%20create%20a%20credible%20database,a%20comprehensive%20and%20challenging%20process

BR-10https://nhrc.nic.in/sites/default/files/Approved_Health%20and%20social%20security%20ISMW_KDS-NHRC.pdf

1.2.2 Interviews

MoveForward Database: Interview Plan

System: MigrateMatrix

Project Reference: SF/SJ/2024/09

Participants: Hem Shah (MigrateMatrix)

Mohsin Pathan (MoveForward Database)

Date: 03/09/2024 **Time:** 14:30

Duration: 30 minutes **Place:** Hem's Office

Purpose of interview:

Preliminary meeting to identify problems and requirements regarding youngsters' migration database for MigrateMatrix.

Agenda:

- Problems regarding the insufficient data available on migrant information
- The information regarding cultural differences and discrimination
- Problems regarding their lifestyle and financial conditions
- Initial ideas
- Follow-up actions

Documents to be brought to the interview:

- Rough plan of the data to be collected
- Any Government ID and documents related to current database system

Interview Questions

1) What are you going to do as a company with this data?

2) Why do you want to build this database as a company?

3) What is the current status of the datasets?

4) What is the main problem that you have faced in the past that hampered the progress of making this database?

5) What are the social problems you think that the migrants are facing?

6) Which is the most common problem that needs to be addressed for the migrants?

7) What will be the impact on society and the policies of the Indian Government for migrants by creating this database?

8) Why do young people migrate? How does it affect the rural areas and what is the data you have about distribution across regions?

MoveForward Database: Interview Summary

System: MigrateMatrix

Project Reference: SJ/SF/2024/09

Participants: Hem Shah (MigrateMatrix)

Mohsin Pathan (MoveForward Database)

Date: 03/09/2024 **Time**: 14:30

Duration: 30 minutes **Place**: Hem's Office

Purpose of interview:

Preliminary meeting to identify problems and requirements regarding youngsters' migration database for MigrateMatrix.

1. Young migrants often face a mismatch between their qualifications and available job opportunities, but there's insufficient data to analyse this issue comprehensively. (*action: introduce Government initiatives and collaborate them area-wise to help the migrating people*)

2. Many young people move without being formally recorded leading to gaps in available data.

3. Existing datasets often don't distinguish between different age groups or reasons for migration, making it difficult to focus on youth. (*action: create a database that helps extinguish people on the basis of age*)

4. Don't have adequate data on people's reasons for moving that helps them. (*action: circulate the questionnaire on youngsters' migration database as much as possible*)

5. There are many cultural differences and discrimination between the migrants and locations. (*action: look for common values between them and look to address them*)

6. The living and financial conditions of people that have migrated.

7. Without data on Youth migration patterns, policymakers struggle to develop targeted problems that address the specific needs of youth migrants

8. Many young people migrate for better opportunities, causing a brain drain in rural or less developed areas, but there's limited data on how migration is affecting talent distribution across regions.

9. Further discussions need when more information is available. (*arrange a follow-up meeting with Hem (in about a week's time))*

1.2.3 Questionnaires/Surveys

MigrateMatrix - Youngster's Migration in India -Survey

1. What is your age? 15-20 / 21-25 / 26-30 / Above 30

2. What is your Gender? Male / Female / Prefer not to say

3. What is your education level? 10^{th} / 12^{th}/ Graduate / Post-Graduate / other

4. What is your occupation?

---

5. What is your place of origin?

---

6. What is your current location?

---

7. How long have you been staying at the migrated location?

Less than a year / Less than 5 years / More than 5 years / other

8. How many times have you migrated to a different location within 5 years?

Once / Twice / Thrice / other

9. What is the reason for your migration?

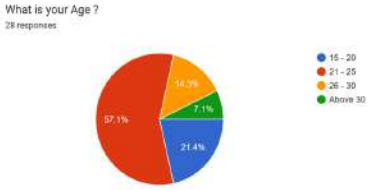
Education / Employment / Health / Social Exclusion / Lack of Security / Climate conditions / Marriage / Other

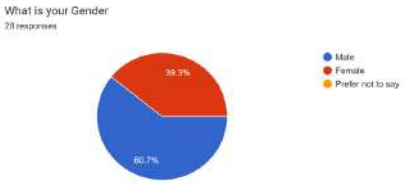
10. What are the challenges you faced after migration?

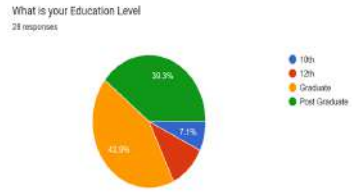
---

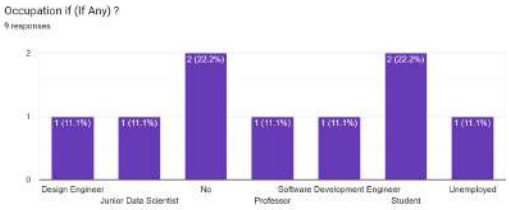
11. Suggestion and Feedback

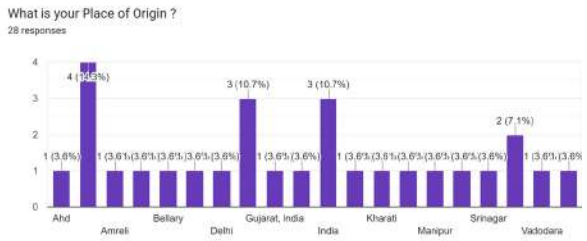
Google form Responses

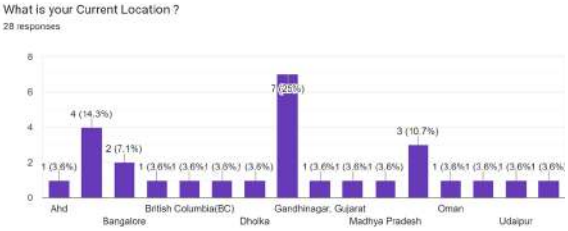


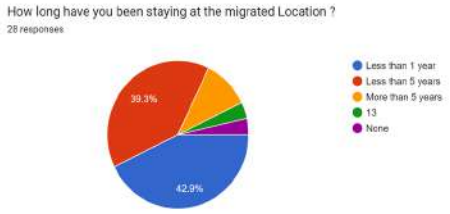


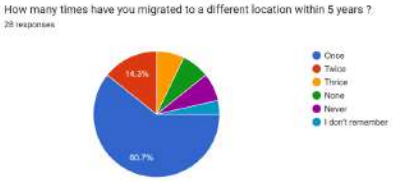


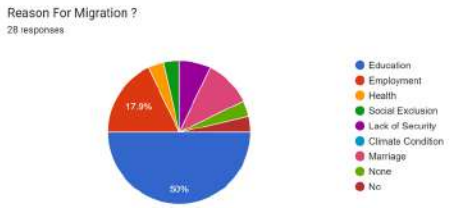


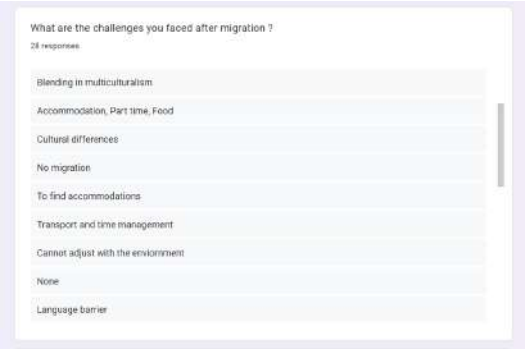












1.2.4 Observation

List of Observations:

- Most of the people that have migrated away for any purpose are in the age group of 21-25, followed by 15-20 and then there are others that helps us to observe that mostly people migrate during their young ages and people are settled after the age of 26 so helps us find the age patterns of people migrating.
- The number of men and women that are migrating is in the ratio of 60-40 around according to the survey which helps us to make an observation that men migrate partially more than women do.
- The number of educated people is migrating more than the uneducated ones for new job opportunities, education or any other reason.
- On the basis of current location and place of origin we can observe the distance migrated by people in order to fulfill their wishes.
- From the survey we also get to know most people have migrated recently
- We also are able to observe that many people have migrated only once to a new location
- The most common reason for migration in youth has been education followed by employment and then by marriage and other factors.
- We can also observe the challenges faced by people like weather, home sickness, food, housing, cultural differences, language barrier, new people, health maintenance, pollution, marital issues and many more…
- Migration is draining talent from rural or underdeveloped regions.
- Migrants can be made aware of the government schemes and can be helped to sustain themselves in the alien surroundings.

1.3 Fact-Finding Chart

Objective	Technique	Subjects	Time-commitment
To get the background Information	Background reading	Research papers ,articles	2 days
Introduce Government initiatives and collaborate them area-wise to help the migrating people	Interview	The government reports and surveys	project duration
Help collect information About problems faced by Migrants	Survey	The migrants	3-4 days
Age-migration trends	Background Reading, survey	The migrants, migrant records	1-2 days
Current information about the database	Interview	The director and the database administrator	30 minutes
To follow up on company information	Observation	The staff of the company	1 day
To establish the ideas To be added to the new system	Interview	2 managers and 3 creative staff	3 * 1 hours
To establish the Records and documents Already present with the company	Interview/ Document sampling	Filing clerk / Librarian	2 * 1 hours
Gender ratio in migration	Surveys, migration reports	Compare gender distribution in migrants.	1-2 days
Education level and Migration	Surveys, Background Reading	The migrants	1-2 days
Talent drain from rural/ underdeveloped regions	Assess the impact of migration	Regional development reports, surveys	1-2 days

1.4 Requirements List

List of the requirements gathered

1. Age Range of the migrated people
2. Gender of the migrated people
3. Education level of the migrated people
4. Occupation of the migrated people (optional)
5. Place of origin
6. Current location
7. Duration at migrated location (patterns)
8. Frequency of migration (patterns)
9. Reasons for migration
10. Challenges faced after migration

Requirements gathered from Observations

- Age-based migration patterns
- Gender ratio analysis
- Education level of the migrated people
- Distance of migration (mostly used to find if the migration is intrastate or interstate)
- Recent migration trends
- Frequency of migration
- Primary reasons of migration
- Challenges faced by the migrants
- Information on talent drain
- Sustaining migrants in new environments

1.5 User Privileges

User Classes and Privileges

1) Database Administrator (DBA):

Role: Manages the entire database system, ensures data integrity, security and backups.

Privileges: Full access to the database tables, views, and system functions. Can create, modify, delete any data and assign privileges to other users.

2) Data Entry Operator:

Role: Enters data from research and surveys about youngsters' migration patterns.

Privileges: Insert and Update permissions on tables related to youngsters, migration events, and surveys, but no limited access to sensitive information such as user login details.

3) Researcher:

Role: Conducts data analysis and runs queries to extract insights on migration trends.

Privileges: Read-only access to all tables and views. Can perform SELECT operations but cannot insert, update, or delete data. Might have access to specific aggregated views to maintain privacy.

4) Government Policy Researcher:

Role: Accesses reports and high-level data on migration trends to inform policy decisions.

Privileges: Read-only access to summarized or aggregated views that highlight trends (e.g., migration rates by region, employment, education, etc.). Restricted access to raw data to protect individual privacy.

5) Survey Analyst:

Role: Works with raw data from surveys and interviews, analyzing factors that influence migration.

Privileges: Access to detailed survey tables, the ability to run complex queries, and potentially the ability to modify analysis tables (but not core migration or youngster data).

6) Public User:

Role: Accesses public reports or summary data via a front-end web interface.

Privileges: Read-only access to highly aggregated or anonymized reports. No access to raw data.

User Class	Privileges
DBA	ALL PRIVILEGES on all tables, views, and procedures, including CREATE, DROP, ALTER, GRANT, REVOKE
Data Entry Operator	INSERT, UPDATE on **Youngster**, **MigrationEvent** tables
Researcher	SELECT on all tables and views, no INSERT/UPDATE/DELETE
Government Policy Researcher	SELECT on the **GovernmentPolicy** table and related tables
Survey Analyst	Access only to survey data
Public User	SELECT on public aggregated views, no access to core data tables

Operating Environment

Hardware Requirements:

Database Server: 4-core CPU, 16GB RAM, 512GB SSD

Software Requirements:

DBMS: PostgreSQL

OS: Windows / Ubuntu

External Interfaces: User interfaces for data entry, researchers and public reports, Google forms for collecting information, Different websites for researchers

Chapter 2: Database Design

2.1 Noun Analysis

1) Noun Verb analysis

Nouns	**Verbs**
Migration	Track
India	Migrate
Youngster	Move
Government	Affect
Village	Seek
Town	Adapt
Region	Influence
Gender	Suffer
Age	Determine
State	Enable
Health	Discriminate
Climate	Differentiate
Marriage	Participate
Employment	Live

Education	Enroll
Social Security	Settle
People	Identify
Culture	Understand
Population	Address
Reason	Meet
Skills	Inform
Alien	Went
Policymakers	Started
Pollution	Reasoned
Migrant	Going through
Work	Determined
Response	Work on
Factors	Happening
Stresses	Get
Job creation	Help
Infrastructure	Gather
Research papers	Get benefitted
Research	Reading
Scope	Implement
Schemes	Analyze

Example	Form
System	Fulfilled
Information	Stayed
Survey	Migrated
Location	Adapted
Duration	Faced
Frequency	DisplayedFollow
Men	Find
Women	Make
Survey	Observe
Challenges	Settle
Group	Get to know
Number	Observe
Distance	Conduct
Purpose	Arrive
Questionnaire	Create
NGO	Deploy
Services	Access
Patterns	Identify
Policies	Order
Ratio	Provide

Adaptation	Offer
International level portal	Sent
Studies	Concludes
Domain	
Live database	
Underdeveloped regions	
Observation	
Time	
Lack of security	
Purpose	
Exclusion issues	
Talent	
Talent drain	
Functional requirements	
Non-functional requirements	
Government initiatives	
Regional development	
Job creation	
Needs	
Infrastructure planning	
Process	

Locality	
Opportunities	
System	
Scalability	
Reliability	
Usability	
Political	
Conflict	
Data	
Maintenance	
Religion	
Region	
Scope	
Project	
People	
Survey	
Issue	
Design	
Migration	
Reason	
People	

Project	
Drain	

List of selected nouns and verbs for the ER schema

Nouns	**Verbs**
Youngster	lives
Migration_Event	migrates
Region	applies
Employment	works
Education	participates
Climate	enrolls
Government_Policy	from
Health	located
Opportunities	present

List of the rejected nouns with reason

Noun	Reject Reason
People,Men , Women, Town, Location, Village, Locality, Talent, Population, Pollution, India, Culture, Ratio, Data, Needs, Services	General
Process, Work, Response, System, Researchers, Policymakers, Problem domain, Project, International level portal ,Questionnaire, Stakeholders, NGO, Functional and Non-Functional Requirements, Scalability, Reliability, Availability, Security, Usability, Performance	Irrelevant
Patterns, Movement, Time, Distance, Climate Change, Exclusion issues	Vague
Age, Gender, Occupation, Location, Frequency, Cultural Difference, Health Maintenance, Social Security, Salary, Talent drain	Attributes

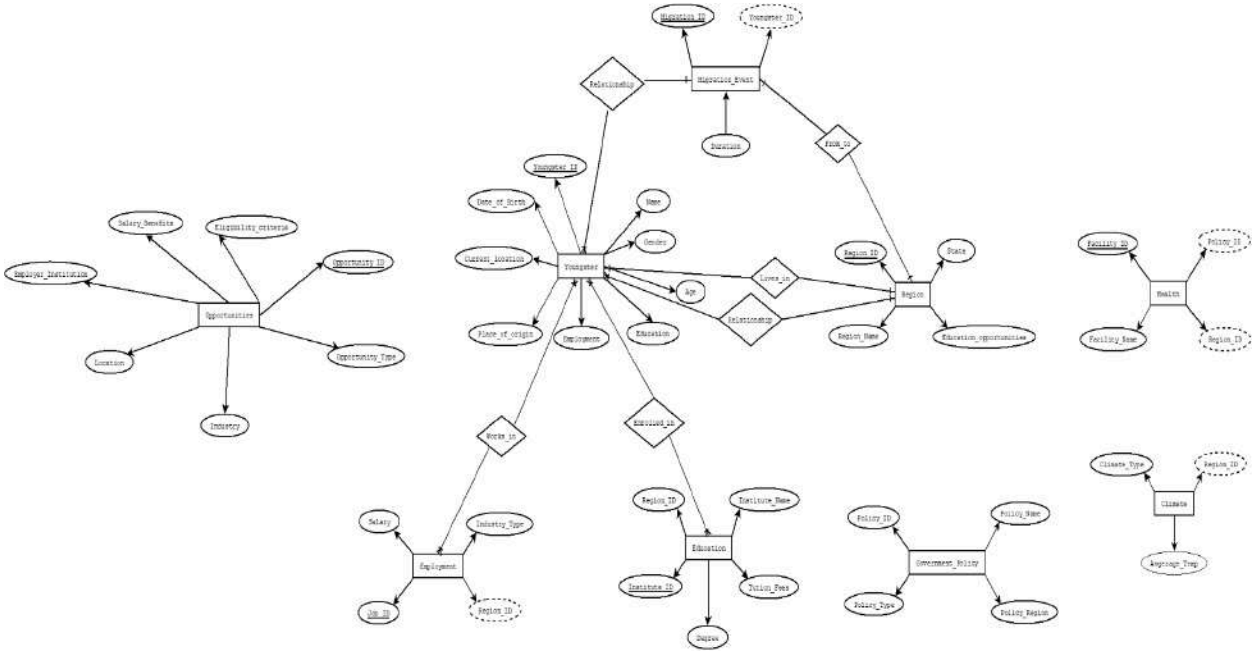
2.2 Schema and ER Diagram Design

Initial Schema

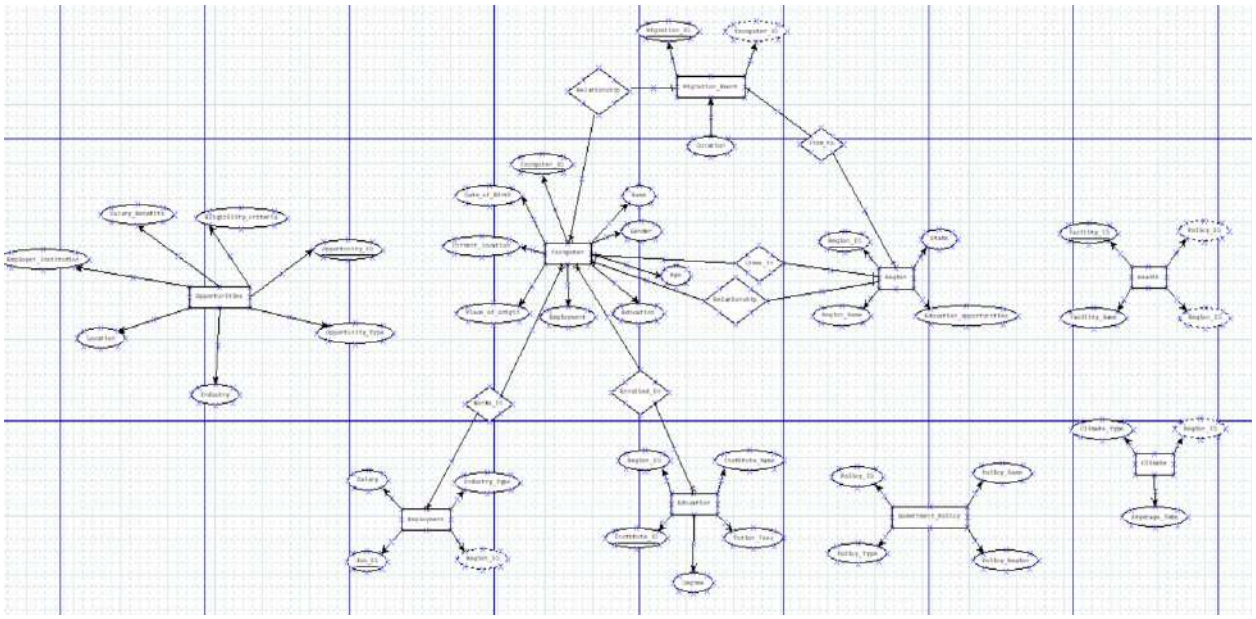
Candidate entity set	**Candidate attribute set**	**Candidate relationship set**
Youngster	**Youngster_ID**, name, gender, age, education, employment place_of_origin, Current_Location, Date_Of_Birth	Youngster **lives_in** Region(one to one), Youngster **migrates_to** Region (one to many), Youngster **participates** Migration_event(one to many), Youngster **works_in** Employment (many to many) Youngster **enrolled_in** Education (many to many)
Region	**Region_ID**, State, Region_Name Education_Opportunities	Region **has** Climate
Migration_Event	**Migration_ID** Youngster_ID Duration	Migration_Event **from_to** Region,
Employment	**JOB_ID** REGION_ID	Employment **related_to** Region

	Industry_Type Salary	
Education	**Institute_ID** Region_ID Institute_Name Tution_Fees Degree	Education **located_in** Region
Climate	**Climate_Type** Region_ID Avgerage_Temp	Climate **in** Region
Government_Policy	**Policy_ID** Policy_Name Policy_Type Policy_Region	Government_Policy **applies_to** Region
Health	**Facility_ID** Policy_ID Facility_Name Region_ID	Health **applies_to** Government_Policy
Opportunities	**Opportunity_Type**, Industry Location Employer_Institution Salary_Benifits Eligibility_Criteria	Opportunities **related_to** Youngster , Opportunities **present_in** Region

Initial ER Diagram



Dia snapshot



2.3 ER Diagram Improvement

2.3.1 Identify Entity Types

1) Weak Entities:

Schema	Attributes
Climate	**Policy_ID, Region_ID** Avgerage_Temp, Climate_Type
Health	**Policy_ID , Region_ID**, Facility_Name

Climate can be modeled as a weak entity, dependent on Region, because climate conditions are specific.
Health can be modeled as another weak entity as health facilities and conditions may be region-specific.

Climate and Health are identified as weak entities and are combined together to depend on the region and are used to influence the government policies.

2) Type of relationships:

Hierarchy: Opportunities may involve a hierarchical relationship like it can contain different types of opportunities of job opportunities and educational opportunities. It can be subclassed into the two opportunities but it will complicate the diagram.

Aggregation: Climate and Health are weak entities that depend on Region. Since Government_Policy applies to both Climate and Health in a region, we have decided to model it using aggregation. It allows combining Climate and Health as dependent entities on a region associating them with government policies.

Recursive Relationship: We tried to find a recursive relationship in the schema but we do not have one.

Simple Association Link:

1. **Youngster lives_in Region**: 1:1 simple association
2. **Youngster migrates_to Region**: 1 simple association
3. **Youngster participates_in Migration_Event**: 1 simple association
4. **Youngster works_in Employment**: M simple association
5. **Youngster enrolled_in Education**: M simple association
6. **Region has Climate/Health**: 1 simple association
7. **Government_Policy applies_to Climate/Health**: M simple association
8. **Opportunities related_to Youngster**: M simple association
9. **Opportunities present_in Region**: M simple association

2.3.2 Identify relationship types:

1) **Analysis of the diagram:**

Entity vs Attribute:
We modeled Education and Employment as different entities rather than the attributes of a Youngster. We did this because Education and Employment involve many-to-many relationships with multiple entities, so it's suitable to make them entities instead of attributes.

Entity vs Relationship:
Youngster lives_in Region is modeled as a relationship and not an attribute, to capture a dynamic and potentially changing relationship.

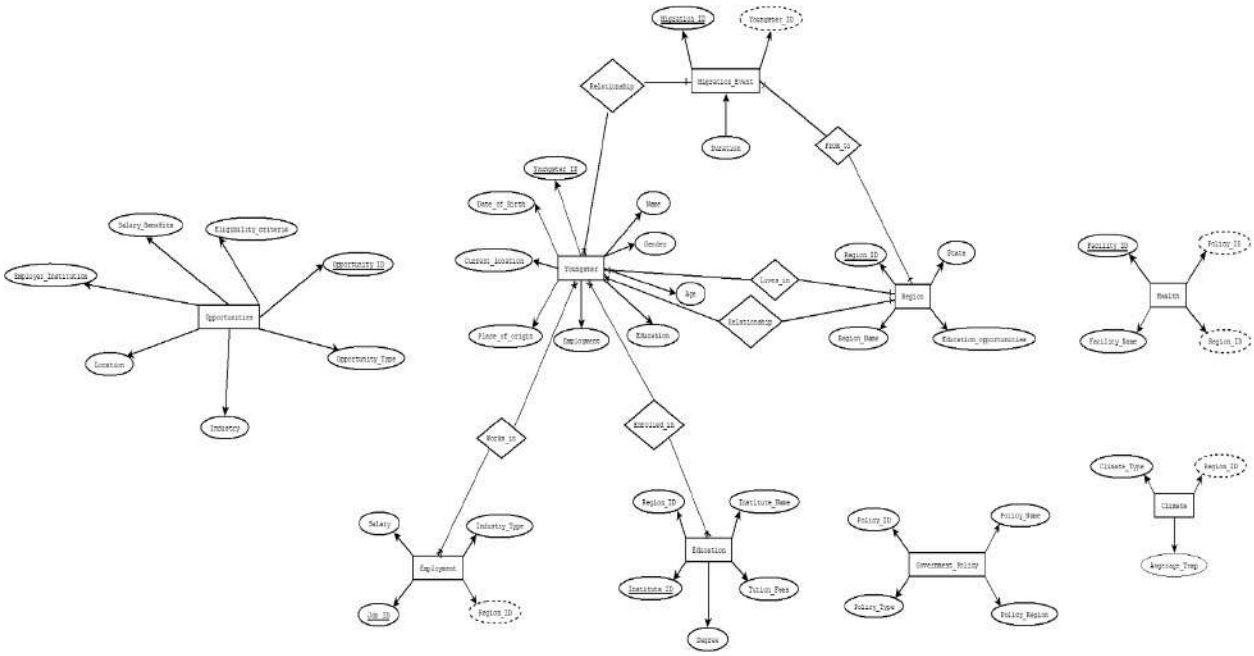
<u>Binary vs Ternary Relationships:</u>
Binary relationships
Youngster lives_in Region - 1:1
Youngster migrates_to Region - 1:M
Youngster works_in Employment - M:M

Potential Ternary Relationship
Youngster migrates_to Region during Migration_Event
We avoid using this ternary relationship by using Youngster participates_in Migraation_Event and Migration_event occurs_in Region

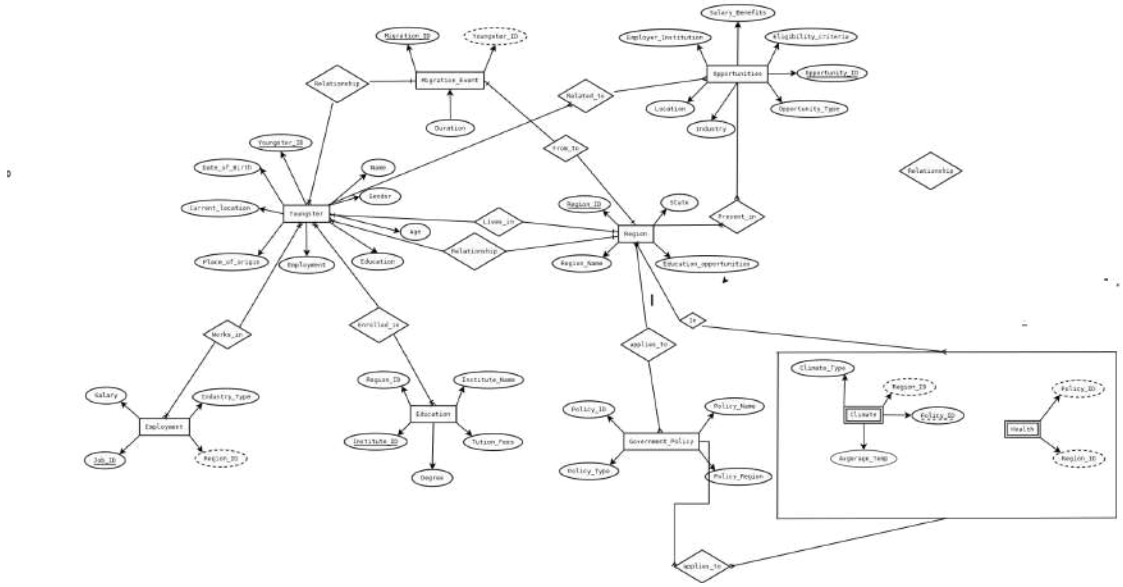
Aggregation vs Ternary Relationship:
Aggregation of weak entities of Climate and Health is better than creating a ternary relationship

2.3.3 ER Diagram Analysis

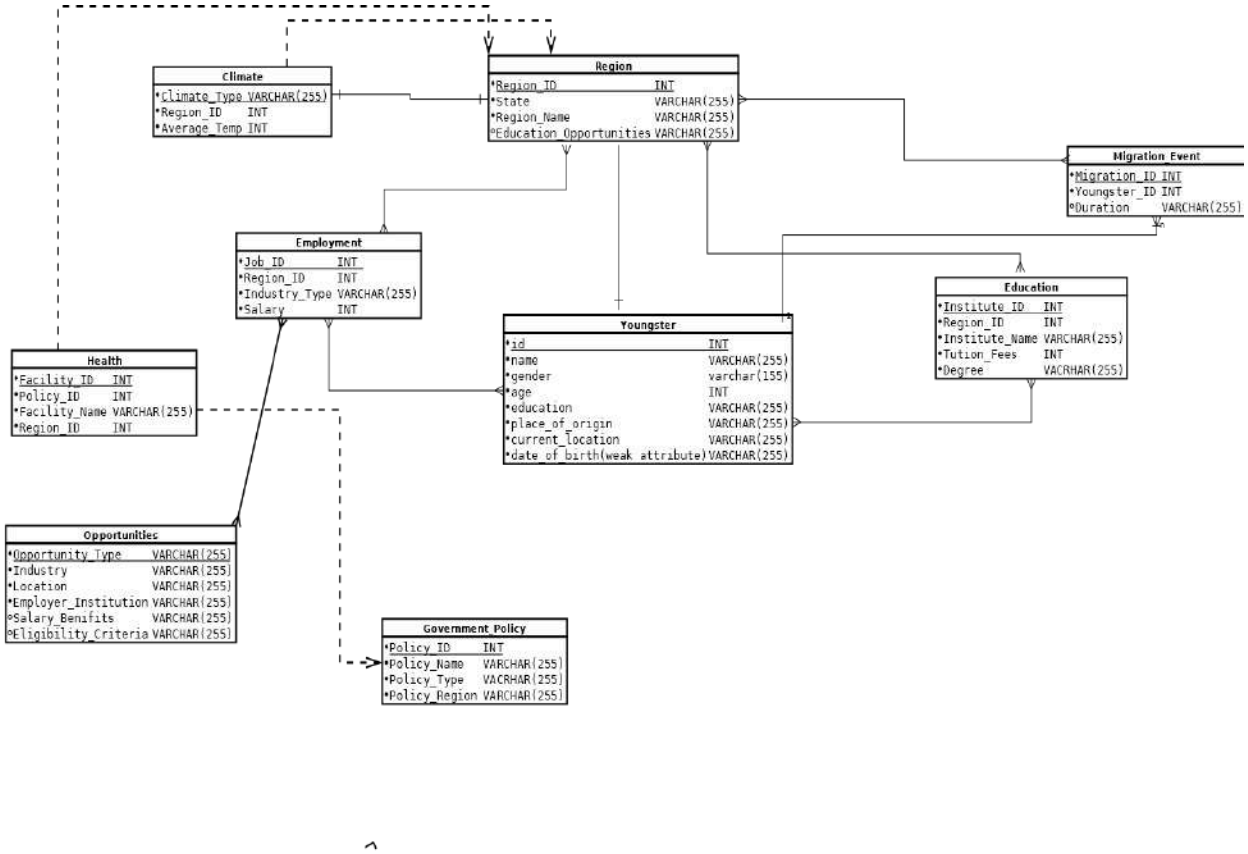
ER Version 1



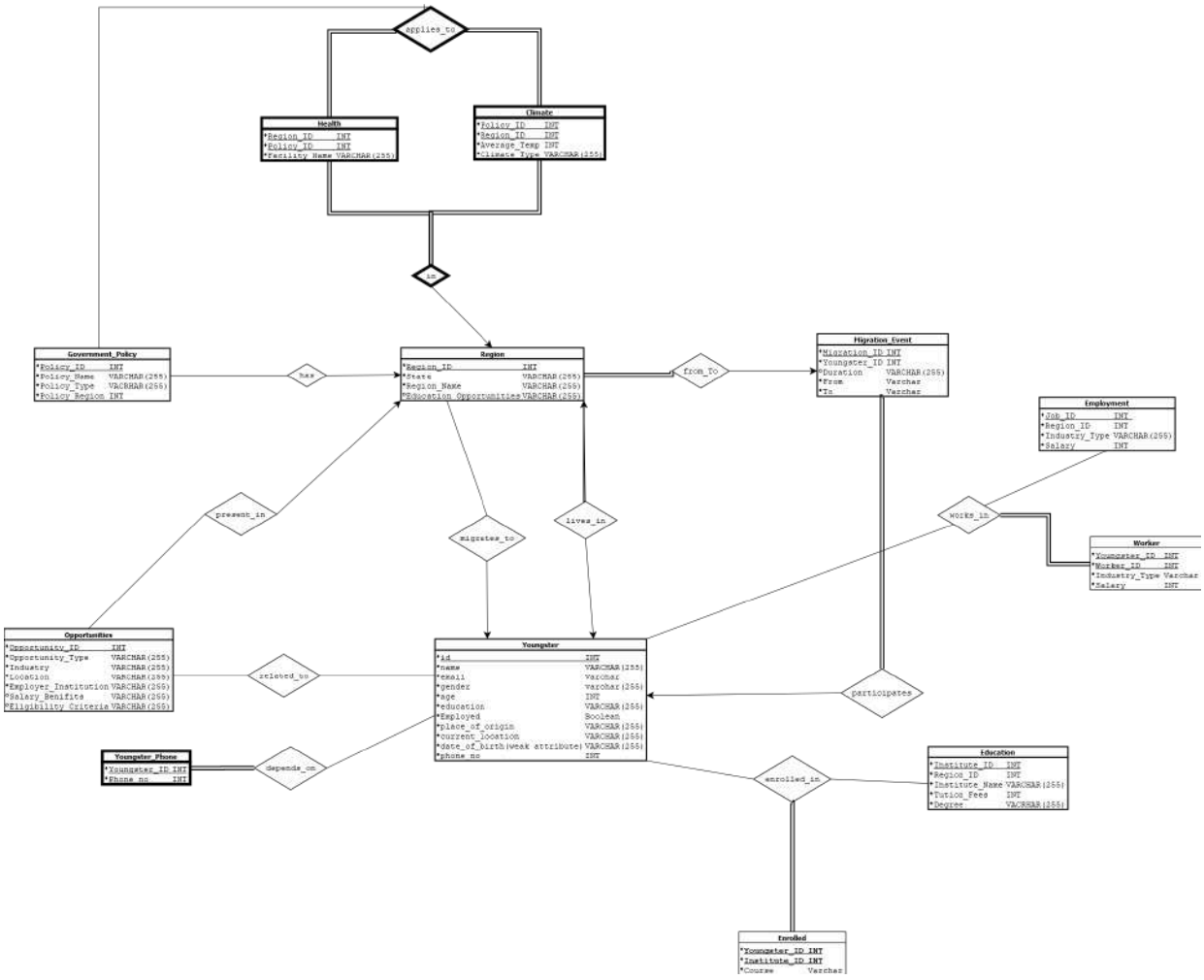
Updated ER Diagram (With aggregation changes) (ER Version 2)



Schema Diagram



2.4 Mapping ER Model to Relational Model



- Arrow and arrow refers to 1:1 relation
- Line and Line are N:M relation
- Arrow and line refers to 1:N relation
- Darker shades are weak objects
- Double lines represent total participation

Write down all the relations with the schema

1) Youngster (**Youngster_ID**, name,email, gender, age, education, employment place_of_origin, Current_Location, Date_Of_Birth, phone_no)

2) Region (**Region_ID**, State, Region_Type, Education_Opportunities)

3) Migration_Event (**Migration_ID** , Youngster_ID , Duration, From, To)

4) Employment (**JOB_ID**, Youngster_ID, Industry_Type, Salary)

5) Education (**Institute_ID**, Region_ID, Institute_Name Tution_Fees, Degree)

6) Climate (**Policy_ID, Region_ID,** Avgerage_Temp, Climate_Type)

7) Government_Policy (**Policy_ID**, Policy_Name, Policy_Type, Policy_Region)

8) Health (**Region_ID, Policy_ID**, Facility_Name)

9) Opportunities (**Opportunity_Type**, Industry, Location, Employer_Institution, Salary_Benifits, Eligibility_Criteria)

10) Worker (M to M relationship of Youngster and Employment) (**Youngster_ID, Job_ID** , Industry_Type, Salary)

11) Enrolled (M to M relationship of Youngster and Education) (**Youngster_ID, Institute_ID**, Course)

12) Youngster_Phone(Multivalued attribute)
(**Youngster_ID, Phone_no**)

2.5 Create DDL Scripts

i. Express following constraints (if applicable) in DDL:

2.5.1 Domain constraints

Youngster
Youngster_ID : Unique Identifier (positive integer)
Name: Varchar
Email: Varchar
Gender: Enum type (‘Male’, ‘Female’, ‘Non-Binary’)
Age: Integer
Education: Varchar
Employed: Boolean (Yes,No)
Place_of_Origin: Varchar
Current_Location: Varchar
Date_Of_Birth: Date
Phone_Number: INT

Region
Region_ID: Unique identifier
State: Varchar
Region_Type: Varchar (‘Urban’, ‘Rural’, ‘Town’)
Education_Opportunities: Varchar (‘High’, ‘Medium’, ‘Low’)

Migration_Event
Migration_ID: Unique identifier (positive integer)
Youngster_ID: Foreign key from Youngster(Youngster_ID)
Duration: Integer (Duration in months or years, should be positive)

From: Varchar
To: Varchar
Employment
Job_ID: Unique identifier (positive integer)
Youngster_ID: Foreign key from Youngster(Youngster_ID)
Industry_Type: Varchar
Salary: Integer

Education
Institute_ID: Unique identifier (Positive integer)
Region_ID: Foreign key from Region(Region_ID)
Institute_Name: Varchar
Tution_Fees: Integer
Degree: Varchar

Climate
Policy_ID: Foreign key from Government_Policy(Policy_ID)
Region_ID: Foreign key from Region(Region_ID)
Climate_Type: Varchar
Average_Temp: Integer

Health
Policy_ID: Foreign key from Government_Policy(Policy_ID)
Region_ID: Foreign key from Region(Region_ID)
Facility_Name: Varchar

Government_Policy
Policy_ID: Unique Identifier
Policy_Name: Varchar

Policy_Type: Varchar
Policy_Region: Foreign Key from Region(Region_ID)

Opportunities

Opportunity_ID: Unique Identifier
Opportunity_Type: Varchar
Industry: Varchar
Location: Varchar
Employer_Institution: Varchar
Salary_Benifits: Integer
Eligibility_Criteria: Varchar

Worker

Youngster_ID: Foreign key from Youngster (Youngster_ID)
Worker_ID: Foreign key from Employment (Job_ID)
Industry_Type: Varchar
Salary: INT

Enrolled

Youngster_ID:Foreign key from Youngster (Youngster_ID)
Institute_ID: Foreign key from Education (Institute_ID)
Course: Varchar

Youngster_Phone

Youngster_ID:Foreign key from Youngster (Youngster_ID)
Phone_no: INT

2.5.2 Key Constraints

Youngster
Primary key: Youngster_ID
No foreign keys

Region
Primary key: Region_ID
No foreign keys

Migration_Event
Primary key: Migration_ID
Foreign key: Youngster_ID references Youngster (Youngster_ID)

Employment
Primary key: Job_ID
Foreign key: Youngster_ID references Youngster(Youngster_ID)

Education
Primary key: Institute_ID
Foreign key: Youngster_ID references Youngster(Youngster_ID)

Climate
Primary key: (Policy_ID, Region_ID)
Foreign key: Policy_ID references Government_Policy (Policy_ ID), Region_ID references Region(Region_ID)

Health
Primary key: (Policy_ID, Region_ID)
Foreign key: Policy_ID references Government_Policy (Policy _ID), Region_ID references Region(Region_ID)

Government_Policy
Primary key: Policy_ID
Foreign key: Policy_Region references Region(Region_ID)

Opportunities
Primary key:Opportunity_ID

Worker
Primary key: (Youngster_ID, Job_ID)
Foreign key: Youngster_ID references Youngster (Youngster_ID) , Job_ID references Employment (Job_ID)

Enrolled
Primary key: (Youngster_ID, Institute_ID)
Foreign key: Youngster_ID references Youngster (Youngster_ID) , Institute_ID references Education (Institute_ID)

Youngster_Phone
Primary key: (Youngster_ID, Phone_no)
Foreign key: Youngster_ID references Youngster (Youngster_ID)

Chapter 3: Normalization of Database

3.1 Normalization and Schema Refinement

3.1.1 Original Design of Database

List all relations and schemas with all details

1) Youngster (**Youngster_ID**, name,email, gender, age, education, employment place_of_origin, Current_Location, Date_Of_Birth)

2) Region (**Region_ID**, State, Region_Type, Education_Opportunities)

3) Migration_Event (**Migration_ID** , Youngster_ID , Duration, From, To)

4) Employment (**JOB_ID**, Youngster_ID, Industry_Type, Salary)

5) Education (**Institute_ID**, Region_ID, Institute_Name Tution_Fees, Degree)

6) Climate (**Policy_ID, Region_ID,** Avgerage_Temp, Climate_Type)

7) Government_Policy (**Policy_ID**, Policy_Name, Policy_Type, Policy_Region)

8) Health (**Region_ID, Policy_ID**, Facility_Name)

9) Opportunities (**Opportunity_ID**, Opportunity_Type, Industry, Location, Employer_Institution, Salary_Benifits, Eligibility_Criteria)

10) Worker (M to M relationship of Youngster and Employment) (**Youngster_ID, Job_ID**)

11) Enrolled (M to M relationship of Youngster and Education) (**Youngster_ID, Institute_ID**, Course)

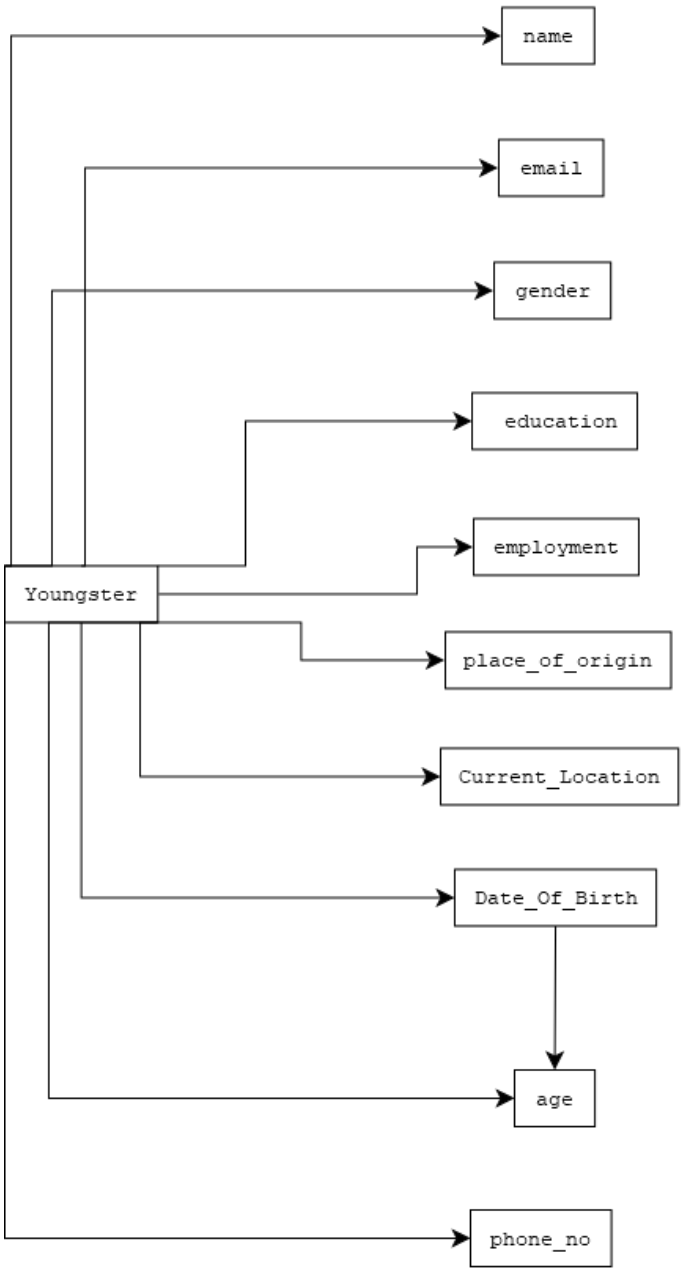
12) Youngster_Phone(Multivalued attribute) (**Youngster_ID, Phone_no**)

3.1.2 Dependency Analysis

Identify and list all types of dependencies (PK, FK, Functional Dependencies) for each relation

1) **Youngster Table**
   PK: Youngster_ID
   Attributes: name,email, gender, age, education, employment place_of_origin, Current_Location, Date_Of_Birth, phone_no
   Functional dependencies:
   Youngster_ID → name,email, gender, age, education, employment place_of_origin, Current_Location, Date_Of_Birth, phone_no
   Derived Dependency:
   Date_of_birth → Age

Reason: The attributes are dependent on the primary key and any changes in that will affect the other attributes of the table



Dealing with them: As we can calculate age using date of birth we can remove the age attribute and calculate age using SQL queries whenever needed

2) **Region Table**

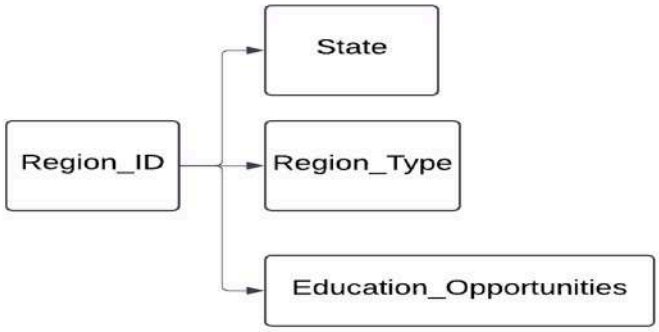
PK: Region_ID

Attributes: State, Region_Type, Education_Opportunities

Functional dependencies:

Region_ID → State, Region_Type, Education_Opportunities

Reason: The attributes are dependent on the primary key and any changes in that will affect the other attributes of the table



3) **Migration_Event Table**

PK: Migration_ID

FK: Youngster_ID

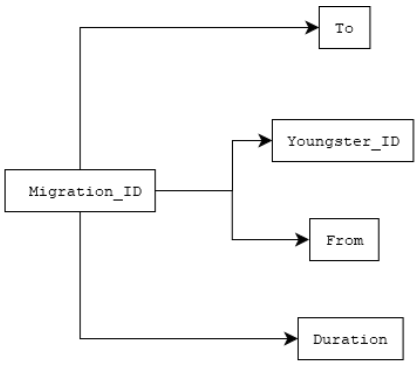
Attributes: Duration, From, To

Functional dependencies:

Migration_ID → Duration, From, To

Youngster_ID → Duration, From, To

Reason: The attributes are dependent on the PK,FK and any changes in that will affect the other attributes of the table



4) Employment

PK: JOB_ID

FK: Youngster_ID

Attributes: Industry_Type, Salary

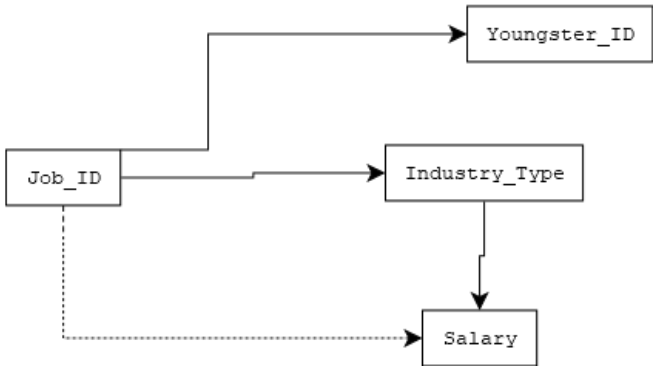
Functional dependencies:

Job_ID → Industry_Type

Youngster_ID → Industry_Type

Industry_Type → Salary

Reason: The attributes are dependent on the PK,FK and any changes in that will affect the other attributes of the table



Dealing with dependencies: As there is a transitive dependency of salary on Job_ID it creates confusion so we will store it in a Worker table table with all details about it there.

5) Education

PK: Institute_ID

FK: Region_ID

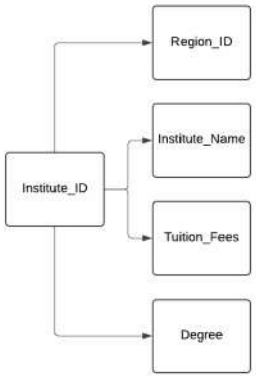
Attributes: Institute_Name Tution_Fees, Degree

Functional dependencies:

Institute_ID —> Institute_Name Tution_Fees, Degree

Region_ID —> Institute_Name Tution_Fees, Degree

Reason: The attributes are dependent on the PK,FK and any changes in that will affect the other attributes of the table



6) Climate

PK: (Policy_ID, Region_ID)

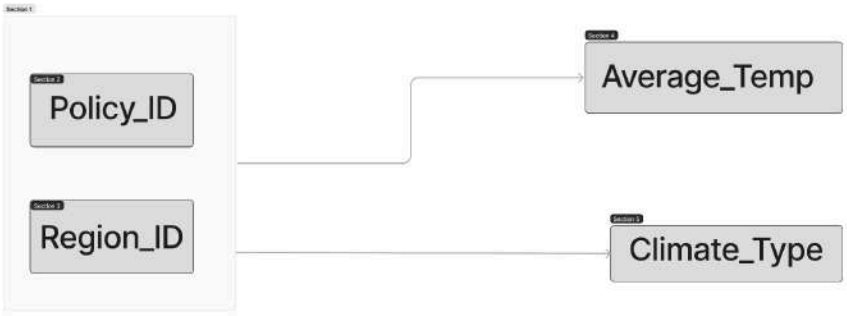
FK: Policy_ID, Region_ID

Attributes: Avgerage_Temp, Climate_Type

Functional dependencies:

(Policy_ID, Region_ID) —> Avgerage_Temp, Climate_Type

Reason: The attributes are dependent on the PK,FK and any changes in that will affect the other attributes of the table



7) Government_Policy

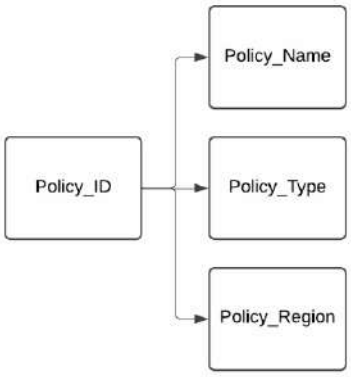
PK: Policy_ID

Attributes: Policy_Name, Policy_Type, Policy_Region

Functional dependencies:

Policy_ID —> Policy_Name, Policy_Type, Policy_Region

Reason: The attributes are dependent on the primary key and any changes in that will affect the other attributes of the table



8) Health

PK: (Region_ID, Policy_ID)

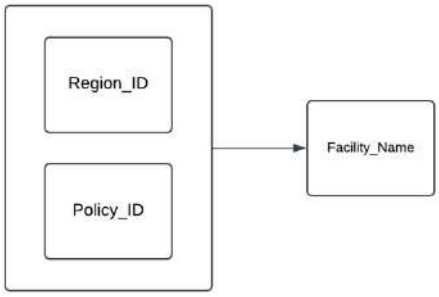
FK: Region_ID, Policy_ID

Attributes: Facility_Name

Functional dependencies:

(Region_ID, Policy_ID) —> Facility_Name

Reason: The attributes are dependent on the PK,FK and any changes in that will affect the other attributes of the table



9) Opportunities

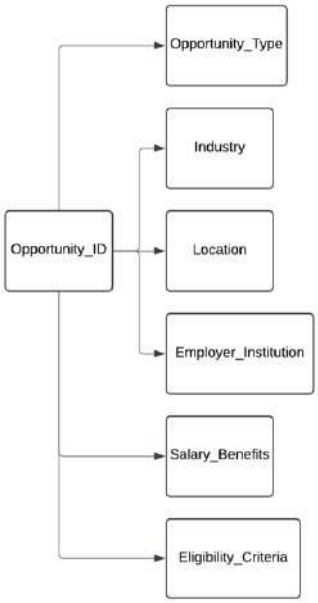
PK: Opportunity_ID

Attributes:Opportunity_Type, Industry, Location, Employer_Institution, Salary_Benifits, Eligibility_Criteria

Functional dependencies:

Opportunity_ID —> Opportunity_Type, Industry, Location, Employer_Institution, Salary_Benifits, Eligibility_Criteria

Reason: The attributes are dependent on the primary key and any changes in that will affect the other attributes of the table



10) Worker

PK: (Youngster_ID, Job_ID)

FK: Job_ID, Youngste_IDr

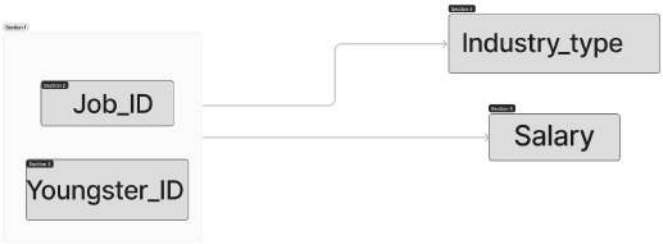
Attributes: Industry_Type, Salary

Functional dependencies:

Youngster_ID —> Industry_Type, Salary

Job_ID —> Industry_Type, Salary

Reason: The attributes are dependent on the PK, FK and any changes in that will affect the other attributes of the table



11) Enrolled

PK: (Youngster_ID, Institute_ID)

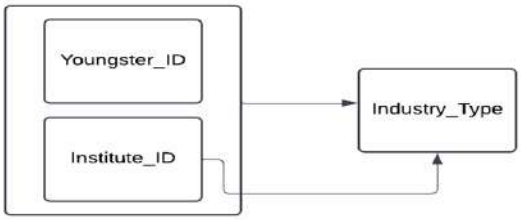
Attribute: Course

Functional dependencies:

Youngster_ID —> Course

Institute_ID —> Course

Reason: The attributes are dependent on the primary key and foreign key and any changes in that will affect the other attributes of the table

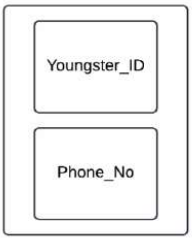


12) Youngster_Phone(Multivalued attribute)

PK: (Youngster_ID, Phone_no)

Functional dependencies: None

Reason: No other attributes



3.2 Redundancy and Anomalies Documentation

3.2.1 Redundancies

1) <u>Youngster Table</u>

- Current_Location and Place_Of_Origin might overlap with data in Region and Migration_Event

2) <u>Employment Table</u>

- Industry_Type and Salary are also listed in the Worker table, leading to duplication

3) <u>Education Table</u>

- Institute_Name and Tution_Fees might be repeated if multiple youngsters enroll in the same institute.

4) <u>Climate Table</u>

- Region_ID is already present in the Region table.
- If Climate_Type or Average_Temp applies at the region level, it might be redundant to repeat it here.

5) <u>Opportunities Table</u>

- Location might overlap with Region_ID, and Employer_Institution might have repeated data if multiple opportunities are offered by the same employer.

6) <u>Health Table</u>

- Facility_Name could lead to redundancy if the same facility exists in multiple regions.

3.2.2 Anomalies

1) Youngster :

Update: If you change youngster’s phone number you need to edit the whole row

Delete: Since Youngster's phone number is stored in another table updating the number you will have to update the whole row

2) Employment:

Update: There could be many opportunities with the same name so updating them would also update other attributes

Delete: There could be many opportunities with the same name so deleting them would also delete other attributes

3) Education:

Update: If we change tuition fees of a institute where multiple youngster’s are enrolled we will have to make relevant changes in all the tables

Delete: Deleting an institute will result in its history with the youngster’s being deleted

Insert: You can't insert a new record if you don't have all the details (tution_fees, degree)

4) Health:

Update: Facilities having same name would require changes across multiple rows

Delete: Facilities having same name would require deletion across multiple rows

Insert: Facilities having same name would require insertion across multiple rows

5) Opportunities:

Update: Whenever we update employer institution it updates all other attributes

Delete: Whenever we delete employer institution it delete all other attributes

3.3 Normalization Process

3.3.1 1NF

Normalize the database up to 1NF (scalar values)

Youngster Table:

- Move Phone_no to a separate table (Youngster_Phone) to handle the multi-valued attribute and create a 1 relationship.
- Consider removing Current_Location and handling it through the Migration_Event table to track movement more efficiently.

Education Table:

- Normalize Institute_Name and Tuition_Fees by creating a separate Institute table (e.g., Institute(Institution_ID, Name, Tuition_Fees)), which can then be linked to the Region table.

Opportunities Table:

- Normalize Employer_Institution by creating a separate Employer table (e.g., Employer(Employer_ID, Name)), linking opportunities to this new entity.

Health Table:

- Normalize the Facility_Name into a separate Health_Facility table (e.g., Health_Facility(Facility_ID, Name)), which can be referenced by Region and Policy.

3.3.2 2NF

Problems encountered:

1) Multiple occurrence and irrelevance of Institute name and Tuition fees in the Education table.
2) Redundancy in the employer_Institution attribute of the Opportunities table.
3) Redundancy of Facility_Name in the Health table

However the tables are already in 2NF but we need to remove the redundancies that have occurred are to be removed.

Schema after normalization 2NF

1) Youngster (**Youngster_ID**, name,email, gender, education, employment place_of_origin, Date_Of_Birth,)

2) Region (**Region_ID**, State, Region_Type, Education_Opportunities)

3) Migration_Event (**Migration_ID** , Youngster_ID , Duration, From, To)

4) Employment (**JOB_ID**, Youngster_ID, Industry_Type, Salary)

5) Education (**Institute_ID**, Region_ID, Degree)

6) Climate (**Policy_ID, Region_ID**, Avgerage_Temp, Climate_Type)

7) Government_Policy (**Policy_ID**, Policy_Name, Policy_Type, Policy_Region)

8) Health (**Region_ID, Policy_ID**, **Facility_ID**)

9) Opportunities (**Opportunity_ID**, Opportunity_Type, Industry, Location, Employer_ID, Salary_Benifits, Eligibility_Criteria)

10) Worker (M to M relationship of Youngster and Employment) (**Youngster_ID, Job_ID** , Industry_Type, Salary)

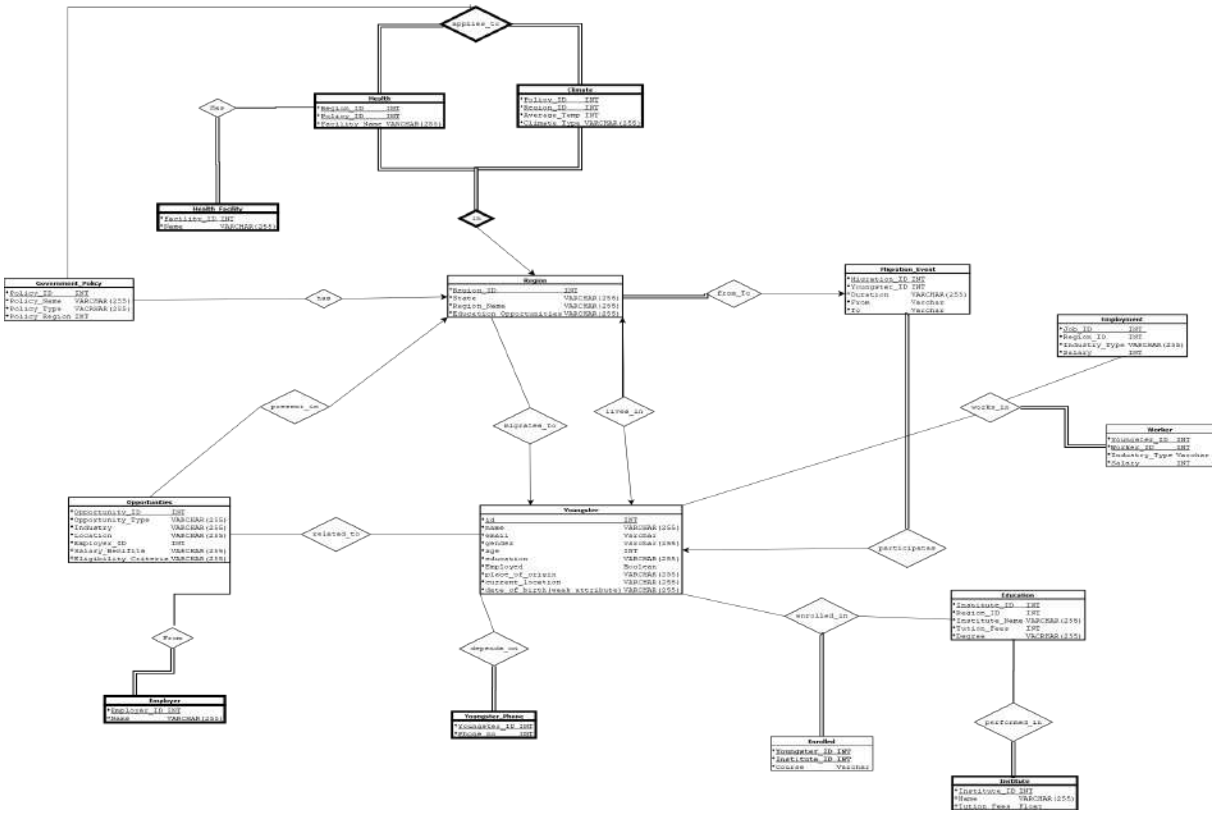
11) Enrolled (M to M relationship of Youngster and Education) (**Youngster_ID, Institute_ID**, Course)

12) Youngster_Phone(Multivalued attribute) (**Youngster_ID**, Phone_no)

13) Institute(**Institution_ID**, Name, Tuition_Fees)

14) Employer(**Employer_ID**, Name)

15) Health_Facility(**Facility_ID**, Name)



The changes made in 2NF were:

1. Removal of Institute name and tuition fees from Education table and creating a new table of Institute
2. Replacing the Employer_Institution in Opportunities table with Employer_ID and creating a separate table of Employer.
3. Creating a Health_Facility table and removing the facility name from the Health table.

3.3.3 3NF

Problems encountered:

1) Irrelevant and redundant Industry to make it into industry table

However the tables are already in 2NF but we need to remove the redundancies that have occurred are to be removed.

Schema after normalization 3NF

1) Youngster (**Youngster_ID**, name,email, gender, education, employment place_of_origin, Date_Of_Birth,)

2) Region (**Region_ID**, State, Region_Type, Education_Opportunities)

3) Migration_Event (**Migration_ID** , Youngster_ID , Duration, From, To)

4) Employment (**JOB_ID**, Youngster_ID, Industry_Type, Salary)

5) Education (**Institute_ID**, Region_ID, Degree)

6) Climate (**Policy_ID, Region_ID**, Avgerage_Temp, Climate_Type)

7) Government_Policy (**Policy_ID**, Policy_Name, Policy_Type, Policy_Region)

8) Health (**Region_ID, Policy_ID**, **Facility_ID**)

9) Opportunities (**Opportunity_ID**, Opportunity_Type, Location, Employer_ID, Salary_Benifits, Eligibility_Criteria)

10) Worker (M to M relationship of Youngster and Employment) (**Youngster_ID, Job_ID** , Industry_Type, Salary)

11) Enrolled (M to M relationship of Youngster and Education) (**Youngster_ID, Institute_ID**, Course)

12) Youngster_Phone(Multivalued attribute) (**Youngster_ID**, Phone_no)

13) Institute(**Institution_ID**, Name, Tuition_Fees)

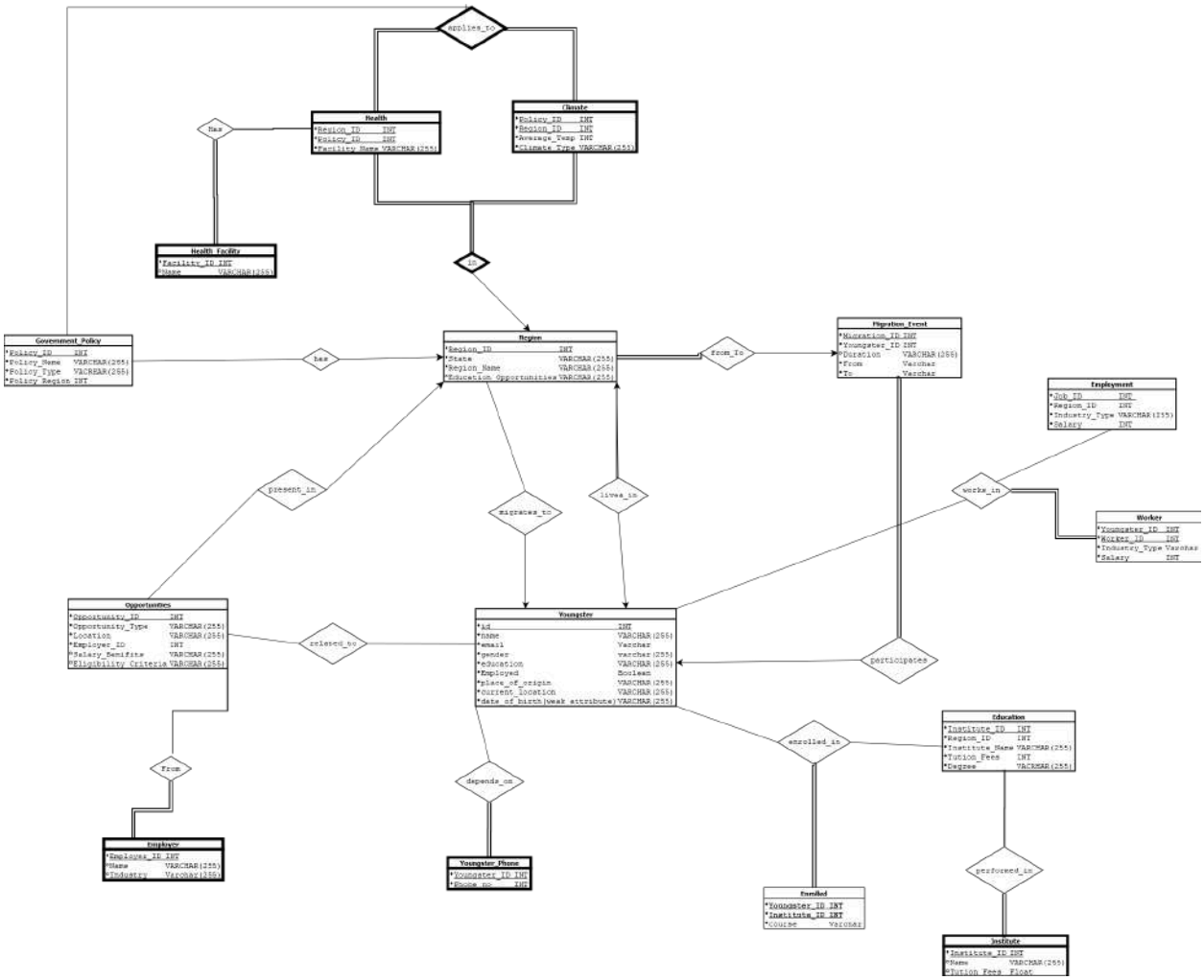
14) Employer(**Employer_ID**, Location, Salary_Benifits)

15) Health_Facility(**Facility_ID**, Name)

16) Industry (**Industry_Type**, Salary)

Changes made in 3NF were:

1. Normalized Industry into the Industry table, removing it from Opportunities.

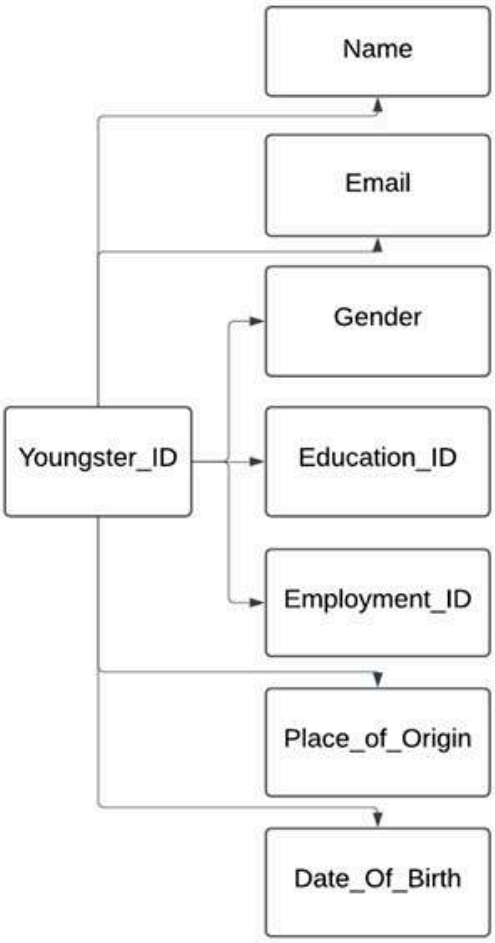


- After all the normalization we decided to make some changes to the schema to make it more understandable and better with adding some of the attributes and also checked everything for BCNF

Schema after normalization BCNF and added some attributes to tables that looked empty

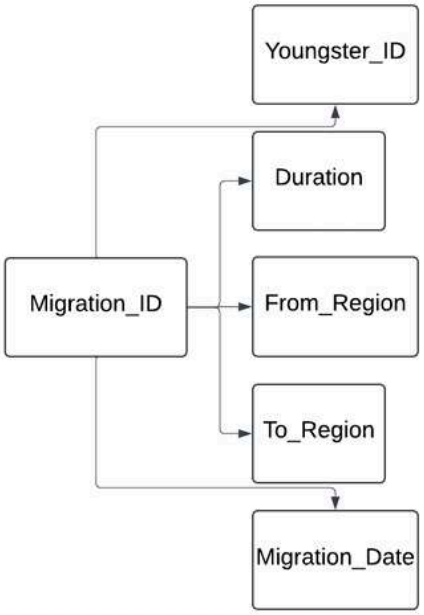
1) Youngster (***Youngster_ID***, name,email, gender, Education_ID, Employment_ID, place_of_origin, Date_Of_Birth)

1. Youngster_ID → Name, Email, Gender, Education_ID, Employment_ID, Place_of_Origin, Date_Of_Birth



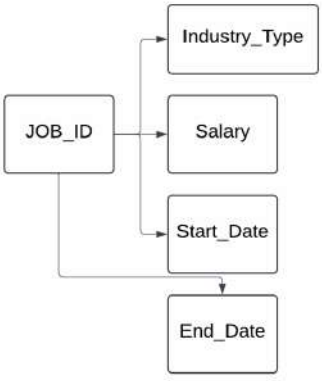
2) Migration_Event (***Migration_ID*** , Youngster_ID , Duration, From_Region, To_Region, Migration_Date)

3. Migration_ID → Youngster_ID, Duration, From_Region, To_Region, Migration_Date

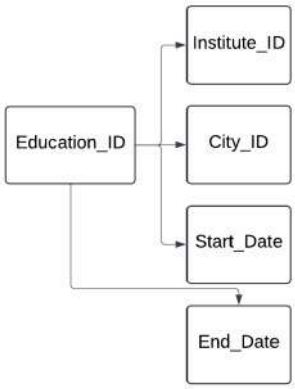


3) Employment (***JOB_ID***, Industry_Type, Salary, Start_Date, End_Date)

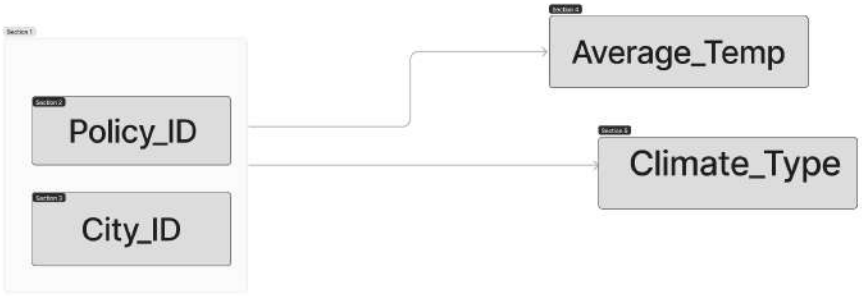
4. JOB_ID → Industry_Type, Salary, Start_Date, End_Date



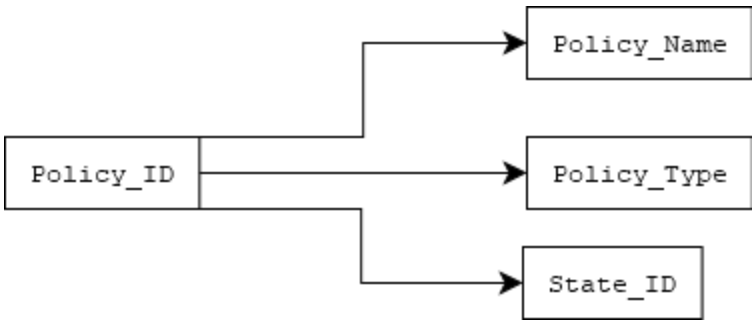
4) Education (***Education_ID*** ,Institute_ID , City_ID, Start_Date, End_Date)



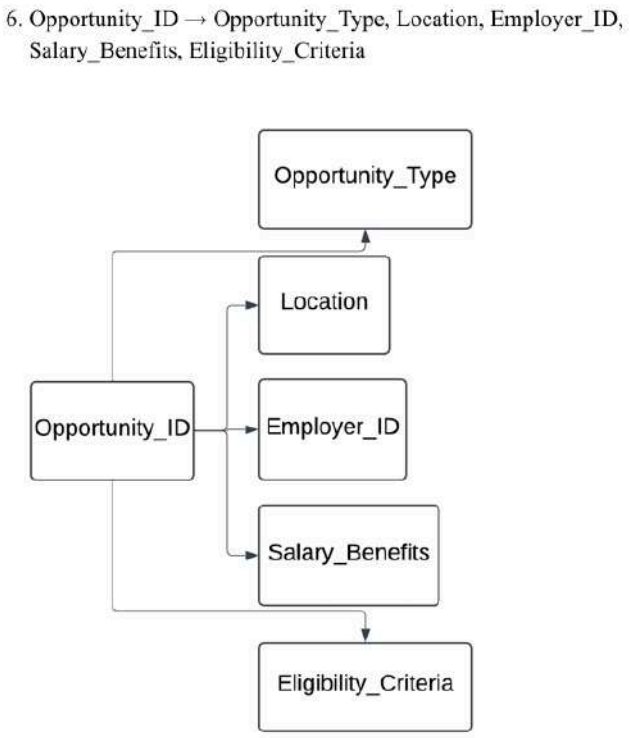
5) Climate (***City_ID, Policy_ID,*** Avgerage_Temp, Climate_Type)



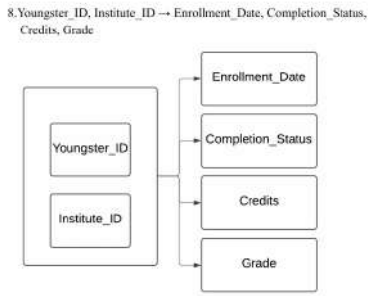
6) Government_Policy (***Policy_ID***, Policy_Name, Policy_Type, State_ID)



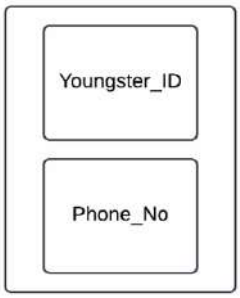
7) Opportunities (***Opportunity_ID***, Opportunity_Type, Location, Employer_ID, Salary_Benifits, Eligibility_Criteria)



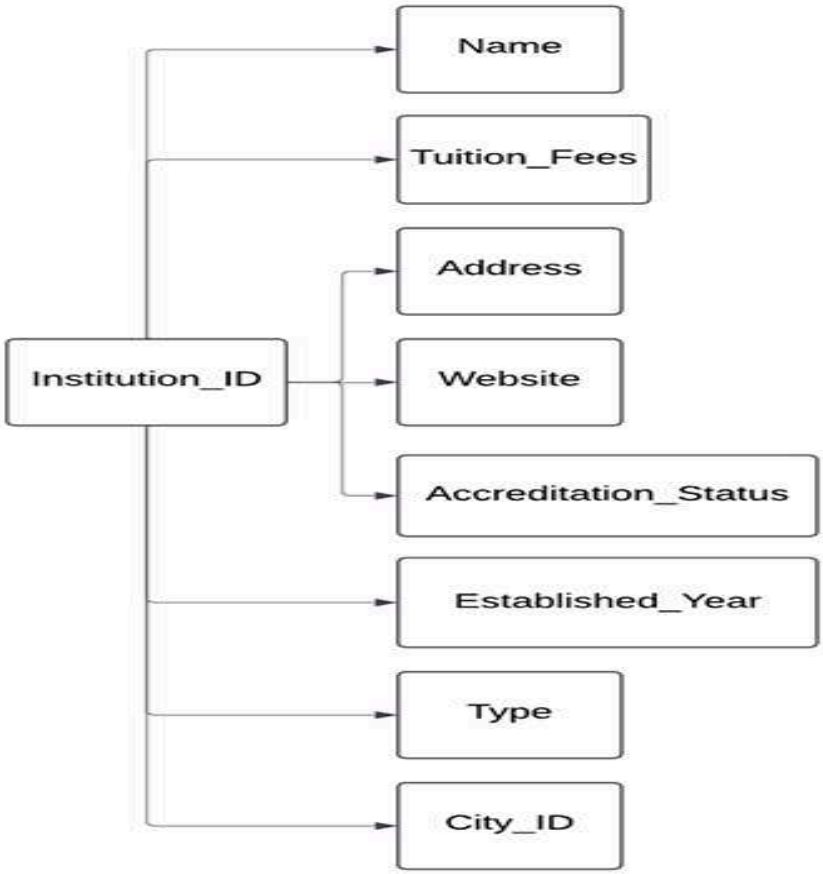
8) Enrolled (M to M relationship of Youngster and Education) Enrolled (***Youngster_ID, Institute_ID***, Enrollment_Date, Completion_Status, Credits, Grade)



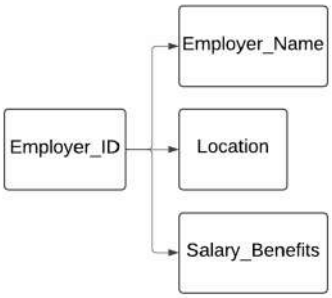
9) Youngster_Phone(Multivalued attribute) (***Youngster_ID***, Phone_no)



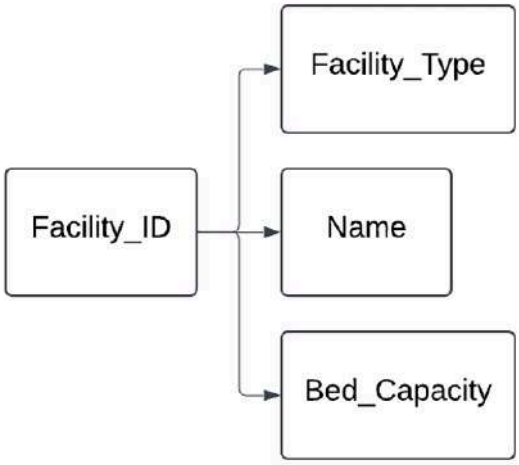
10) Institute(***Institution_ID***, Name, Tuition_Fees, Address, Website, Accreditation_Status, Established Year, Type, City_ID)



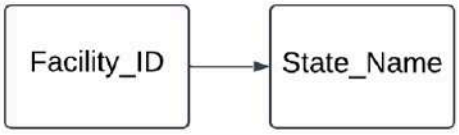
11) Employer(***Employer_ID***, Emplyer_Name, Location, Salary_Benifits)



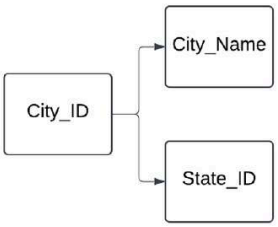
12) Health_Facility(***Facility_ID***, Name, Facility_Type, Bed_Capacity)



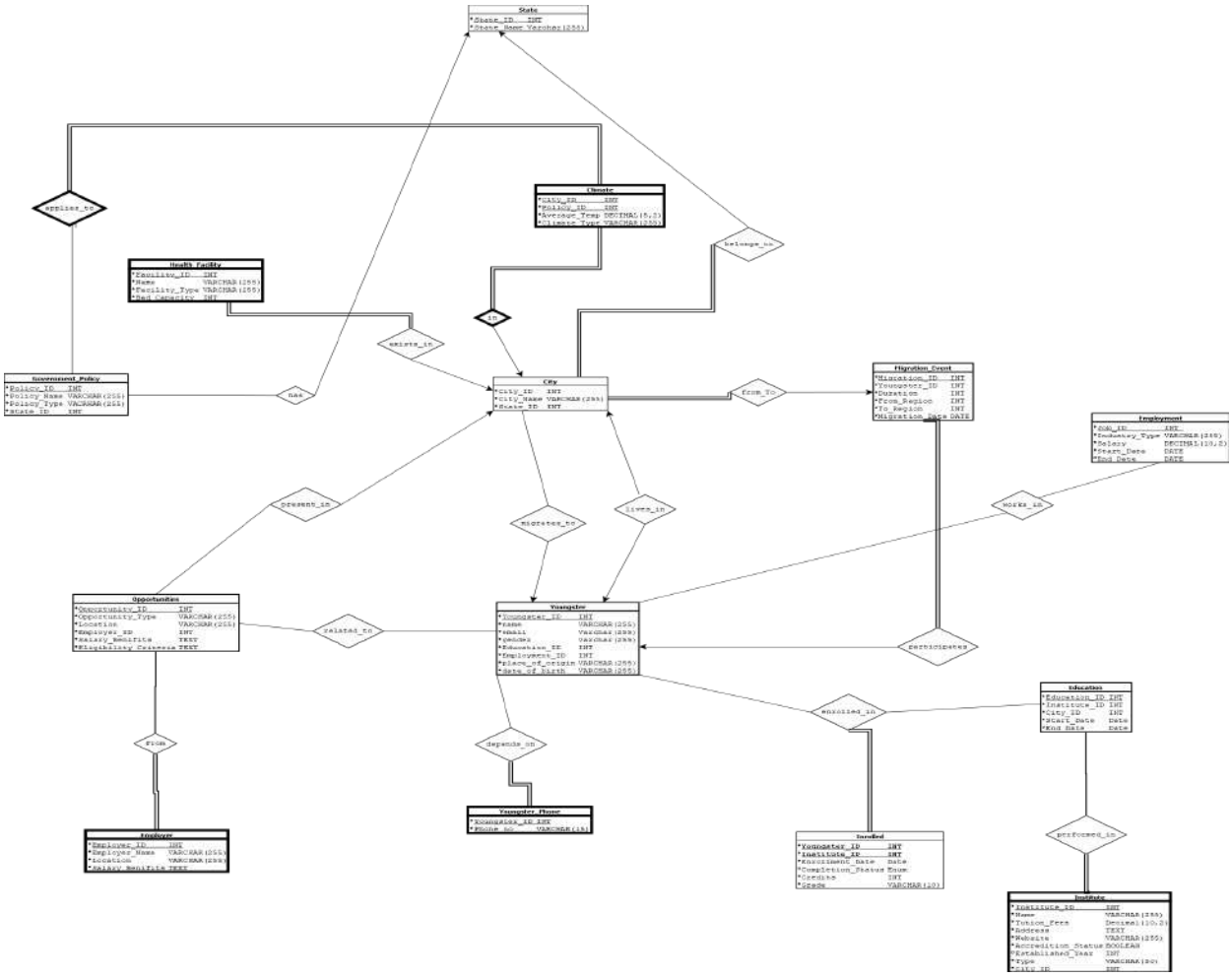
13) State (***State_ID***, State_Name)



14) City (***City_ID***, City_Name, State_ID)



Relational Diagram



Changes:

1. Added Education_ID and Employment_ID instead of education and employment for more clarity.

2. Removed Region table and added State and City table to be more clarified and all the relationships related to region were mapped to City table and the Government policy table relates to the State table.

3. Changed from and To to from_Region and To_Region for more clarification and added an attribute of migration_date to check the dates of migration.

4. Removed Youngster_ID from the table Employment as it was creating unnecessary redundancies and added start_date and end_date attributes to the table.

5. Created Education_ID for Education table and added all the important information of institute and degree to the Enrolled table and removed Region_ID foreign key, added City_ID as foreign key, and gave an Institute_ID foreign key to this table.

6. Removed Region_ID and added City_ID, City_ID and Policy_ID make a primary key keeping others the same.

7. Added State_ID to the government_Policy table to map it to the states in which they belong from the State table.

8. Removed the Health table as we already have the Health_Facility table as it was unnecessary and was creating redundancies.

9. Removed the Worker table as it was unnecessary and was causing redundancies.

10. Removed course attribute as it was causing redundancies and harming the entire schema and added all course detail attributes to the table of Enrollment_Date, Completion_Status, Credits, Grade.

11. Added some more attributes to the institute table to make it more informative of Address, Website, Accreditation_Status, Established Year, Type City_ID is foreign key that maps the city of the institute.

12. Added Employer_Name to the Employer_Table to make it informative.

13. Added Facility_Type, Bed_Capacity attributes to the Health_Facility table to make it more informative.

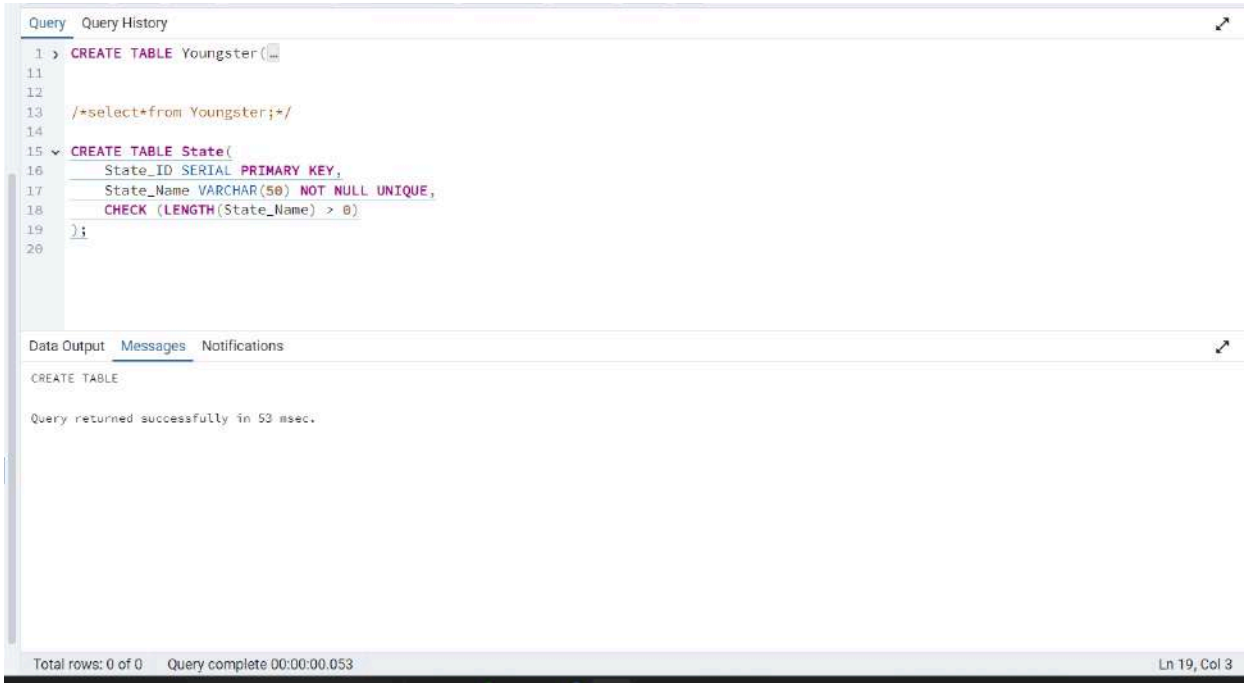
14. Removed the industry table as it was unnecessary and caused redundancies.

Chapter 4: Implementation of Database

4.1 Revised DDL Scripts

CREATE TABLE STATEMENTS

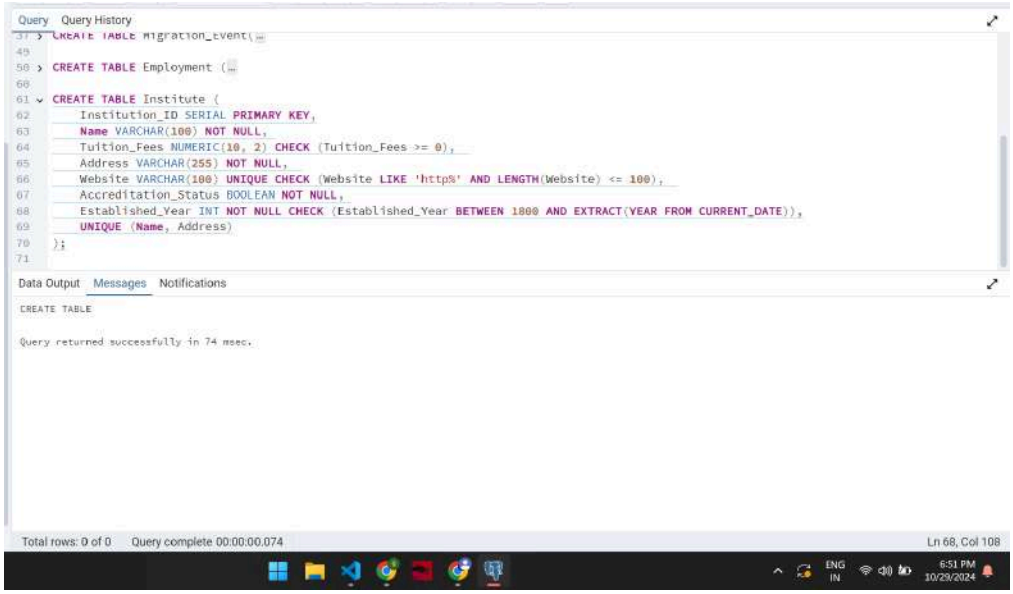
CREATE TABLE State (
State_ID SERIAL PRIMARY KEY,
State_Name VARCHAR(100) NOT NULL UNIQUE
);



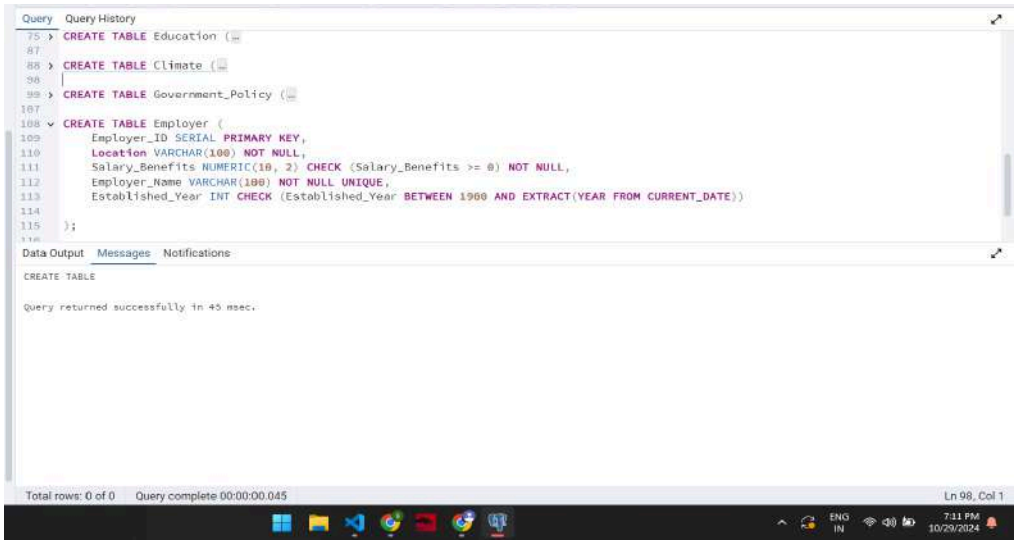
CREATE TABLE City (
City_ID SERIAL PRIMARY KEY,
City_Name VARCHAR(100) NOT NULL,
State_ID INT NOT NULL,
FOREIGN KEY (State_ID) REFERENCES State(State_ID) ON DELETE CASCADE
);

CREATE TABLE Institute (
Institution_ID SERIAL PRIMARY KEY,
Name VARCHAR(255) NOT NULL,
Tuition_Fees DECIMAL(10, 2) NOT NULL CHECK (Tuition_Fees >= 0),
Address TEXT NOT NULL,
Website VARCHAR(255),
Accreditation_Status BOOLEAN NOT NULL,
Established_Year INT CHECK (Established_Year > 0),
Type VARCHAR(50),
City_ID INT NOT NULL,

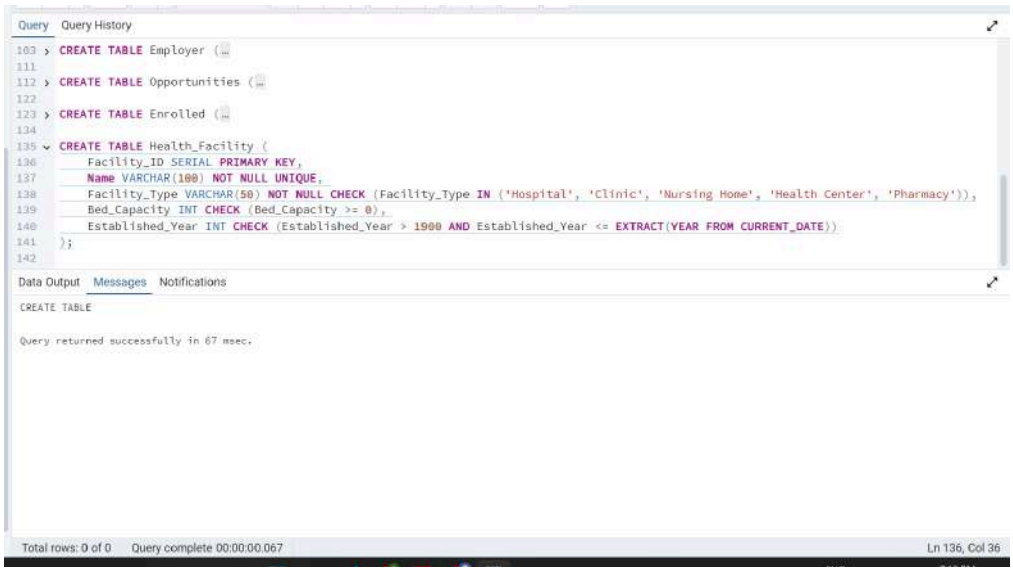
FOREIGN KEY (City_ID) REFERENCES State(City_ID)
ON DELETE CASCADE);



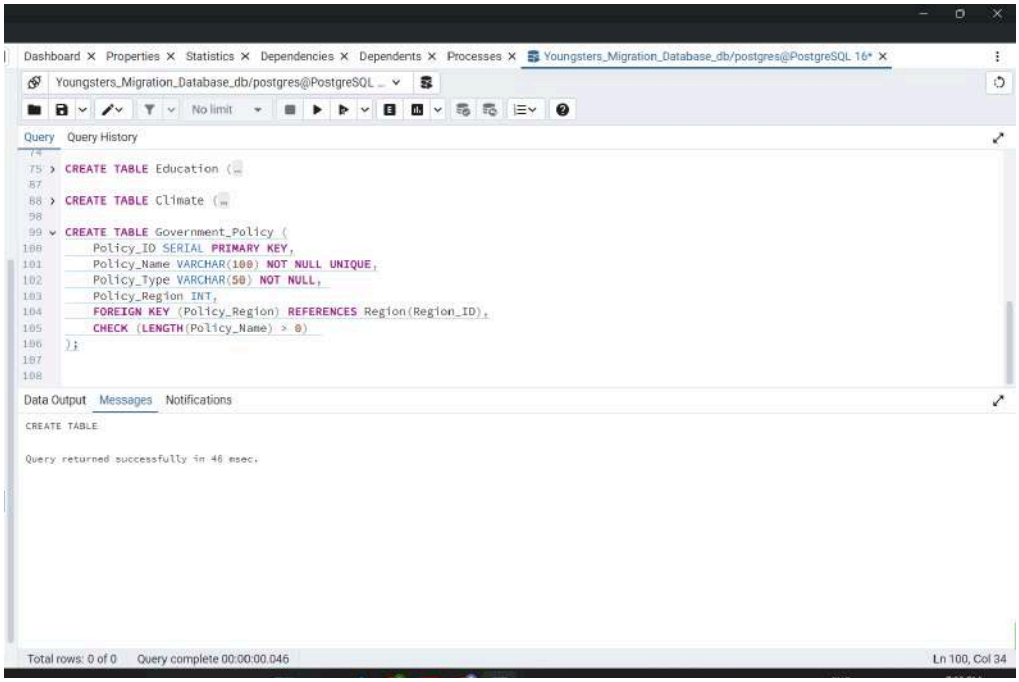
CREATE TABLE Employer (
Employer_ID SERIAL PRIMARY KEY,
Employer_Name VARCHAR(255) NOT NULL,
Location VARCHAR(255) NOT NULL,
Salary_Benefits TEXT NOT NULL
);



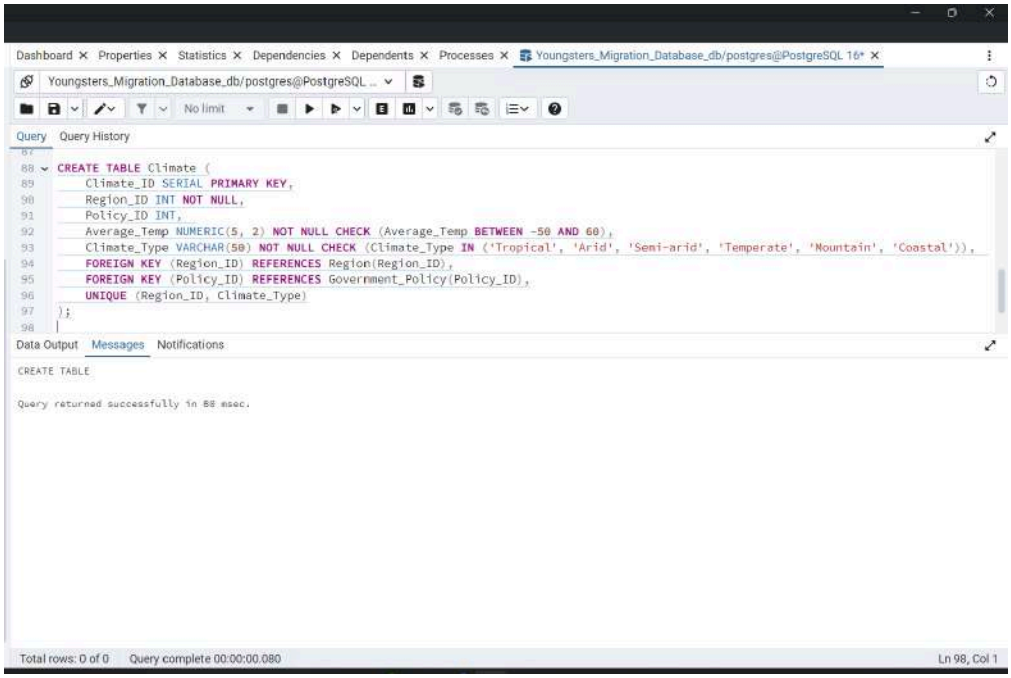
CREATE TABLE Health_Facility (
Facility_ID SERIAL PRIMARY KEY,
Name VARCHAR(255) NOT NULL,
Facility_Type VARCHAR(100) NOT NULL,
Bed_Capacity INT NOT NULL CHECK (Bed_Capacity >= 0)
Established_Year INT CHECK (Established_Year > 1900 AND Established_Year <=Extract (YEAR FROM CURRENT_DATE))
);



CREATE TABLE Government_Policy (
Policy_ID SERIAL PRIMARY KEY,
Policy_Name VARCHAR(255) NOT NULL,
Policy_Type VARCHAR(100) NOT NULL,
State_ID INT NOT NULL,
FOREIGN KEY (State_ID) REFERENCES State(State_ID) ON DELETE CASCADE
);



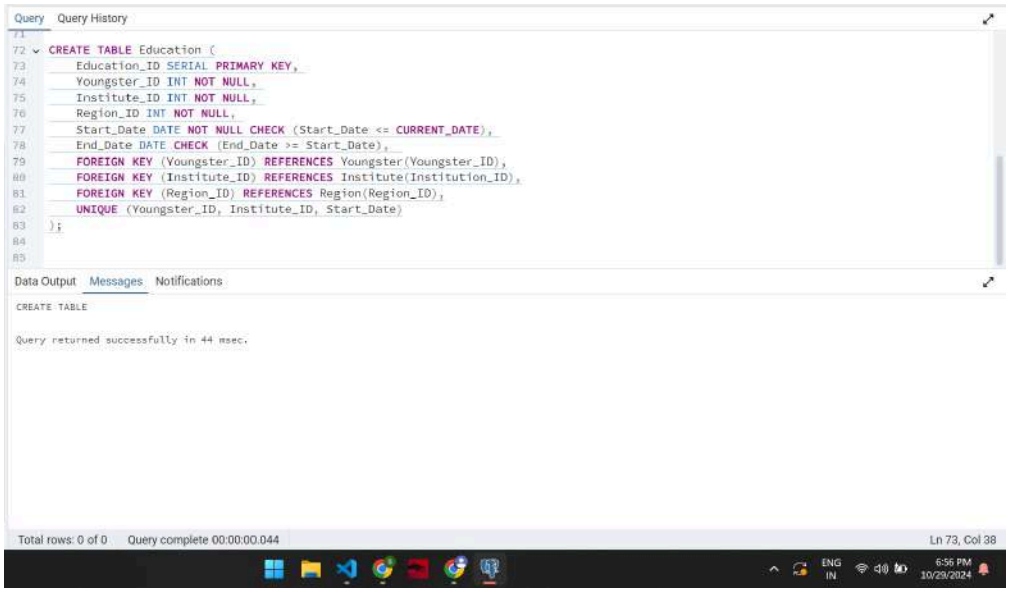
CREATE TABLE Climate (
City_ID INT NOT NULL,
Policy_ID INT NOT NULL,
Average_Temp DECIMAL(5, 2) NOT NULL CHECK (Average_Temp >= -50 AND Average_Temp <= 60),
Climate_Type VARCHAR(50) NOT NULL,
PRIMARY KEY (City_ID, Policy_ID),
FOREIGN KEY (City_ID) REFERENCES City(City_ID) ON DELETE CASCADE
);



CREATE TABLE Employment (
JOB_ID SERIAL PRIMARY KEY,
Industry_Type VARCHAR(100) NOT NULL,
Salary DECIMAL(10, 2) NOT NULL CHECK (Salary >= 0),
Start_Date DATE NOT NULL CHECK (Start_Date < CURRENT_DATE),
End_Date DATE CHECK (End_Date > Start_Date)
);

CREATE TABLE Education (
Education_ID SERIAL PRIMARY KEY,
Institute_ID INT NOT NULL,
City_ID INT NOT NULL,
Start_Date DATE NOT NULL CHECK (Start_Date < CURRENT_DATE),

End_Date DATE CHECK (End_Date > Start_Date),
FOREIGN KEY (Institute_ID) REFERENCES Institute(Institution_ID) ON DELETE CASCADE,
FOREIGN KEY (City_ID) REFERENCES City(City_ID) ON DELETE CASCADE
);

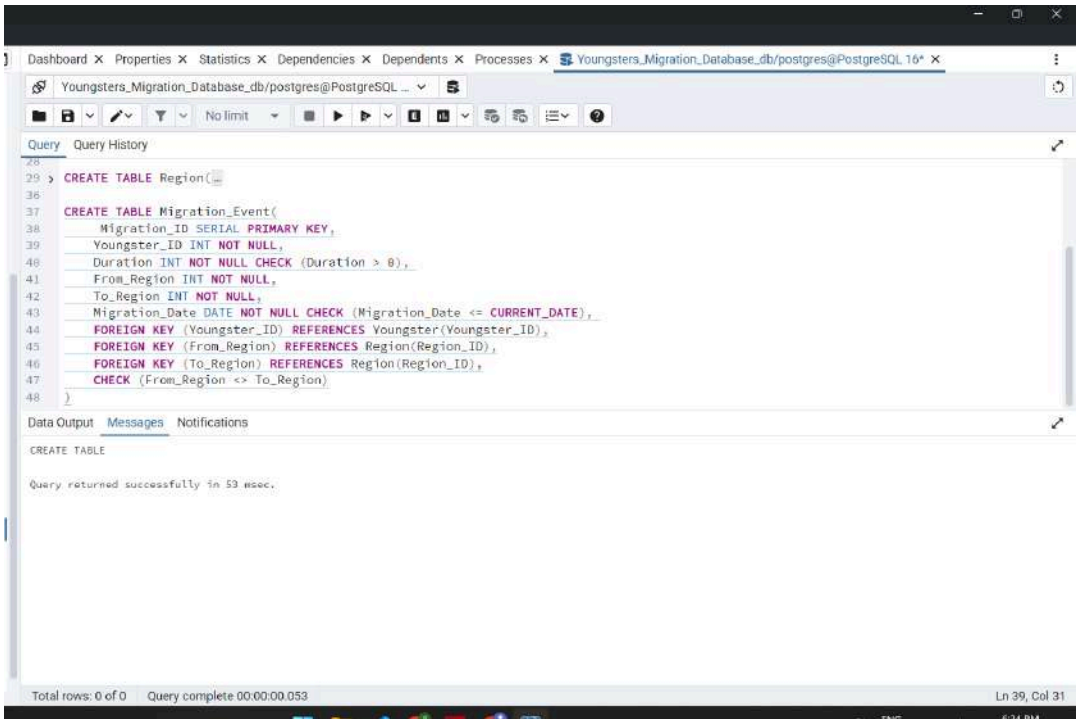


CREATE TABLE Youngster (
Youngster_ID SERIAL PRIMARY KEY,
Name VARCHAR(100) NOT NULL,
Email VARCHAR(100) NOT NULL UNIQUE,
Gender VARCHAR(10) CHECK (Gender IN ('Male', 'Female', 'Other')),
Education_ID INT,
Employment_ID INT,
Place_of_Origin VARCHAR(255),
Date_Of_Birth DATE NOT NULL CHECK (Date_Of_Birth < CURRENT_DATE)

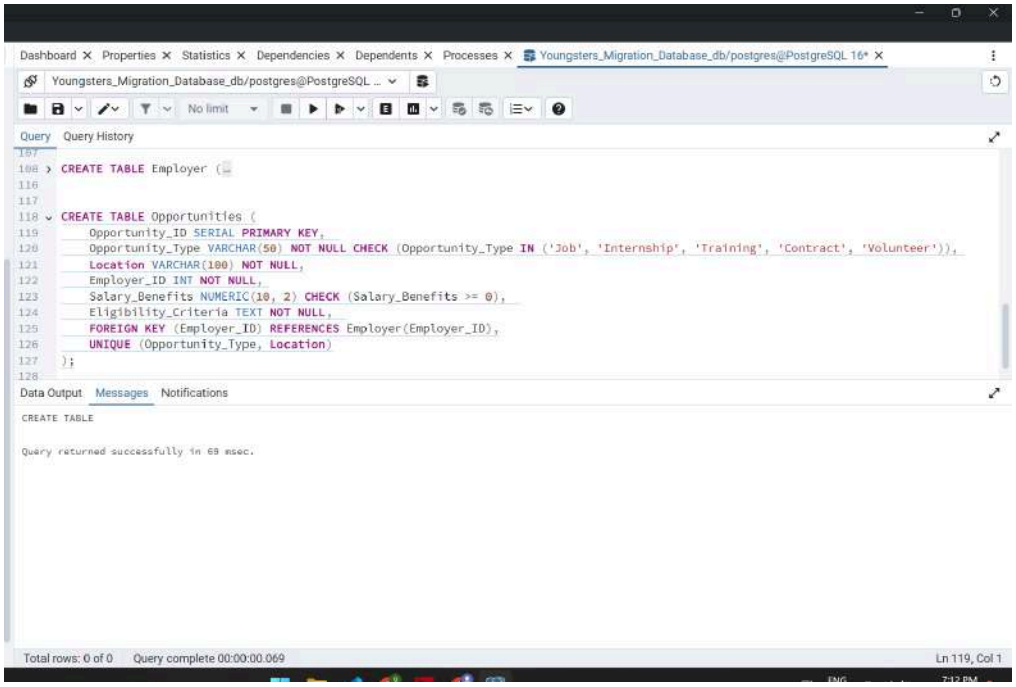
FOREIGN KEY (Education_ID) REFERENCES Education(Education_ID) ON DELETE SET NULL,
FOREIGN KEY (Employment_ID) REFERENCES Employment(JOB_ID) ON DELETE SET NULL
);

CREATE TABLE Migration_Event (
Migration_ID SERIAL PRIMARY KEY,
Youngster_ID INT NOT NULL,
Duration INT NOT NULL CHECK (Duration >= 0),
From_Region INT NOT NULL,
To_Region INT NOT NULL,
Migration_Date DATE NOT NULL CHECK (Migration_Date < CURRENT_DATE),
FOREIGN KEY (Youngster_ID) REFERENCES Youngster(Youngster_ID) ON DELETE CASCADE,
FOREIGN KEY (From_Region) REFERENCES City(City_ID) ON DELETE CASCADE,
FOREIGN KEY (To_Region) REFERENCES City(City_ID) ON DELETE CASCADE

);

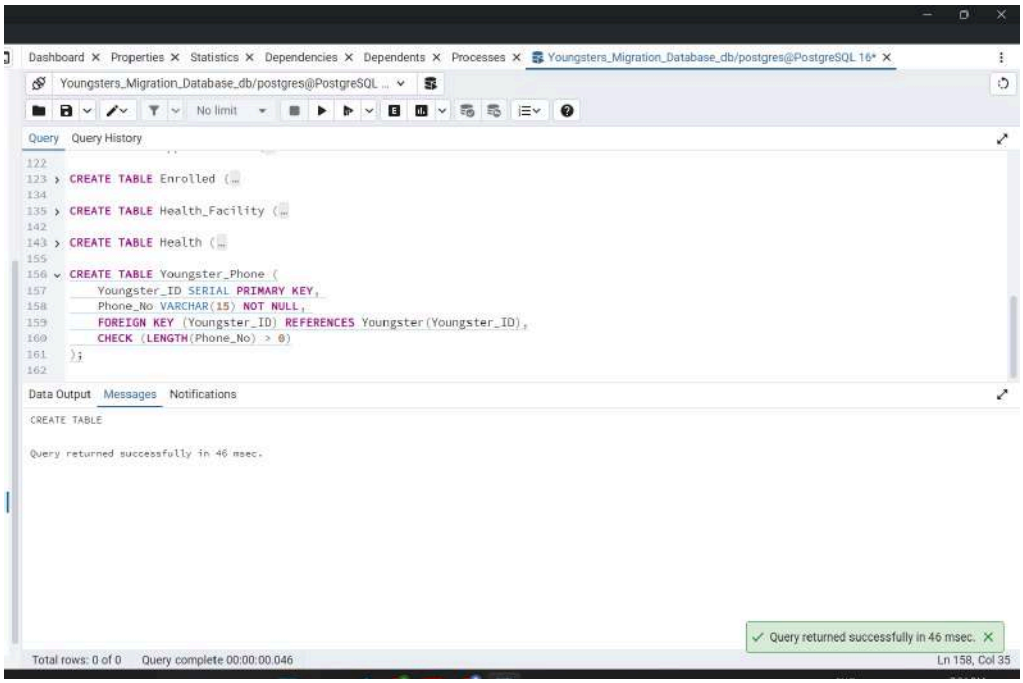


CREATE TABLE Opportunities (
Opportunity_ID SERIAL PRIMARY KEY,
Opportunity_Type VARCHAR(100) NOT NULL,
Location VARCHAR(255) NOT NULL,
Employer_ID INT NOT NULL,
Salary_Benefits TEXT NOT NULL,
Eligibility_Criteria TEXT NOT NULL,
FOREIGN KEY (Employer_ID) REFERENCES Employer(Employer_ID) ON DELETE CASCADE
);



CREATE TABLE Enrolled (
Youngster_ID INT NOT NULL,
Institute_ID INT NOT NULL,
Enrollment_Date DATE NOT NULL CHECK (Enrollment_Date < CURRENT_DATE),
Completion_Status BOOLEAN NOT NULL,
Credits INT NOT NULL CHECK (Credits >= 0),
Grade VARCHAR(10),
PRIMARY KEY (Youngster_ID, Institute_ID),
FOREIGN KEY (Youngster_ID) REFERENCES Youngster(Youngster_ID) ON DELETE CASCADE,
FOREIGN KEY (Institute_ID) REFERENCES Institute(Institution_ID) ON DELETE CASCADE
);

CREATE TABLE Youngster_Phone (
Youngster_ID INT NOT NULL,
Phone_no VARCHAR(15) NOT NULL,
PRIMARY KEY (Youngster_ID, Phone_No),
FOREIGN KEY (Youngster_ID) REFERENCES Youngster(Youngster_ID) ON DELETE CASCADE
);



4.2 Database Population

Insert Statements

1) State Table

```
INSERT INTO State (State_ID, State_Name) VALUES
(1, 'Andhra Pradesh'),
(2, 'Arunachal Pradesh'),
(3, 'Assam'),
(4, 'Bihar'),
(5, 'Chhattisgarh'),
(6, 'Goa'),
(7, 'Gujarat'),
(8, 'Haryana'),
(9, 'Himachal Pradesh'),
(10, 'Jharkhand'),
(11, 'Karnataka'),
(12, 'Kerala'),
(13, 'Madhya Pradesh'),
(14, 'Maharashtra'),
(15, 'Manipur'),
(16, 'Meghalaya'),
(17, 'Mizoram'),
(18, 'Nagaland'),
```

(19, 'Odisha'),
(20, 'Punjab'),
(21, 'Rajasthan'),
(22, 'Sikkim'),
(23, 'Tamil Nadu'),
(24, 'Telangana'),
(25, 'Tripura'),
(26, 'Uttar Pradesh'),
(27, 'Uttarakhand'),
(28, 'West Bengal'),
(29, 'Andaman and Nicobar Islands'),
(30, 'Chandigarh'),
(31, 'Dadra and Nagar Haveli and Daman and Diu'),
(32, 'Lakshadweep'),
(33, 'Delhi'),
(34, 'Puducherry'),
(35, 'Jammu and Kashmir'),
(36, 'Ladakh');

2) City Table

INSERT INTO City (City_ID, City_Name, State_ID) VALUES
(1, 'Visakhapatnam', 1),
(2, 'Vijayawada', 1),
(3, 'Itanagar', 2),
(4, 'Guwahati', 3),
(5, 'Patna', 4),
(6, 'Raipur', 5),
(7, 'Panaji', 6),

(8, 'Ahmedabad', 7),
(9, 'Gurugram', 8),
(10, 'Shimla', 9),
(11, 'Ranchi', 10),
(12, 'Bengaluru', 11),
(13, 'Thiruvananthapuram', 12),
(14, 'Bhopal', 13),
(15, 'Mumbai', 14),
(16, 'Imphal', 15),
(17, 'Shillong', 16),
(18, 'Aizawl', 17),
(19, 'Kohima', 18),
(20, 'Bhubaneswar', 19),
(21, 'Chandigarh', 20),
(22, 'Jaipur', 21),
(23, 'Gangtok', 22),
(24, 'Chennai', 23),
(25, 'Hyderabad', 24),
(26, 'Agartala', 25),
(27, 'Lucknow', 26),
(28, 'Dehradun', 27),
(29, 'Kolkata', 28),
(30, 'Port Blair', 29),
(31, 'Araku Valley', 1),
(32, 'Diu', 31),
(33, 'Kavaratti', 32),
(34, 'Delhi', 33),
(35, 'Puducherry', 34),
(36, 'Srinagar', 35),

(37, 'Leh', 36),
(38, 'Jodhpur', 21),
(39, 'Ahmednagar', 14),
(40, 'Nashik', 14),
(41, 'Nagpur', 14),
(42, 'Dharmanagar', 25),
(43, 'Warangal', 24),
(44, 'Gwalior', 13),
(45, 'Kota', 21),
(46, 'Bikaner', 21),
(47, 'Jaisalmer', 21),
(48, 'Mysuru', 11),
(49, 'Belgaum', 11),
(50, 'Kochi', 12),
(51, 'Thrissur', 12),
(52, 'Mirzapur', 26),
(53, 'Dimapur', 18),
(54, 'Dibrugarh', 3),
(55, 'Bhatinda', 20),
(56, 'Ludhiana', 20),
(57, 'Vapi', 7),
(58, 'Vadodara', 7),
(59, 'Navi Mumbai', 14),
(60, 'Kalyan', 14),
(61, 'Cuttack', 19),
(62, 'Mangalore', 11),
(63, 'Rourkela', 19),
(64, 'Jamshedpur', 10),
(65, 'Dhanbad', 10),

(66, 'Pithoragarh', 27),
(67, 'Kullu', 9),
(68, 'Siliguri', 28),
(69, 'Agra', 26),
(70, 'Varanasi', 26),
(71, 'Noida', 33),
(72, 'Ghaziabad', 26),
(73, 'Faridabad', 8),
(74, 'Baramulla', 35),
(75, 'Sagar', 13),
(76, 'Khandwa', 13),
(77, 'Sangli', 14),
(78, 'Kolhapur', 14),
(79, 'Aurangabad', 14),
(80, 'Nanded', 14),
(81, 'Jalna', 14),
(82, 'Kalyan-Dombivli', 14),
(83, 'Dharamshala', 9),
(84, 'Solan', 9),
(85, 'Palakkad', 12),
(86, 'Kottayam', 12),
(87, 'Tirupati', 1),
(88, 'Nellore', 1),
(89, 'Eluru', 1),
(90, 'Rangpo', 22),
(91, 'Dharamkot', 9),
(92, 'Bhuj', 7),
(93, 'Porbandar', 7),
(94, 'Udaipur', 21),

(95, 'Ajmer', 21),
(96, 'Durgapur', 28),
(97, 'Bardhaman', 28),
(98, 'Jabalpur', 13),
(99, 'Indore', 13),
(100, 'Madhubani', 4),
(101, 'Darbhanga', 4),
(102, 'Gandhinagar', 7),
(103, 'Kharagpur', 28),
(104, 'Bangalore', 11),
(105, 'Tiruchirappalli', 23),
(106, 'Surathkal', 11),
(107, 'Vellore', 23),
(108, 'Manipal', 11),
(109, 'Phagwara', 20),
(110, 'Thanjavur', 23),
(111, 'Mesra', 10),
(112, 'Mirzapur', 26),
(113, 'Sri City', 1),
(114, 'Bhiwadi', 21),
(115, 'Neemrana', 21),
(116, 'Pune', 14),
(117, 'Gharuan', 20),
(118, 'Ratnagiri', 14),
(119, 'Rishikesh', 27),
(120, 'Sonipat', 8),
(121, 'Jhansi', 26),
(122, 'Tonk', 21),
(123, 'Coimbatore', 23),

(124, 'Palghar', 14),
(125, 'Mandi', 9),
(126, 'Bhilai', 5),
(127, 'Kanpur', 26),
(128, 'Pilani', 21),
(129, 'Jammu', 35),
(130, 'Kozhikode', 12),
(131, 'Wardha', 14),
(132, 'Amravati', 14),
(133, 'Vallabh Vidyanagar', 7),
(134, 'Udhampur', 35),
(135, 'Midnapore', 28),
(136, 'Rajkot', 7),
(137, 'Faridkot', 20),
(138, 'Salem', 23),
(139, 'Hassan', 11),
(140, 'Kakinada', 1),
(141, 'Vasad', 7);

3) Institute Table

INSERT INTO Institute (Institution_ID, Name, Tuition_Fees, Address, Website, Accreditation_Status, Established_Year, Type) VALUES
(1, 'IIT Bombay', 200000, 'Mumbai, Maharashtra', 'http://www.iitb.ac.in', TRUE, 1958, 'Technology'),
(2, 'IIT Delhi', 200000, 'New Delhi', 'http://www.iitd.ac.in', TRUE, 1961, 'Technology'),

(3, 'IIT Madras', 200000, 'Chennai, Tamil Nadu',
'http://www.iitm.ac.in', TRUE, 1959, 'Technology'),
(4, 'IIT Kanpur', 200000, 'Kanpur, Uttar Pradesh',
'http://www.iitk.ac.in', TRUE, 1959, 'Technology'),
(5, 'IIT Kharagpur', 200000, 'Kharagpur, West Bengal',
'http://www.iitkgp.ac.in', TRUE, 1951, 'Technology'),
(6, 'IIM Ahmedabad', 250000, 'Ahmedabad, Gujarat',
'http://www.iima.ac.in', TRUE, 1961, 'Management'),
(7, 'IIM Bangalore', 250000, 'Bangalore, Karnataka',
'http://www.iimb.ac.in', TRUE, 1973, 'Management'),
(8, 'IIM Calcutta', 250000, 'Kolkata, West Bengal',
'http://www.iimcal.ac.in', TRUE, 1961, 'Management'),
(9, 'BITS Pilani', 150000, 'Pilani, Rajasthan',
'http://www.bits-pilani.ac.in', TRUE, 1964, 'Technology'),
(10, 'NIT Trichy', 120000, 'Tiruchirappalli, Tamil Nadu',
'http://www.nitt.edu', TRUE, 1971, 'Technology'),
(11, 'NIT Surathkal', 120000, 'Surathkal, Karnataka',
'http://www.nitk.ac.in', TRUE, 1960, 'Technology'),
(12, 'VIT Vellore', 200000, 'Vellore, Tamil Nadu',
'http://www.vit.ac.in', TRUE, 1984, 'Technology'),
(13, 'SRM Institute of Science and Technology', 150000, 'Chennai,
Tamil Nadu', 'http://www.srmist.edu.in', TRUE, 1985,
'Technology'),
(14, 'Manipal Institute of Technology', 120000, 'Manipal,
Karnataka', 'http://www.manipal.edu', TRUE, 1957, 'Technology'),
(15, 'LPU', 80000, 'Phagwara, Punjab', 'http://www.lpu.in', TRUE,
2009, 'Technology'),
(16, 'Shiv Nadar University', 180000, 'Greater Noida, Uttar
Pradesh', 'http://www.snu.edu.in', TRUE, 2011, 'Technology'),

(17, 'Delhi University', 50000, 'New Delhi', 'http://www.du.ac.in', TRUE, 1922, 'Arts'),
(18, 'Jawaharlal Nehru University', 60000, 'New Delhi', 'http://www.jnu.ac.in', TRUE, 1969, 'Arts'),
(19, 'Jamia Millia Islamia', 70000, 'New Delhi', 'http://www.jmi.ac.in', TRUE, 1920, 'Arts'),
(20, 'Panjab University', 50000, 'Chandigarh', 'http://www.puchd.ac.in', TRUE, 1882, 'Arts'),
(21, 'Tata Institute of Social Sciences', 70000, 'Mumbai, Maharashtra', 'http://www.tiss.edu', TRUE, 1936, 'Social Sciences'),
(22, 'Indian Statistical Institute', 60000, 'Kolkata, West Bengal', 'http://www.isical.ac.in', TRUE, 1931, 'Statistics'),
(23, 'National Institute of Fashion Technology', 120000, 'New Delhi', 'http://www.nift.ac.in', TRUE, 1986, 'Fashion Design'),
(24, 'National Institute of Design', 120000, 'Ahmedabad, Gujarat', 'http://www.nid.edu', TRUE, 1961, 'Design'),
(25, 'Amity University', 100000, 'Noida, Uttar Pradesh', 'http://www.amity.edu', TRUE, 2005, 'Multidisciplinary'),
(26, 'Banaras Hindu University', 50000, 'Varanasi, Uttar Pradesh', 'http://www.bhu.ac.in', TRUE, 1916, 'Arts'),
(27, 'University of Mumbai', 60000, 'Mumbai, Maharashtra', 'http://www.mu.ac.in', TRUE, 1857, 'Multidisciplinary'),
(28, 'University of Chennai', 50000, 'Chennai, Tamil Nadu', 'http://www.unom.ac.in', TRUE, 1857, 'Multidisciplinary'),
(29, 'SASTRA University', 120000, 'Thanjavur, Tamil Nadu', 'http://www.sastra.edu', TRUE, 1984, 'Technology'),
(30, 'K L University', 80000, 'Vijayawada, Andhra Pradesh', 'http://www.kluniversity.in', TRUE, 1980, 'Technology'),

(31, 'Nirma University', 80000, 'Ahmedabad, Gujarat',
'http://www.nirmauni.ac.in', TRUE, 2003, 'Technology'),
(32, 'Birla Institute of Technology', 120000, 'Mesra, Jharkhand',
'http://www.bitmesra.ac.in', TRUE, 1955, 'Technology'),
(33, 'IIIT Bangalore', 120000, 'Bangalore, Karnataka',
'http://www.iiitb.ac.in', TRUE, 1999, 'Technology'),
(34, 'Krea University', 160000, 'Sri City, Andhra Pradesh',
'http://www.krea.edu.in', TRUE, 2018, 'Multidisciplinary'),
(35, 'Shivaji University', 40000, 'Kolhapur, Maharashtra',
'http://www.unishivaji.ac.in', TRUE, 1962, 'Multidisciplinary'),
(36, 'Lovely Professional University', 80000, 'Phagwara, Punjab',
'http://www.lpu.in', TRUE, 2009, 'Multidisciplinary'),
(37, 'Jadavpur University', 60000, 'Kolkata, West Bengal',
'http://www.jaduniv.edu.in', TRUE, 1955, 'Multidisciplinary'),
(38, 'GGS Indraprastha University', 50000, 'New Delhi',
'http://www.ipu.ac.in', TRUE, 1998, 'Multidisciplinary'),
(39, 'NIIT University', 70000, 'Neemrana, Rajasthan',
'http://www.niituniversity.in', TRUE, 2009, 'Technology'),
(40, 'PDPU', 60000, 'Gandhinagar, Gujarat',
'http://www.pdpu.ac.in', TRUE, 2007, 'Technology'),
(41, 'UPES', 80000, 'Dehradun, Uttarakhand',
'http://www.upes.ac.in', TRUE, 2003, 'Technology'),
(42, 'Bharati Vidyapeeth University', 70000, 'Pune, Maharashtra',
'http://www.bvuniversity.edu.in', TRUE, 1964, 'Multidisciplinary'),
(43, 'Delhi Technological University', 60000, 'New Delhi',
'http://www.dtu.ac.in', TRUE, 1941, 'Technology'),
(44, 'Netaji Subhas University of Technology', 60000, 'New Delhi',
'http://www.nsut.ac.in', TRUE, 1983, 'Technology'),

(45, 'Mahatma Gandhi University', 50000, 'Kottayam, Kerala',
'http://www.mgu.ac.in', TRUE, 1983, 'Multidisciplinary'),
(46, 'Chandigarh University', 60000, 'Gharuan, Punjab',
'http://www.cuchd.in', TRUE, 2012, 'Multidisciplinary'),
(47, 'REVA University', 60000, 'Bangalore, Karnataka',
'http://www.reva.edu.in', TRUE, 2012, 'Technology'),
(48, 'Vellore Institute of Technology', 200000, 'Vellore, Tamil
Nadu', 'http://www.vit.ac.in', TRUE, 1984, 'Technology'),
(49, 'M S Ramaiah University', 80000, 'Bangalore, Karnataka',
'http://www.msruas.ac.in', TRUE, 2013, 'Technology'),
(50, 'SRM Institute of Science and Technology', 150000, 'Chennai,
Tamil Nadu', 'http://www.srmuniv.ac.in', TRUE, 1985,
'Technology'),
(51, 'SASTRA University', 120000, 'Thanjavur, Tamil Nadu',
'http://www.sastra.edu.in', TRUE, 1984, 'Technology'),
(52, 'Bharti Vidyapeeth Deemed University', 70000, 'Pune,
Maharashtra', 'http://www.bvdu.edu.in', TRUE, 1996,
'Multidisciplinary'),
(53, 'Amrita Vishwa Vidyapeetham', 100000, 'Coimbatore, Tamil
Nadu', 'http://www.amrita.edu', TRUE, 2003, 'Multidisciplinary'),
(54, 'Sikkim Manipal University', 70000, 'Gangtok, Sikkim',
'http://www.smu.edu.in', TRUE, 1995, 'Multidisciplinary'),
(55, 'University of Calcutta', 60000, 'Kolkata, West Bengal',
'http://www.caluniv.ac.in', TRUE, 1857, 'Multidisciplinary'),
(56, 'Jawaharlal Nehru Technological University', 50000,
'Hyderabad, Telangana', 'http://www.jntuh.ac.in', TRUE, 1972,
'Technology'),
(57, 'Manipal University Jaipur', 70000, 'Jaipur, Rajasthan',
'http://www.muj.manipal.edu', TRUE, 2011, 'Technology'),

(58, 'Shri Ram College of Commerce', 50000, 'New Delhi', 'http://www.srcc.edu.in', TRUE, 1926, 'Commerce'),
(59, 'National Law School of India University', 80000, 'Bangalore, Karnataka', 'http://www.nls.ac.in', TRUE, 1987, 'Law'),
(60, 'National Institute of Design', 120000, 'Ahmedabad, Gujarat', 'http://www.nid.edu', TRUE, 1961, 'Design'),
(61, 'National Institute of Fashion Technology', 120000, 'New Delhi', 'http://www.nift.ac.in', TRUE, 1986, 'Fashion'),
(62, 'Jamia Hamdard', 60000, 'New Delhi', 'http://www.jamiahamdard.edu', TRUE, 1989, 'Health Sciences'),
(63, 'Hamdard University', 60000, 'New Delhi', 'http://www.hamdard.edu', TRUE, 1989, 'Health Sciences'),
(64, 'Indian Institute of Technology, Mandi', 200000, 'Mandi, Himachal Pradesh', 'http://www.iitmandi.ac.in', TRUE, 2009, 'Technology'),
(65, 'Indian Institute of Technology, Bhilai', 200000, 'Bhilai, Chhattisgarh', 'http://www.iitbhilai.ac.in', TRUE, 2016, 'Technology'),
(66, 'Indian Institute of Technology, Jammu', 200000, 'Jammu, Jammu and Kashmir', 'http://www.iitjammu.ac.in', TRUE, 2016, 'Technology'),
(67, 'Indian Institute of Technology, Dhanbad', 200000, 'Dhanbad, Jharkhand', 'http://www.iitism.ac.in', TRUE, 1926, 'Technology'),
(68, 'Indian Institute of Management, Ranchi', 250000, 'Ranchi, Jharkhand', 'http://www.iimranchi.ac.in', TRUE, 2010, 'Management'),
(69, 'Indian Institute of Management, Lucknow', 250000, 'Lucknow, Uttar Pradesh', 'http://www.iiml.ac.in', TRUE, 1984, 'Management'),

(70, 'Indian Institute of Management, Kozhikode', 250000, 'Kozhikode, Kerala', 'http://www.iimk.ac.in', TRUE, 1997, 'Management'),
(71, 'Indian School of Business', 250000, 'Hyderabad, Telangana', 'http://www.isb.edu', TRUE, 2001, 'Management'),
(72, 'Karnataka State Open University', 40000, 'Mysuru, Karnataka', 'http://www.ksoumysore.karnataka.gov.in', TRUE, 1996, 'Open University'),
(73, 'Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya', 60000, 'Wardha, Maharashtra', 'http://www.hindivishwa.org', TRUE, 1997, 'Language'),
(74, 'Nirma University', 80000, 'Ahmedabad, Gujarat', 'http://www.nirmauni.ac.in', TRUE, 2003, 'Technology'),
(75, 'Narsee Monjee Institute of Management Studies', 80000, 'Mumbai, Maharashtra', 'http://www.nmims.edu', TRUE, 1994, 'Management'),
(76, 'Ranchi University', 50000, 'Ranchi, Jharkhand', 'http://www.ranchiuniversity.ac.in', TRUE, 1960, 'Multidisciplinary'),
(77, 'University of Jammu', 60000, 'Jammu, Jammu and Kashmir', 'http://www.jammuuniversity.in', TRUE, 1969, 'Multidisciplinary'),
(78, 'Sardar Patel University', 60000, 'Vallabh Vidyanagar, Gujarat', 'http://www.spuvvn.edu', TRUE, 1955, 'Multidisciplinary'),
(79, 'Shivaji University', 40000, 'Kolhapur, Maharashtra', 'http://www.unishivaji.ac.in', TRUE, 1962, 'Multidisciplinary'),
(80, 'Tata Institute of Fundamental Research', 70000, 'Mumbai, Maharashtra', 'http://www.tifr.res.in', TRUE, 1945, 'Research'),
(81, 'University of Delhi', 50000, 'New Delhi', 'http://www.du.ac.in', TRUE, 1922, 'Multidisciplinary'),

(82, 'University of Kerala', 60000, 'Thiruvananthapuram, Kerala', 'http://www.keralauniversity.ac.in', TRUE, 1937, 'Multidisciplinary'),
(83, 'Bharathiar University', 60000, 'Coimbatore, Tamil Nadu', 'http://www.b-u.ac.in', TRUE, 1982, 'Multidisciplinary'),
(84, 'Vidyasagar University', 60000, 'Midnapore, West Bengal', 'http://www.vidyasagar.ac.in', TRUE, 1981, 'Multidisciplinary'),
(85, 'Kochi University of Science and Technology', 70000, 'Kochi, Kerala', 'http://www.kust.edu.in', TRUE, 1993, 'Technology'),
(86, 'Kakatiya University', 50000, 'Warangal, Telangana', 'http://www.kakatiya.ac.in', TRUE, 1976, 'Multidisciplinary'),
(87, 'Dr. B.R. Ambedkar University', 60000, 'Lucknow, Uttar Pradesh', 'http://www.dbrau.ac.in', TRUE, 2007, 'Multidisciplinary'),
(88, 'Saurashtra University', 60000, 'Rajkot, Gujarat', 'http://www.saurashtrauniversity.edu', TRUE, 1967, 'Multidisciplinary'),
(89, 'Andhra University', 60000, 'Visakhapatnam, Andhra Pradesh', 'http://www.andhrauniversity.edu.in', TRUE, 1926, 'Multidisciplinary'),
(90, 'Utkal University', 60000, 'Bhubaneswar, Odisha', 'http://utkaluniversity.ac.in', TRUE, 1943, 'Multidisciplinary'),
(91, 'Baba Farid University of Health Sciences', 70000, 'Faridkot, Punjab', 'http://www.bfuhs.ac.in', TRUE, 1998, 'Health Sciences'),
(92, 'Gauhati University', 60000, 'Guwahati, Assam', 'http://www.gauhati.ac.in', TRUE, 1948, 'Multidisciplinary'),
(93, 'Periyar University', 60000, 'Salem, Tamil Nadu', 'http://www.periyaruniversity.ac.in', TRUE, 1997, 'Multidisciplinary'),

(94, 'Tamil Nadu Agricultural University', 60000, 'Coimbatore, Tamil Nadu', 'http://www.tnau.ac.in', TRUE, 1971, 'Agricultural'),
(95, 'Jawaharlal Nehru Technological University, Kakinada', 60000, 'Kakinada, Andhra Pradesh', 'http://www.jntuk.edu.in', TRUE, 1946, 'Technology'),
(96, 'Guru Nanak Dev Engineering College', 70000, 'Ludhiana, Punjab', 'http://www.gndec.ac.in', TRUE, 1956, 'Engineering'),
(97, 'Punjab Engineering College', 70000, 'Chandigarh', 'http://www.pec.ac.in', TRUE, 1953, 'Engineering'),
(98, 'Sardar Vallabhbhai Patel Institute of Technology', 60000, 'Vasad, Gujarat', 'http://www.svpit.ac.in', TRUE, 2009, 'Technology'),
(99, 'Jawaharlal Nehru University, Hyderabad', 60000, 'Hyderabad, Telangana', 'http://www.jnuhyd.ac.in', TRUE, 2009, 'Multidisciplinary'),
(100, 'National Institute of Technical Teachers Training and Research', 60000, 'Bhopal, Madhya Pradesh', 'http://www.nitttrbpl.ac.in', TRUE, 2002, 'Technical Teaching');

4) Employer Table

INSERT INTO Employer (Employer_ID, Employer_Name, Location, Salary_Benefits) VALUES
(1, 'Tata Consultancy Services', 'Mumbai', 800000),
(2, 'Infosys', 'Bengaluru', 750000),
(3, 'Wipro', 'Bengaluru', 700000),
(4, 'HCL Technologies', 'Noida', 720000),
(5, 'Accenture', 'Gurgaon', 900000),
(6, 'Cognizant', 'Chennai', 680000),

(7, 'Tech Mahindra', 'Pune', 640000),
(8, 'Capgemini', 'Mumbai', 750000),
(9, 'IBM', 'Bengaluru', 850000),
(10, 'Oracle', 'Hyderabad', 900000),
(11, 'SAP', 'Gurgaon', 950000),
(12, 'Dell', 'Bengaluru', 780000),
(13, 'Intel', 'Hyderabad', 830000),
(14, 'Microsoft', 'Hyderabad', 1000000),
(15, 'Amazon', 'Bengaluru', 1200000),
(16, 'Google', 'Hyderabad', 1100000),
(17, 'Facebook', 'Hyderabad', 1150000),
(18, 'Adobe', 'Noida', 900000),
(19, 'Salesforce', 'Bengaluru', 950000),
(20, 'Cisco', 'Bengaluru', 880000),
(21, 'Uber', 'Bengaluru', 1000000),
(22, 'Ola', 'Bengaluru', 700000),
(23, 'Zomato', 'Gurgaon', 600000),
(24, 'Swiggy', 'Bengaluru', 650000),
(25, 'Paytm', 'Noida', 750000),
(26, 'Razorpay', 'Bengaluru', 700000),
(27, 'PhonePe', 'Bengaluru', 720000),
(28, 'Myntra', 'Bengaluru', 680000),
(29, 'Nykaa', 'Mumbai', 600000),
(30, 'Flipkart', 'Bengaluru', 950000),
(31, 'Snapdeal', 'Gurgaon', 500000),
(32, 'Tata Steel', 'Jamshedpur', 700000),
(33, 'Reliance Industries', 'Mumbai', 850000),
(34, 'Hindustan Unilever', 'Mumbai', 900000),
(35, 'ITC', 'Kolkata', 850000),

(36, 'L&T', 'Mumbai', 800000),
(37, 'Godrej', 'Mumbai', 750000),
(38, 'Mahindra & Mahindra', 'Mumbai', 800000),
(39, 'Bajaj Auto', 'Pune', 750000),
(40, 'TVS Motor Company', 'Chennai', 680000),
(41, 'Hero MotoCorp', 'Gurgaon', 700000),
(42, 'Bharat Forge', 'Pune', 720000),
(43, 'Asian Paints', 'Mumbai', 740000),
(44, 'Maruti Suzuki', 'Gurgaon', 850000),
(45, 'Tata Motors', 'Pune', 800000),
(46, 'Nirma', 'Ahmedabad', 680000),
(47, 'P&G', 'Mumbai', 900000),
(48, 'Nestle', 'Mumbai', 850000),
(49, 'Coca-Cola', 'Bengaluru', 780000),
(50, 'PepsiCo', 'Hyderabad', 800000),
(51, 'Britannia', 'Mumbai', 700000),
(52, 'Hindustan Aeronautics', 'Bengaluru', 950000),
(53, 'ISRO', 'Bengaluru', 1000000),
(54, 'DRDO', 'Bengaluru', 900000),
(55, 'BHEL', 'Bhopal', 800000),
(56, 'NTPC', 'New Delhi', 850000),
(57, 'ONGC', 'Dehradun', 900000),
(58, 'GAIL', 'New Delhi', 750000),
(59, 'Cairn India', 'Rajasthan', 700000),
(60, 'Adani Group', 'Ahmedabad', 850000),
(61, 'JSW Steel', 'Bengaluru', 800000),
(62, 'Steel Authority of India', 'New Delhi', 720000),
(63, 'Indian Oil Corporation', 'New Delhi', 750000),
(64, 'Hindustan Zinc', 'Udaipur', 680000),

(65, 'Marico', 'Mumbai', 700000),
(66, 'ITC Hotels', 'Kolkata', 750000),
(67, 'KFC', 'New Delhi', 600000),
(68, 'McDonald’s', 'Mumbai', 650000),
(69, 'Domino’s Pizza', 'Bengaluru', 620000),
(70, 'Starbucks', 'Mumbai', 650000),
(71, 'Taj Hotels', 'Mumbai', 800000),
(72, 'Oyo Rooms', 'Gurgaon', 700000),
(73, 'Zomato Gold', 'Bengaluru', 600000),
(74, 'MakeMyTrip', 'Gurgaon', 650000),
(75, 'Cleartrip', 'Mumbai', 580000),
(76, 'GoAir', 'Mumbai', 620000),
(77, 'IndiGo', 'Gurgaon', 680000),
(78, 'Air India', 'Mumbai', 750000),
(79, 'SpiceJet', 'Delhi', 600000),
(80, 'Vistara', 'Delhi', 700000),
(81, 'Bharti Airtel', 'New Delhi', 800000),
(82, 'Reliance Jio', 'Mumbai', 850000),
(83, 'Vodafone', 'Mumbai', 700000),
(84, 'BSNL', 'Mumbai', 600000),
(85, 'MTNL', 'Mumbai', 500000),
(86, 'Google Pay', 'Hyderabad', 720000),
(87, 'PhonePe', 'Bengaluru', 700000),
(88, 'FreeCharge', 'Gurgaon', 650000),
(89, 'PayPal', 'Hyderabad', 800000),
(90, 'PayU', 'Gurgaon', 700000),
(91, 'Razorpay', 'Bengaluru', 720000),
(92, 'Cure.fit', 'Bengaluru', 650000),
(93, 'PharmEasy', 'Mumbai', 700000),

(94, '1mg', 'Bengaluru', 680000),
(95, 'Netmeds', 'Hyderabad', 640000),
(96, 'Zomato', 'Gurgaon', 600000),
(97, 'Swiggy', 'Bengaluru', 650000),
(98, 'Urban Company', 'Gurgaon', 680000),
(99, 'Practo', 'Bengaluru', 700000),
(100, 'Dunzo', 'Bengaluru', 600000);

5) Health_Facility Table

INSERT INTO Health_Facility (Facility_ID, Name, Facility_Type, Bed_Capacity) VALUES
(1, 'All India Institute of Medical Sciences', 'Hospital', 800),
(2, 'Post Graduate Institute of Medical Education and Research', 'Hospital', 1500),
(3, 'Tata Memorial Hospital', 'Cancer Hospital', 600),
(4, 'Fortis Hospital', 'Multi-Specialty Hospital', 200),
(5, 'Apollo Hospitals', 'Multi-Specialty Hospital', 400),
(6, 'Max Super Specialty Hospital', 'Multi-Specialty Hospital', 300),
(7, 'Narayana Health', 'Multi-Specialty Hospital', 1000),
(8, 'Medanta – The Medicity', 'Multi-Specialty Hospital', 800),
(9, 'Kokilaben Dhirubhai Ambani Hospital', 'Multi-Specialty Hospital', 300),
(10, 'Manipal Hospital', 'Multi-Specialty Hospital', 500),
(11, 'Lilavati Hospital', 'Multi-Specialty Hospital', 350),
(12, 'Sri Ramachandra Medical Centre', 'Hospital', 700),
(13, 'Sankara Nethralaya', 'Eye Hospital', 250),
(14, 'P.D. Hinduja Hospital', 'Multi-Specialty Hospital', 300),

(15, 'Care Hospital', 'Multi-Specialty Hospital', 350),
(16, 'Jaypee Hospital', 'Multi-Specialty Hospital', 200),
(17, 'Sitaram Bhartia Institute of Science and Research', 'Hospital', 100),
(18, 'HCG Cancer Centre', 'Cancer Hospital', 150),
(19, 'Aster CMI Hospital', 'Multi-Specialty Hospital', 250),
(20, 'Asian Institute of Medical Sciences', 'Multi-Specialty Hospital', 400),
(21, 'Narayana Institute of Cardiac Sciences', 'Heart Hospital', 200),
(22, 'Apollo Spectra Hospitals', 'Surgical Hospital', 150),
(23, 'Sahyadri Hospital', 'Multi-Specialty Hospital', 300),
(24, 'MGM Healthcare', 'Multi-Specialty Hospital', 400),
(25, 'MediHope Super Specialty Hospital', 'Multi-Specialty Hospital', 200),
(26, 'BLK Super Specialty Hospital', 'Multi-Specialty Hospital', 300),
(27, 'Sri Aurobindo Institute of Medical Sciences', 'Hospital', 400),
(28, 'Sankalp Hospital', 'Multi-Specialty Hospital', 150),
(29, 'Jaslok Hospital', 'Multi-Specialty Hospital', 600),
(30, 'Indraprastha Apollo Hospital', 'Multi-Specialty Hospital', 500),
(31, 'Hiranandani Hospital', 'Multi-Specialty Hospital', 300),
(32, 'Vijaya Medical Centre', 'Hospital', 250),
(33, 'Reddy Hospitals', 'Multi-Specialty Hospital', 150),
(34, 'Fortis Escorts Heart Institute', 'Heart Hospital', 250),
(35, 'Yashoda Hospitals', 'Multi-Specialty Hospital', 400),
(36, 'Zydus Hospitals', 'Multi-Specialty Hospital', 200),
(37, 'Vivekananda Hospital', 'Multi-Specialty Hospital', 300),

(38, 'St. John’s Medical College Hospital', 'Hospital', 500),
(39, 'Sanjivani Hospital', 'Multi-Specialty Hospital', 150),
(40, 'Bansal Hospital', 'Multi-Specialty Hospital', 200),
(41, 'Max Healthcare', 'Multi-Specialty Hospital', 600),
(42, 'Wockhardt Hospitals', 'Multi-Specialty Hospital', 350),
(43, 'Manipal Comprehensive Cancer Care', 'Cancer Hospital', 150),
(44, 'Heritage Hospital', 'Multi-Specialty Hospital', 100),
(45, 'Lifecare Hospital', 'Multi-Specialty Hospital', 200),
(46, 'Oasis Hospital', 'Multi-Specialty Hospital', 300),
(47, 'KIMS Hospital', 'Multi-Specialty Hospital', 500),
(48, 'Fortis La Femme Hospital', 'Women’s Hospital', 200),
(49, 'St. Thomas Hospital', 'Hospital', 400),
(50, 'Shalby Hospitals', 'Multi-Specialty Hospital', 350),
(51, 'Health City', 'Multi-Specialty Hospital', 300),
(52, 'Cloudnine Hospital', 'Women’s Hospital', 150),
(53, 'Sanghvi Hospital', 'Multi-Specialty Hospital', 200),
(54, 'Mindsprings Hospital', 'Psychiatric Hospital', 100),
(55, 'Sanjeevani Hospital', 'Multi-Specialty Hospital', 300),
(56, 'Swastik Hospital', 'Multi-Specialty Hospital', 150),
(57, 'Puspa Hospital', 'Multi-Specialty Hospital', 250),
(58, 'LifeCare Hospitals', 'Multi-Specialty Hospital', 100),
(59, 'Shanti Nursing Home', 'Nursing Home', 50),
(60, 'Dr. Lal PathLabs', 'Diagnostics Center', 0),
(61, 'Max HealthCare', 'Multi-Specialty Hospital', 600),
(62, 'Srinivas Hospital', 'Multi-Specialty Hospital', 200),
(63, 'Star Hospitals', 'Multi-Specialty Hospital', 150),
(64, 'Siddharth Hospital', 'Multi-Specialty Hospital', 250),
(65, 'Care Clinic', 'Clinic', 10),

(66, 'Sankalp Nursing Home', 'Nursing Home', 30),
(67, 'Karnataka Hospital', 'Multi-Specialty Hospital', 400),
(68, 'Shraddha Hospital', 'Multi-Specialty Hospital', 300),
(69, 'Prashanth Hospital', 'Multi-Specialty Hospital', 200),
(70, 'Radiant Hospital', 'Multi-Specialty Hospital', 100),
(71, 'Sarvodaya Hospital', 'Multi-Specialty Hospital', 300),
(72, 'Venkateshwara Hospital', 'Multi-Specialty Hospital', 500),
(73, 'Kasturba Hospital', 'Hospital', 600),
(74, 'Karnavati Hospital', 'Multi-Specialty Hospital', 250),
(75, 'Muktai Hospital', 'Multi-Specialty Hospital', 300),
(76, 'Vatsalya Hospital', 'Multi-Specialty Hospital', 150),
(77, 'Nandini Hospital', 'Multi-Specialty Hospital', 200),
(78, 'Gujarat Hospital', 'Multi-Specialty Hospital', 400),
(79, 'Patan Hospital', 'Multi-Specialty Hospital', 100),
(80, 'Sushrut Hospital', 'Multi-Specialty Hospital', 300),
(81, 'Dhanvantri Hospital', 'Multi-Specialty Hospital', 600),
(82, 'Universal Hospital', 'Multi-Specialty Hospital', 250),
(83, 'Yashoda Cancer Institute', 'Cancer Hospital', 100),
(84, 'Jeevan Hospital', 'Multi-Specialty Hospital', 300),
(85, 'Om Hospital', 'Multi-Specialty Hospital', 500),
(86, 'Gleneagles Global Health City', 'Multi-Specialty Hospital',
700),
(87, 'Pyramid Hospital', 'Multi-Specialty Hospital', 200),
(88, 'Sai Hospital', 'Multi-Specialty Hospital', 100),
(89, 'Shubham Hospital', 'Multi-Specialty Hospital', 200),
(90, 'Srinivasa Hospital', 'Multi-Specialty Hospital', 300),
(91, 'MediHelp Hospital', 'Multi-Specialty Hospital', 500),
(92, 'Eden Hospital', 'Multi-Specialty Hospital', 600),
(93, 'Medicure Hospital', 'Multi-Specialty Hospital', 350),

(94, 'Columbia Asia Hospital', 'Multi-Specialty Hospital', 400),
(95, 'Pushpanjali Hospital', 'Multi-Specialty Hospital', 250),
(96, 'Chaitanya Hospital', 'Multi-Specialty Hospital', 100),
(97, 'Arogyam Hospital', 'Multi-Specialty Hospital', 300),
(98, 'Motherhood Hospital', 'Women's Hospital', 200),
(99, 'Sunshine Hospital', 'Multi-Specialty Hospital', 500),
(100, 'Jaypee Hospital', 'Multi-Specialty Hospital', 400);

6) Government_Policy Table

INSERT INTO Government_Policy (Policy_ID, Policy_Name, Policy_Type, State_ID) VALUES
(1, 'Migration Support Scheme', 'Migration', 1),
(2, 'Interstate Migrant Workers Act', 'Migration', 3),
(3, 'Bihar Migrant Labour Welfare Program', 'Migration', 4),
(4, 'Chhattisgarh Migrant Assistance', 'Migration', 5),
(5, 'Goa Migrant Worker Act', 'Migration', 6),
(6, 'Gujarat Migrant Welfare Board', 'Migration', 7),
(7, 'Haryana Migrant Worker Program', 'Migration', 8),
(8, 'Himachal Pradesh Migrant Assistance', 'Migration', 9),
(9, 'Jharkhand Migrant Support', 'Migration', 10),
(10, 'Karnataka Migrant Worker Policy', 'Migration', 11),
(11, 'Kerala Migrant Welfare Program', 'Migration', 12),
(12, 'Madhya Pradesh Migration Assistance', 'Migration', 13),
(13, 'Maharashtra Migrant Worker Act', 'Migration', 14),
(14, 'Odisha Migrant Labour Welfare Scheme', 'Migration', 19),
(15, 'Punjab Migrant Support Program', 'Migration', 20),
(16, 'Rajasthan Migrant Worker Program', 'Migration', 21),
(17, 'Tamil Nadu Migrant Assistance', 'Migration', 23),

(18, 'Telangana Migrant Welfare Act', 'Migration', 24),
(19, 'West Bengal Migrant Assistance', 'Migration', 28),
(20, 'Delhi Migration Support Policy', 'Migration', 33),
(21, 'Andhra Pradesh Job Creation Scheme', 'Job', 1),
(22, 'Arunachal Pradesh Employment Program', 'Job', 2),
(23, 'Assam Job Guarantee Act', 'Job', 3),
(24, 'Bihar Skill Development Mission', 'Job', 4),
(25, 'Chhattisgarh Employment Opportunity Scheme', 'Job', 5),
(26, 'Goa Youth Employment Program', 'Job', 6),
(27, 'Gujarat Industrial Job Scheme', 'Job', 7),
(28, 'Haryana Skill Development', 'Job', 8),
(29, 'Himachal Pradesh Job Assurance Program', 'Job', 9),
(30, 'Jharkhand Job Training Scheme', 'Job', 10),
(31, 'Karnataka Employment Guarantee', 'Job', 11),
(32, 'Kerala Startup Job Program', 'Job', 12),
(33, 'Madhya Pradesh Job Creation Mission', 'Job', 13),
(34, 'Maharashtra Rural Employment Scheme', 'Job', 14),
(35, 'Punjab Employment Guarantee', 'Job', 20),
(36, 'Rajasthan Job Training Initiative', 'Job', 21),
(37, 'Sikkim Youth Employment Mission', 'Job', 22),
(38, 'Tamil Nadu Skill Development', 'Job', 23),
(39, 'Uttar Pradesh Job Support Scheme', 'Job', 26),
(40, 'West Bengal Employment Mission', 'Job', 28),
(41, 'Andhra Pradesh Free Education Scheme', 'Education', 1),
(42, 'Assam Scholarship Program', 'Education', 3),
(43, 'Bihar Free Tuition Program', 'Education', 4),
(44, 'Chhattisgarh Education Loan Scheme', 'Education', 5),
(45, 'Goa Student Support Program', 'Education', 6),
(46, 'Gujarat Educational Aid Scheme', 'Education', 7),

(47, 'Haryana Scholarship Program', 'Education', 8),
(48, 'Himachal Pradesh Free Education Act', 'Education', 9),
(49, 'Jharkhand Tuition Fee Waiver', 'Education', 10),
(50, 'Karnataka Merit Scholarship', 'Education', 11),
(51, 'Kerala Student Welfare Scheme', 'Education', 12),
(52, 'Madhya Pradesh Scholarship Scheme', 'Education', 13),
(53, 'Maharashtra Education Aid Program', 'Education', 14),
(54, 'Manipur Free Education Initiative', 'Education', 15),
(55, 'Nagaland Scholarship Program', 'Education', 18),
(56, 'Odisha Educational Support Scheme', 'Education', 19),
(57, 'Punjab Student Welfare Act', 'Education', 20),
(58, 'Rajasthan School Support Scheme', 'Education', 21),
(59, 'Tamil Nadu Education Assistance', 'Education', 23),
(60, 'Uttar Pradesh Merit Scholarship', 'Education', 26),
(61, 'Andhra Pradesh Health Insurance Scheme', 'Health', 1),
(62, 'Arunachal Pradesh Medical Support', 'Health', 2),
(63, 'Assam Health Protection Scheme', 'Health', 3),
(64, 'Bihar Health Assurance Plan', 'Health', 4),
(65, 'Chhattisgarh Rural Health Initiative', 'Health', 5),
(66, 'Goa Free Health Check-up Program', 'Health', 6),
(67, 'Gujarat Medical Assistance Scheme', 'Health', 7),
(68, 'Haryana Healthcare Program', 'Health', 8),
(69, 'Himachal Pradesh Health Initiative', 'Health', 9),
(70, 'Jharkhand Rural Health Scheme', 'Health', 10),
(71, 'Karnataka Health Insurance Program', 'Health', 11),
(72, 'Kerala Healthcare Assistance', 'Health', 12),
(73, 'Madhya Pradesh Health Coverage Program', 'Health', 13),
(74, 'Maharashtra Health Insurance Act', 'Health', 14),
(75, 'Odisha Health and Wellness Program', 'Health', 19),

(76, 'Punjab Health Assurance Scheme', 'Health', 20),
(77, 'Rajasthan Health Welfare Program', 'Health', 21),
(78, 'Tamil Nadu Healthcare Mission', 'Health', 23),
(79, 'Uttarakhand Health Insurance Plan', 'Health', 27),
(80, 'West Bengal Medical Support Scheme', 'Health', 28),
(81, 'Delhi Migrant Welfare Act', 'Migration', 33),
(82, 'Jammu and Kashmir Employment Guarantee', 'Job', 35),
(83, 'Tripura Free Education Program', 'Education', 25),
(84, 'Ladakh Health Support Plan', 'Health', 36),
(85, 'Puducherry Skill Development Scheme', 'Job', 34),
(86, 'Lakshadweep Student Support Program', 'Education', 32),
(87, 'Dadra and Nagar Haveli Job Opportunity Scheme', 'Job', 31),
(88, 'Andaman and Nicobar Health Program', 'Health', 29),
(89, 'Chandigarh Migrant Assistance Program', 'Migration', 30),
(90, 'Sikkim Education for All Initiative', 'Education', 22),
(91, 'Mizoram Employment Assistance', 'Job', 17),
(92, 'Manipur Education Support Scheme', 'Education', 15),
(93, 'Nagaland Healthcare Mission', 'Health', 18),
(94, 'Meghalaya Job Training Program', 'Job', 16),
(95, 'Kerala Rural Education Fund', 'Education', 12),
(96, 'Punjab Migration Assistance', 'Migration', 20),
(97, 'Odisha Job Opportunity Scheme', 'Job', 19),
(98, 'Tamil Nadu Rural Health Program', 'Health', 23),
(99, 'Uttar Pradesh Student Loan Support', 'Education', 26),
(100, 'West Bengal Skill Development Initiative', 'Job', 28);

7) Climate Table

INSERT INTO Climate (City_ID, Policy_ID, Average_Temp, Climate_Type) VALUES
(1, 1, 25.0, 'Tropical'),
(1, 2, 26.5, 'Tropical'),
(1, 3, 24.0, 'Tropical'),
(2, 4, 30.0, 'Tropical'),
(2, 5, 31.0, 'Tropical'),
(2, 6, 28.5, 'Tropical'),
(3, 7, 14.0, 'Temperate'),
(3, 8, 15.0, 'Temperate'),
(3, 9, 13.5, 'Temperate'),
(4, 10, 20.0, 'Temperate'),
(4, 11, 21.0, 'Temperate'),
(4, 12, 19.5, 'Temperate'),
(5, 13, 8.0, 'Cold'),
(5, 14, 9.0, 'Cold'),
(5, 15, 7.5, 'Cold'),
(6, 16, 27.0, 'Tropical'),
(6, 17, 26.5, 'Tropical'),
(6, 18, 28.5, 'Tropical'),
(7, 19, 15.0, 'Mediterranean'),
(7, 20, 16.5, 'Mediterranean'),
(7, 21, 14.5, 'Mediterranean'),
(8, 22, 12.0, 'Cold'),
(8, 23, 11.0, 'Cold'),
(8, 24, 10.5, 'Cold'),
(9, 25, 22.0, 'Tropical'),
(9, 26, 21.5, 'Tropical'),

(9, 27, 23.0, 'Tropical'),
(10, 28, 18.0, 'Temperate'),
(10, 29, 19.0, 'Temperate'),
(10, 30, 17.5, 'Temperate'),
(11, 31, 29.0, 'Tropical'),
(11, 32, 28.0, 'Tropical'),
(11, 33, 30.0, 'Tropical'),
(12, 34, 9.5, 'Cold'),
(12, 35, 8.5, 'Cold'),
(12, 36, 10.0, 'Cold'),
(13, 37, 14.0, 'Temperate'),
(13, 38, 15.5, 'Temperate'),
(13, 39, 13.0, 'Temperate'),
(14, 40, 31.0, 'Tropical'),
(14, 41, 32.0, 'Tropical'),
(14, 42, 30.5, 'Tropical'),
(15, 43, 11.0, 'Cold'),
(15, 44, 12.5, 'Cold'),
(15, 45, 10.0, 'Cold'),
(16, 46, 26.0, 'Tropical'),
(16, 47, 25.0, 'Tropical'),
(16, 48, 27.5, 'Tropical'),
(17, 49, 8.0, 'Cold'),
(17, 50, 9.5, 'Cold'),
(17, 51, 7.5, 'Cold'),
(18, 52, 19.0, 'Temperate'),
(18, 53, 18.5, 'Temperate'),
(18, 54, 20.0, 'Temperate'),
(19, 55, 32.0, 'Tropical'),

(19, 56, 31.5, 'Tropical'),
(19, 57, 30.0, 'Tropical'),
(20, 58, 14.5, 'Mediterranean'),
(20, 59, 15.0, 'Mediterranean'),
(20, 60, 13.5, 'Mediterranean'),
(21, 61, 12.0, 'Cold'),
(21, 62, 10.0, 'Cold'),
(21, 63, 11.0, 'Cold'),
(22, 64, 28.0, 'Tropical'),
(22, 65, 29.5, 'Tropical'),
(22, 66, 27.0, 'Tropical'),
(23, 67, 17.0, 'Temperate'),
(23, 68, 16.5, 'Temperate'),
(23, 69, 18.5, 'Temperate'),
(24, 70, 31.0, 'Tropical'),
(24, 71, 32.5, 'Tropical'),
(24, 72, 30.5, 'Tropical'),
(25, 73, 8.0, 'Cold'),
(25, 74, 9.0, 'Cold'),
(25, 75, 7.0, 'Cold'),
(26, 76, 15.0, 'Mediterranean'),
(26, 77, 14.0, 'Mediterranean'),
(26, 78, 16.0, 'Mediterranean'),
(27, 79, 22.0, 'Tropical'),
(27, 80, 21.0, 'Tropical'),
(27, 81, 23.0, 'Tropical'),
(28, 82, 13.5, 'Temperate'),
(28, 83, 14.0, 'Temperate'),
(28, 84, 12.0, 'Temperate'),

(29, 85, 30.0, 'Tropical'),
(29, 86, 29.0, 'Tropical'),
(29, 87, 31.0, 'Tropical'),
(30, 88, 9.0, 'Cold'),
(30, 89, 8.5, 'Cold'),
(30, 90, 10.0, 'Cold'),
(31, 91, 17.0, 'Temperate'),
(31, 92, 18.0, 'Temperate'),
(31, 93, 16.5, 'Temperate'),
(32, 94, 26.0, 'Tropical'),
(32, 95, 25.5, 'Tropical'),
(32, 96, 27.5, 'Tropical'),
(33, 97, 12.0, 'Mediterranean'),
(33, 98, 11.0, 'Mediterranean'),
(33, 99, 13.0, 'Mediterranean'),
(34, 100, 30.0, 'Tropical');

8) Youngster Table

INSERT INTO Youngster (Youngster_ID, name, email, gender, Education_ID, Employment_ID, place_of_origin, Date_Of_Birth) VALUES
(1, 'Aarav Sharma', 'aarav.sharma@gmail.com', 'Male', 12, 1, 'Delhi', '1998-01-15'),
(2, 'Ananya Gupta', 'ananya.gupta@gmail.com', 'Female', 23, 2, 'Mumbai', '1999-02-25'),
(3, 'Vihaan Kumar', 'vihaan.kumar@gmail.com', 'Male', 34, 3, 'Bangalore', '2000-03-05'),
(4, 'Aanya Verma', 'aanya.verma@gmail.com', 'Female', 45, 4, 'Chennai', '1997-04-10'),

(5, 'Arjun Reddy', 'arjun.reddy@gmail.com', 'Male', 56, 5, 'Hyderabad', '2001-05-22'),
(6, 'Pooja Singh', 'pooja.singh@gmail.com', 'Female', 67, 6, 'Kolkata', '1995-06-30'),
(7, 'Kabir Khan', 'kabir.khan@gmail.com', 'Male', 78, 7, 'Ahmedabad', '1998-07-15'),
(8, 'Diya Mehta', 'diya.mehta@gmail.com', 'Female', 89, 8, 'Surat', '1999-08-12'),
(9, 'Rohan Patel', 'rohan.patel@gmail.com', 'Male', 92, 9, 'Jaipur', '2000-09-09'),
(10, 'Meera Nair', 'meera.nair@gmail.com', 'Female', 11, 10, 'Pune', '1996-10-01'),
(11, 'Sai Kumar', 'sai.kumar@gmail.com', 'Male', 22, 11, 'Coimbatore', '1994-11-11'),
(12, 'Nisha Yadav', 'nisha.yadav@gmail.com', 'Female', 33, 12, 'Lucknow', '1998-12-21'),
(13, 'Ishaan Joshi', 'ishaan.joshi@gmail.com', 'Male', 44, 13, 'Kochi', '2001-01-03'),
(14, 'Sneha Desai', 'sneha.desai@gmail.com', 'Female', 55, 14, 'Visakhapatnam', '1997-02-17'),
(15, 'Akash Bansal', 'akash.bansal@gmail.com', 'Male', 66, 15, 'Nagpur', '2000-03-27'),
(16, 'Tara Rani', 'tara.rani@gmail.com', 'Female', 77, 16, 'Vadodara', '1999-04-30'),
(17, 'Karan Singh', 'karan.singh@gmail.com', 'Male', 88, 17, 'Indore', '1995-05-22'),
(18, 'Aditi Gupta', 'aditi.gupta@gmail.com', 'Female', 99, 18, 'Rajkot', '1998-06-15'),

(19, 'Omkar Patil', 'omkar.patil@gmail.com', 'Male', 10, 19, 'Nashik', '2000-07-01'),
(20, 'Riya Sharma', 'riya.sharma@gmail.com', 'Female', 21, 20, 'Faridabad', '1997-08-12'),
(21, 'Aravind Iyer', 'aravind.iyer@gmail.com', 'Male', 32, 21, 'Mysuru', '1996-09-25'),
(22, 'Vaishali Yadav', 'vaishali.yadav@gmail.com', 'Female', 43, 22, 'Bhopal', '1999-10-14'),
(23, 'Devendra Rao', 'devendra.rao@gmail.com', 'Male', 54, 23, 'Thane', '1998-11-30'),
(24, 'Simran Khanna', 'simran.khanna@gmail.com', 'Female', 65, 24, 'Jodhpur', '1994-12-05'),
(25, 'Nitin Malhotra', 'nitin.malhotra@gmail.com', 'Male', 76, 25, 'Dehradun', '1999-01-20'),
(26, 'Preeti Chawla', 'preeti.chawla@gmail.com', 'Female', 87, 26, 'Agra', '1996-02-10'),
(27, 'Ravi Kumar', 'ravi.kumar@gmail.com', 'Male', 98, 27, 'Raipur', '2000-03-15'),
(28, 'Tanvi Jain', 'tanvi.jain@gmail.com', 'Female', 9, 28, 'Mangalore', '1995-04-18'),
(29, 'Harsh Mehta', 'harsh.mehta@gmail.com', 'Male', 20, 29, 'Guwahati', '2002-05-25'),
(30, 'Sonal Gupta', 'sonal.gupta@gmail.com', 'Female', 31, 30, 'Chandigarh', '1998-06-10'),
(31, 'Neeraj Gupta', 'neeraj.gupta@gmail.com', 'Male', 42, 31, 'Srinagar', '1997-07-01'),
(32, 'Aastha Shah', 'aastha.shah@gmail.com', 'Female', 53, 32, 'Bhavnagar', '1999-08-15'),

(33, 'Mohan Tiwari', 'mohan.tiwari@gmail.com', 'Male', 64, 33, 'Bhubaneswar', '1996-09-10'),
(34, 'Sonali Roy', 'sonali.roy@gmail.com', 'Female', 75, 34, 'Patna', '1998-10-20'),
(35, 'Ajay Joshi', 'ajay.joshi@gmail.com', 'Male', 86, 35, 'Navi Mumbai', '1995-11-05'),
(36, 'Pinky Sharma', 'pinky.sharma@gmail.com', 'Female', 97, 36, 'Chennai', '2001-12-25'),
(37, 'Rishabh Sharma', 'rishabh.sharma@gmail.com', 'Male', 8, 37, 'Noida', '1998-01-30'),
(38, 'Tanya Verma', 'tanya.verma@gmail.com', 'Female', 19, 38, 'Lucknow', '1999-02-15'),
(39, 'Deepak Singh', 'deepak.singh@gmail.com', 'Male', 30, 39, 'Ghaziabad', '1997-03-05'),
(40, 'Neha Bansal', 'neha.bansal@gmail.com', 'Female', 41, 40, 'Faridabad', '1996-04-22'),
(41, 'Vivek Reddy', 'vivek.reddy@gmail.com', 'Male', 52, 41, 'Gurgaon', '2000-05-20'),
(42, 'Pragya Kapoor', 'pragya.kapoor@gmail.com', 'Female', 63, 42, 'Meerut', '1995-06-25'),
(43, 'Sidharth Kumar', 'sidharth.kumar@gmail.com', 'Male', 74, 43, 'Indore', '1998-07-15'),
(44, 'Riya Mehta', 'riya.mehta@gmail.com', 'Female', 85, 44, 'Kochi', '1999-08-30'),
(45, 'Aakash Iyer', 'aakash.iyer@gmail.com', 'Male', 96, 45, 'Nashik', '1996-09-05'),
(46, 'Deepika Agarwal', 'deepika.agarwal@gmail.com', 'Female', 7, 46, 'Jodhpur', '1999-10-11'),

(47, 'Rahul Sharma', 'raahul.sharma@gmail.com', 'Male', 18, 47, 'Jaipur', '1998-11-20'),
(48, 'Sakshi Singh', 'saakshi.singh@gmail.com', 'Female', 29, 48, 'Surat', '1997-12-01'),
(49, 'Karan Yadav', 'karan.yadav@gmail.com', 'Male', 40, 49, 'Delhi', '1995-01-15'),
(50, 'Megha Nair', 'megha.nair@gmail.com', 'Female', 51, 50, 'Bangalore', '1999-02-20'),
(51, 'Shivam Patel', 'shivam.patel@gmail.com', 'Male', 62, 51, 'Ahmedabad', '1996-03-22'),
(52, 'Aditi Verma', 'aditi.verma@gmail.com', 'Female', 73, 52, 'Pune', '1998-04-25'),
(53, 'Manoj Kumar', 'manoj.kumar@gmail.com', 'Male', 84, 53, 'Mumbai', '2000-05-30'),
(54, 'Priya Jain', 'priya.jain@gmail.com', 'Female', 95, 54, 'Kolkata', '1997-06-28'),
(55, 'Vikas Reddy', 'vikas.reddy@gmail.com', 'Male', 6, 55, 'Chennai', '1998-07-10'),
(56, 'Simran Kaur', 'simran.kaur@gmail.com', 'Female', 17, 56, 'Coimbatore', '1996-08-15'),
(57, 'Kunal Gupta', 'kunal.gupta@gmail.com', 'Male', 28, 57, 'Hyderabad', '1999-09-12'),
(58, 'Neha Rani', 'neha.rani@gmail.com', 'Female', 39, 58, 'Nagpur', '2000-10-19'),
(59, 'Ravi Kumar', 'ravii.kumar@gmail.com', 'Male', 50, 59, 'Ahmedabad', '1998-11-25'),
(60, 'Shreya Singh', 'shreya.singh@gmail.com', 'Female', 61, 60, 'Delhi', '1996-12-30'),

(61, 'Amit Desai', 'amit.desai@gmail.com', 'Male', 72, 61, 'Jaipur', '1995-01-11'),
(62, 'Poonam Thakur', 'poonam.thakur@gmail.com', 'Female', 83, 62, 'Faridabad', '1998-02-01'),
(63, 'Tarun Verma', 'tarun.verma@gmail.com', 'Male', 94, 63, 'Mumbai', '1999-03-15'),
(64, 'Ritika Agarwal', 'ritika.agarwal@gmail.com', 'Female', 5, 64, 'Lucknow', '1997-04-20'),
(65, 'Rajesh Singh', 'rajesh.singh@gmail.com', 'Male', 16, 65, 'Raipur', '1999-05-30'),
(66, 'Suman Saini', 'suman.saini@gmail.com', 'Female', 27, 66, 'Bhopal', '2001-06-15'),
(67, 'Nikhil Yadav', 'nikhil.yadav@gmail.com', 'Male', 38, 67, 'Indore', '1995-07-01'),
(68, 'Kajal Sharma', 'kajal.sharma@gmail.com', 'Female', 49, 68, 'Pune', '1996-08-20'),
(69, 'Apoorva Kaur', 'apoorva.kaur@gmail.com', 'Female', 60, 69, 'Nagpur', '1998-09-11'),
(70, 'Gaurav Yadav', 'gaurav.yadav@gmail.com', 'Male', 71, 70, 'Delhi', '2000-10-12'),
(71, 'Shivani Sharma', 'shivani.sharma@gmail.com', 'Female', 82, 71, 'Chennai', '1996-11-15'),
(72, 'Akhil Reddy', 'akhil.reddy@gmail.com', 'Male', 93, 72, 'Kolkata', '1998-12-01'),
(73, 'Naina Gupta', 'naina.gupta@gmail.com', 'Female', 4, 73, 'Bangalore', '1995-01-21'),
(74, 'Rishab Singh', 'rishab.singh@gmail.com', 'Male', 15, 74, 'Hyderabad', '1999-02-18'),

(75, 'Anjali Yadav', 'anjali.yadav@gmail.com', 'Female', 26, 75, 'Ahmedabad', '1996-03-10'),
(76, 'Harish Rao', 'harish.rao@gmail.com', 'Male', 37, 76, 'Raipur', '1997-04-05'),
(77, 'Diksha Mehta', 'diksha.mehta@gmail.com', 'Female', 48, 77, 'Faridabad', '1998-05-15'),
(78, 'Rahul Sharma', 'rahul.sharma@gmail.com', 'Male', 59, 78, 'Bhopal', '1995-06-20'),
(79, 'Parul Yadav', 'parul.yadav@gmail.com', 'Female', 70, 79, 'Coimbatore', '1999-07-15'),
(80, 'Ravindra Singh', 'ravindra.singh@gmail.com', 'Male', 81, 80, 'Chennai', '1996-08-01'),
(81, 'Vishakha Patel', 'vishakha.patel@gmail.com', 'Female', 92, 81, 'Delhi', '1998-09-25'),
(82, 'Himanshu Joshi', 'himanshu.joshi@gmail.com', 'Male', 3, 82, 'Indore', '1995-10-11'),
(83, 'Shweta Mehta', 'shweta.mehta@gmail.com', 'Female', 14, 83, 'Lucknow', '1996-11-30'),
(84, 'Dev Yadav', 'dev.yadav@gmail.com', 'Male', 25, 84, 'Jaipur', '1999-12-05'),
(85, 'Aditi Singh', 'aditi.singh@gmail.com', 'Female', 36, 85, 'Pune', '1995-01-15'),
(86, 'Raj Kumar', 'raj.kumar@gmail.com', 'Male', 47, 86, 'Nashik', '1999-02-20'),
(87, 'Nisha Kaur', 'nisha.kaur@gmail.com', 'Female', 58, 87, 'Ahmedabad', '2000-03-30'),
(88, 'Sandeep Verma', 'sandeep.verma@gmail.com', 'Male', 69, 88, 'Surat', '1996-04-10'),

(89, 'Kavya Agarwal', 'kavya.agarwal@gmail.com', 'Female', 70, 89, 'Coimbatore', '1998-05-11'),
(90, 'Mohit Iyer', 'mohit.iyer@gmail.com', 'Male', 71, 90, 'Delhi', '1999-06-12'),
(91, 'Vani Sharma', 'vani.sharma@gmail.com', 'Female', 72, 91, 'Mumbai', '1996-07-15'),
(92, 'Nitin Singh', 'nitin.singh@gmail.com', 'Male', 73, 92, 'Bangalore', '1998-08-16'),
(93, 'Meenal Patel', 'meenal.patel@gmail.com', 'Female', 74, 93, 'Chennai', '1999-09-17'),
(94, 'Rajeev Kumar', 'rajeeve.kumar@gmail.com', 'Male', 75, 94, 'Hyderabad', '1996-10-18'),
(95, 'Gurpreet Singh', 'gurpreet.singh@gmail.com', 'Male', 76, 95, 'Kolkata', '1995-11-19'),
(96, 'Rohit Yadav', 'rohit.yadav@gmail.com', 'Male', 77, 96, 'Pune', '1998-12-20'),
(97, 'Bhumika Jain', 'bhumika.jain@gmail.com', 'Female', 78, 97, 'Ahmedabad', '1996-01-21'),
(98, 'Sakshi Singh', 'sakshi.singh@gmail.com', 'Female', 79, 98, 'Coimbatore', '1999-02-22'),
(99, 'Harish Gupta', 'harish.gupta@gmail.com', 'Male', 80, 99, 'Delhi', '1995-03-23'),
(100, 'Priyanka Reddy', 'priyanka.reddy@gmail.com', 'Female', 81, 100, 'Jaipur', '1998-04-24');

9) Employment

```
INSERT INTO Employment (Job_ID, Industry_Type, Salary,
Start_Date, End_Date) VALUES
(1, 'Information Technology', 60000.00, '2022-01-01',
'2025-01-01'),
(2, 'Healthcare', 50000.00, '2021-02-01', '2024-12-01'),
(3, 'Finance', 70000.00, '2023-03-01', '2025-03-01'),
(4, 'Education', 45000.00, '2022-04-01', NULL),
(5, 'Construction', 55000.00, '2020-05-01', '2023-06-01'),
(6, 'Manufacturing', 50000.00, '2019-06-01', NULL),
(7, 'Retail', 40000.00, '2023-07-01', '2025-07-01'),
(8, 'Hospitality', 35000.00, '2020-08-01', '2023-08-01'),
(9, 'Transportation', 45000.00, '2022-09-01', NULL),
(10, 'Telecommunications', 65000.00, '2021-10-01', '2024-10-01'),
(11, 'Real Estate', 70000.00, '2022-11-01', '2025-11-01'),
(12, 'Legal', 75000.00, '2020-12-01', NULL),
(13, 'Marketing', 50000.00, '2023-01-01', '2024-12-01'),
(14, 'Media', 40000.00, '2021-02-01', NULL),
(15, 'Agriculture', 30000.00, '2020-03-01', '2023-03-01'),
(16, 'Information Security', 90000.00, '2023-04-01', '2025-04-01'),
(17, 'Pharmaceuticals', 80000.00, '2021-05-01', NULL),
(18, 'Aerospace', 75000.00, '2022-06-01', '2024-06-01'),
(19, 'Biotechnology', 85000.00, '2023-07-01', '2025-07-01'),
(20, 'Consulting', 65000.00, '2022-08-01', NULL),
(21, 'Entertainment', 55000.00, '2023-09-01', NULL),
(22, 'Insurance', 60000.00, '2021-10-01', '2024-10-01'),
(23, 'Textiles', 40000.00, '2022-11-01', NULL),
(24, 'Food Service', 35000.00, '2021-12-01', '2023-12-01'),
```

(25, 'Construction Management', 60000.00, '2023-01-01',
'2025-01-01'),
(26, 'Civil Engineering', 70000.00, '2022-02-01', '2024-02-01'),
(27, 'Environmental Science', 50000.00, '2023-03-01',
'2024-03-01'),
(28, 'Data Analysis', 80000.00, '2023-04-01', NULL),
(29, 'Web Development', 60000.00, '2022-05-01', '2024-05-01'),
(30, 'Graphic Design', 40000.00, '2023-06-01', NULL),
(31, 'User Experience Design', 70000.00, '2021-07-01',
'2024-07-01'),
(32, 'Content Creation', 30000.00, '2022-08-01', NULL),
(33, 'Event Planning', 35000.00, '2020-09-01', NULL),
(34, 'Sales', 45000.00, '2021-10-01', '2024-10-01'),
(35, 'Human Resources', 50000.00, '2023-01-01', NULL),
(36, 'Supply Chain Management', 60000.00, '2021-02-01', NULL),
(37, 'Public Relations', 55000.00, '2022-03-01', '2024-03-01'),
(38, 'Nonprofit Management', 40000.00, '2020-04-01', NULL),
(39, 'Retail Management', 45000.00, '2022-05-01', NULL),
(40, 'Property Management', 50000.00, '2023-06-01', '2024-06-01'),
(41, 'Event Management', 35000.00, '2022-07-01', NULL),
(42, 'Business Development', 60000.00, '2021-08-01',
'2024-08-01'),
(43, 'Research and Development', 70000.00, '2020-09-01', NULL),
(44, 'Project Management', 65000.00, '2023-10-01', '2025-10-01'),
(45, 'Software Development', 80000.00, '2022-11-01', NULL),
(46, 'Data Science', 85000.00, '2023-12-01', NULL),
(47, 'Cybersecurity', 90000.00, '2023-01-01', '2025-01-01'),
(48, 'Cloud Computing', 70000.00, '2021-02-01', NULL),
(49, 'Artificial Intelligence', 95000.00, '2022-03-01', '2024-03-01'),

(50, 'Machine Learning', 80000.00, '2023-04-01', NULL),
(51, 'Blockchain', 85000.00, '2020-05-01', '2024-05-01'),
(52, 'Robotics', 90000.00, '2021-06-01', NULL),
(53, 'Internet of Things', 95000.00, '2023-07-01', '2025-07-01'),
(54, 'Augmented Reality', 70000.00, '2021-08-01', NULL),
(55, 'Virtual Reality', 60000.00, '2020-09-01', '2023-09-01'),
(56, 'Big Data', 80000.00, '2023-10-01', NULL),
(57, 'Digital Marketing', 70000.00, '2021-11-01', '2024-11-01'),
(58, 'E-commerce', 75000.00, '2022-12-01', NULL),
(59, 'SEO', 65000.00, '2023-01-01', NULL),
(60, 'Content Marketing', 60000.00, '2020-02-01', '2023-02-01'),
(61, 'Social Media Management', 55000.00, '2021-03-01', NULL),
(62, 'App Development', 70000.00, '2022-04-01', '2024-04-01'),
(63, 'Quality Assurance', 65000.00, '2023-05-01', NULL),
(64, 'DevOps', 80000.00, '2020-06-01', NULL),
(65, 'Game Development', 75000.00, '2021-07-01', '2024-07-01'),
(66, 'Product Management', 90000.00, '2023-08-01', '2025-08-01'),
(67, 'Technical Support', 50000.00, '2022-09-01', NULL),
(68, 'Sales Management', 65000.00, '2021-10-01', NULL),
(69, 'Business Analysis', 70000.00, '2020-11-01', '2023-11-01'),
(70, 'Financial Analysis', 80000.00, '2023-12-01', NULL),
(71, 'Operations Management', 70000.00, '2021-01-01', NULL),
(72, 'Strategic Planning', 75000.00, '2022-02-01', NULL),
(73, 'Customer Service', 60000.00, '2020-03-01', NULL),
(74, 'Market Research', 55000.00, '2021-04-01', NULL),
(75, 'Policy Analysis', 70000.00, '2023-05-01', NULL),
(76, 'Community Development', 40000.00, '2021-06-01', NULL),
(77, 'Mental Health', 50000.00, '2020-07-01', '2023-07-01'),
(78, 'Consultative Selling', 60000.00, '2022-08-01', '2024-08-01'),

(79, 'Account Management', 55000.00, '2021-09-01', NULL),
(80, 'Risk Management', 70000.00, '2023-10-01', NULL),
(81, 'Facilities Management', 50000.00, '2021-11-01', NULL),
(82, 'Logistics', 60000.00, '2023-12-01', NULL),
(83, 'Energy Management', 75000.00, '2023-01-01', NULL),
(84, 'Health and Safety', 60000.00, '2022-02-01', '2025-02-01'),
(85, 'Environmental Engineering', 80000.00, '2021-03-01', NULL),
(86, 'Sustainability Consulting', 70000.00, '2023-04-01',
'2024-04-01'),
(87, 'Telecommunications Engineering', 85000.00, '2020-05-01',
NULL),
(88, 'Cybersecurity Analysis', 95000.00, '2022-06-01',
'2025-06-01'),
(89, 'Data Governance', 75000.00, '2021-07-01', NULL),
(90, 'Artificial Intelligence Research', 95000.00, '2023-08-01',
NULL),
(91, 'User Interface Design', 70000.00, '2022-09-01', '2024-09-01'),
(92, 'Network Administration', 60000.00, '2021-10-01', NULL),
(93, 'Health Informatics', 70000.00, '2023-11-01', NULL),
(94, 'Pharmaceutical Sales', 75000.00, '2020-12-01', '2023-12-01'),
(95, 'Regulatory Affairs', 80000.00, '2022-01-01', NULL),
(96, 'Nonprofit Fundraising', 40000.00, '2023-02-01',
'2025-02-01'),
(97, 'Training and Development', 60000.00, '2021-03-01', NULL),
(98, 'Corporate Social Responsibility', 65000.00, '2022-04-01',
NULL),
(99, 'International Relations', 70000.00, '2023-05-01', NULL),
(100, 'Business Intelligence', 80000.00, '2022-06-01', NULL);

10) Education Table

INSERT INTO Education (Education_ID, Institute_ID, City_ID, Start_Date, End_Date) VALUES
(1, 1, 15, '2019-08-01', '2022-05-31'),
(2, 2, 34, '2020-01-15', NULL),
(3, 3, 24, '2015-06-20', '2020-05-31'),
(4, 4, 127, '2021-08-01', '2023-06-30'),
(5, 5, 103, '2020-09-01', '2023-12-31'),
(6, 6, 8, '2021-05-15', NULL),
(7, 7, 104, '2018-07-20', '2022-06-30'),
(8, 8, 29, '2019-03-10', '2022-03-10'),
(9, 9, 128, '2021-08-01', NULL),
(10, 10, 105, '2017-11-15', '2020-11-15'),
(11, 11, 106, '2020-02-20', '2022-12-20'),
(12, 12, 107, '2019-04-01', NULL),
(13, 13, 24, '2016-09-01', '2019-09-01'),
(14, 14, 108, '2018-01-01', '2021-01-01'),
(15, 15, 109, '2021-02-01', NULL),
(16, 16, 71, '2020-08-15', NULL),
(17, 17, 34, '2015-05-01', '2020-05-01'),
(18, 18, 34, '2020-08-01', '2022-08-01'),
(19, 19, 34, '2019-09-10', '2021-06-30'),
(20, 20, 21, '2021-10-15', NULL),
(21, 21, 15, '2020-03-20', '2023-03-20'),
(22, 22, 29, '2015-02-01', '2018-06-30'),
(23, 23, 34, '2019-11-11', NULL),
(24, 24, 8, '2021-01-01', '2023-12-01'),
(25, 25, 71, '2018-05-20', '2021-12-31'),
(26, 26, 70, '2017-12-01', NULL),

(27, 27, 15, '2019-04-15', '2022-04-15'),
(28, 28, 24, '2016-08-01', NULL),
(29, 29, 110, '2021-03-01', '2024-02-29'),
(30, 30, 2, '2018-07-01', NULL),
(31, 31, 8, '2015-04-10', '2019-04-10'),
(32, 32, 111, '2020-09-01', NULL),
(33, 33, 104, '2017-11-01', '2020-11-01'),
(34, 34, 113, '2019-10-01', '2022-10-01'),
(35, 35, 78, '2020-06-20', NULL),
(36, 36, 109, '2019-01-15', '2023-05-15'),
(37, 37, 29, '2021-12-01', NULL),
(38, 38, 34, '2015-03-20', '2019-03-20'),
(39, 39, 115, '2020-05-01', '2023-04-30'),
(40, 40, 102, '2018-10-01', '2021-10-01'),
(41, 41, 28, '2020-04-15', NULL),
(42, 42, 116, '2016-07-01', '2019-07-01'),
(43, 43, 34, '2021-08-15', NULL),
(44, 44, 34, '2019-12-01', '2022-12-01'),
(45, 45, 86, '2017-02-10', NULL),
(46, 46, 117, '2020-03-15', '2023-09-15'),
(47, 47, 104, '2018-05-01', NULL),
(48, 48, 107, '2016-06-20', '2019-05-20'),
(49, 49, 104, '2020-07-15', NULL),
(50, 50, 24, '2015-09-01', '2019-09-01'),
(51, 51, 110, '2018-01-01', NULL),
(52, 52, 116, '2019-02-20', '2022-02-20'),
(53, 53, 123, '2021-11-11', NULL),
(54, 54, 23, '2016-03-01', NULL),
(55, 55, 29, '2020-01-10', '2023-01-10'),

(56, 56, 25, '2017-08-01', NULL),
(57, 57, 22, '2015-12-01', '2018-12-01'),
(58, 58, 34, '2019-09-20', NULL),
(59, 59, 104, '2020-05-15', NULL),
(60, 60, 8, '2015-10-01', '2019-10-01'),
(61, 61, 34, '2021-02-01', NULL),
(62, 62, 34, '2018-03-10', NULL),
(63, 63, 34, '2019-01-01', '2022-01-01'),
(64, 64, 125, '2017-11-20', NULL),
(65, 65, 126, '2020-04-01', '2023-08-01'),
(66, 66, 129, '2019-07-10', NULL),
(67, 67, 65, '2021-05-01', '2023-05-01'),
(68, 68, 11, '2016-09-01', NULL),
(69, 69, 27, '2015-06-30', '2019-06-30'),
(70, 70, 130, '2018-12-20', NULL),
(71, 71, 25, '2017-02-01', NULL),
(72, 72, 48, '2019-01-15', NULL),
(73, 73, 131, '2020-03-30', NULL),
(74, 74, 8, '2015-08-10', NULL),
(75, 75, 15, '2021-04-20', '2023-03-20'),
(76, 76, 11, '2019-05-15', NULL),
(77, 77, 129, '2020-07-01', NULL),
(78, 78, 133, '2016-10-01', '2019-10-01'),
(79, 79, 78, '2021-08-01', NULL),
(80, 80, 15, '2019-06-15', NULL),
(81, 81, 34, '2015-03-01', '2018-03-01'),
(82, 82, 13, '2020-11-10', NULL),
(83, 83, 123, '2016-07-01', NULL),
(84, 84, 135, '2017-02-20', '2020-02-20'),

(85, 85, 50, '2021-09-01', NULL),
(86, 86, 43, '2019-08-20', NULL),
(87, 87, 27, '2016-04-10', '2020-04-10'),
(88, 88, 136, '2020-01-01', NULL),
(89, 89, 1, '2018-12-31', '2022-12-31'),
(90, 90, 20, '2019-05-15', NULL),
(91, 91, 137, '2021-07-20', NULL),
(92, 92, 4, '2016-03-01', '2019-03-01'),
(93, 93, 138, '2018-11-10', NULL),
(94, 94, 123, '2019-09-15', NULL),
(95, 95, 140, '2020-01-01', NULL),
(96, 96, 56, '2015-06-01', NULL),
(97, 97, 21, '2021-03-10', NULL),
(98, 98, 141, '2016-08-01', NULL),
(99, 99, 25, '2019-10-20', NULL),
(100, 100, 14, '2017-12-01', NULL);

11) Migration_Event Table

INSERT INTO Migration_Event (Migration_ID, Youngster_ID, Duration, From_Region, To_Region, Migration_Date)
VALUES
(1, 1, 5, 5, 10, '2018-03-15'),
(2, 2, 12, 20, 15, '2019-06-25'),
(3, 3, 18, 25, 30, '2021-11-05'),
(4, 1, 9, 35, 40, '2020-08-10'),
(5, 5, 6, 10, 45, '2015-09-12'),
(6, 6, 14, 50, 55, '2017-01-20'),
(7, 7, 11, 60, 65, '2022-02-28'),

(8, 8, 7, 70, 75, '2020-12-01'),
(9, 9, 15, 80, 85, '2016-04-17'),
(10, 10, 19, 90, 95, '2023-07-22'),
(11, 1, 10, 100, 105, '2014-10-14'),
(12, 12, 17, 110, 115, '2019-05-19'),
(13, 13, 13, 120, 125, '2022-09-30'),
(14, 14, 8, 130, 135, '2021-03-11'),
(15, 15, 16, 140, 1, '2015-06-09'),
(16, 16, 4, 2, 6, '2017-02-05'),
(17, 17, 5, 3, 9, '2024-01-01'),
(18, 18, 7, 4, 14, '2020-11-11'),
(19, 19, 9, 5, 16, '2018-03-22'),
(20, 20, 18, 6, 18, '2019-07-15'),
(21, 21, 3, 7, 20, '2022-12-12'),
(22, 22, 10, 8, 21, '2016-09-25'),
(23, 23, 15, 9, 23, '2014-04-30'),
(24, 24, 12, 10, 24, '2023-05-05'),
(25, 25, 8, 11, 26, '2022-08-18'),
(26, 26, 11, 12, 28, '2015-11-09'),
(27, 27, 2, 13, 30, '2018-10-14'),
(28, 28, 6, 14, 32, '2019-02-20'),
(29, 29, 14, 15, 34, '2021-01-05'),
(30, 30, 5, 16, 36, '2020-03-10'),
(31, 31, 17, 17, 38, '2016-06-21'),
(32, 32, 19, 18, 40, '2022-07-01'),
(33, 33, 3, 19, 41, '2015-08-28'),
(34, 34, 8, 20, 42, '2024-03-15'),
(35, 35, 7, 21, 44, '2018-01-10'),
(36, 36, 10, 22, 46, '2017-04-12'),

(37, 37, 12, 23, 48, '2023-10-30'),
(38, 38, 6, 24, 50, '2020-11-15'),
(39, 39, 14, 25, 52, '2019-12-22'),
(40, 40, 11, 26, 54, '2015-03-17'),
(41, 41, 8, 27, 56, '2021-05-08'),
(42, 42, 10, 28, 58, '2022-02-18'),
(43, 43, 9, 29, 60, '2014-10-12'),
(44, 44, 7, 30, 62, '2023-04-05'),
(45, 45, 6, 31, 63, '2017-08-15'),
(46, 46, 4, 32, 64, '2018-01-25'),
(47, 47, 2, 33, 66, '2022-06-09'),
(48, 48, 10, 34, 67, '2016-09-13'),
(49, 49, 5, 35, 68, '2015-02-20'),
(50, 50, 11, 36, 69, '2019-10-18'),
(51, 51, 7, 37, 70, '2021-03-14'),
(52, 52, 9, 38, 72, '2020-11-05'),
(53, 53, 13, 39, 74, '2019-09-12'),
(54, 54, 14, 40, 75, '2016-03-22'),
(55, 55, 8, 41, 76, '2018-09-11'),
(56, 56, 11, 42, 78, '2019-11-20'),
(57, 57, 15, 43, 80, '2023-05-30'),
(58, 58, 10, 44, 81, '2017-06-12'),
(59, 59, 12, 45, 83, '2020-12-08'),
(60, 60, 6, 46, 84, '2021-01-29'),
(61, 61, 4, 47, 85, '2019-04-18'),
(62, 62, 13, 48, 86, '2015-10-22'),
(63, 63, 14, 49, 87, '2022-07-01'),
(64, 64, 5, 50, 88, '2016-02-14'),
(65, 65, 8, 51, 89, '2023-03-15'),

(66, 66, 6, 52, 90, '2019-09-12'),
(67, 67, 11, 53, 91, '2015-08-25'),
(68, 68, 18, 54, 92, '2020-11-05'),
(69, 69, 9, 55, 93, '2021-04-18'),
(70, 70, 15, 56, 94, '2017-01-29'),
(71, 71, 3, 57, 95, '2023-01-15'),
(72, 72, 2, 58, 96, '2018-03-01'),
(73, 73, 4, 59, 97, '2015-12-17'),
(74, 74, 10, 60, 98, '2019-05-22'),
(75, 75, 12, 61, 99, '2020-07-28'),
(76, 76, 8, 62, 100, '2014-09-15'),
(77, 77, 6, 63, 101, '2022-11-30'),
(78, 78, 14, 64, 102, '2021-02-25'),
(79, 79, 11, 65, 103, '2018-04-30'),
(80, 80, 7, 66, 104, '2016-08-02'),
(81, 81, 5, 67, 105, '2014-12-21'),
(82, 82, 10, 68, 106, '2021-07-30'),
(83, 83, 12, 69, 107, '2017-05-09'),
(84, 84, 9, 70, 108, '2019-09-23'),
(85, 85, 3, 71, 109, '2022-02-10'),
(86, 86, 14, 72, 110, '2015-01-15'),
(87, 87, 6, 73, 111, '2021-03-30'),
(88, 88, 13, 74, 112, '2020-05-17'),
(89, 89, 11, 75, 113, '2016-06-19'),
(90, 90, 10, 76, 114, '2019-07-01'),
(91, 91, 17, 77, 115, '2023-08-05'),
(92, 92, 4, 78, 116, '2021-04-18'),
(93, 93, 14, 79, 117, '2017-10-20'),
(94, 94, 15, 80, 118, '2018-12-15'),

(95, 95, 6, 81, 119, '2020-02-01'),
(96, 96, 12, 82, 120, '2015-11-17'),
(97, 97, 8, 83, 121, '2022-09-30'),
(98, 98, 9, 84, 122, '2023-01-10'),
(99, 99, 11, 85, 123, '2019-05-12'),
(100, 100, 3, 86, 124, '2020-11-01'),
(101, 1, 19, 87, 125, '2022-03-20'),
(102, 2, 17, 88, 126, '2020-10-15'),
(103, 3, 10, 89, 127, '2018-06-25'),
(104, 4, 5, 90, 128, '2016-08-14'),
(105, 5, 8, 91, 129, '2022-11-19'),
(106, 6, 12, 92, 130, '2021-07-09'),
(107, 7, 10, 93, 131, '2014-04-10'),
(108, 8, 9, 94, 132, '2019-02-23'),
(109, 9, 6, 95, 133, '2018-12-09'),
(110, 10, 4, 96, 134, '2021-11-20'),
(111, 11, 2, 97, 135, '2017-03-25'),
(112, 12, 16, 98, 136, '2020-12-03'),
(113, 13, 13, 99, 137, '2023-06-30'),
(114, 14, 11, 100, 138, '2018-05-15'),
(115, 15, 19, 101, 139, '2019-07-11'),
(116, 16, 5, 102, 140, '2022-03-04'),
(117, 17, 10, 103, 1, '2021-10-19'),
(118, 18, 6, 104, 2, '2016-08-28'),
(119, 19, 3, 105, 3, '2022-12-22'),
(120, 20, 9, 106, 4, '2023-05-14'),
(121, 21, 8, 107, 5, '2015-11-29'),
(122, 22, 17, 108, 6, '2019-03-16'),
(123, 23, 4, 109, 7, '2018-02-19'),

(124, 24, 12, 110, 8, '2022-08-12'),
(125, 25, 6, 111, 9, '2017-09-25'),
(126, 26, 18, 112, 10, '2019-04-05'),
(127, 27, 5, 113, 11, '2020-07-23'),
(128, 28, 11, 114, 12, '2016-10-15'),
(129, 29, 9, 115, 13, '2021-01-18'),
(130, 30, 3, 116, 14, '2023-06-09'),
(131, 31, 4, 117, 15, '2018-08-17'),
(132, 32, 7, 118, 16, '2020-01-10'),
(133, 33, 6, 119, 17, '2015-11-30'),
(134, 34, 13, 120, 18, '2022-10-14'),
(135, 35, 17, 121, 19, '2019-12-01'),
(136, 36, 15, 122, 20, '2023-03-11'),
(137, 37, 14, 123, 21, '2020-10-07'),
(138, 38, 12, 124, 22, '2016-04-20'),
(139, 39, 8, 125, 23, '2021-05-30'),
(140, 40, 5, 126, 24, '2015-07-15'),
(141, 41, 9, 127, 25, '2018-09-19'),
(142, 42, 11, 128, 26, '2022-01-25'),
(143, 43, 10, 129, 27, '2019-10-15'),
(144, 44, 8, 130, 28, '2016-11-08'),
(145, 45, 6, 131, 29, '2021-06-10'),
(146, 46, 7, 132, 30, '2020-12-12'),
(147, 47, 14, 133, 31, '2022-08-21'),
(148, 48, 3, 134, 32, '2015-04-01'),
(149, 49, 2, 135, 33, '2019-05-17'),
(150, 50, 1, 136, 34, '2023-02-02');

12) Opportunities Table

INSERT INTO Opportunities (Opportunity_Type, Location, Employer_ID, Salary_Benefits, Eligibility_Criteria) VALUES
('Internship', 'Mumbai', 56, '₹15,000 per month', 'Undergraduate'),
('Full-time', 'Delhi', 23, '₹60,000 per month', 'Postgraduate'),
('Part-time', 'Bangalore', 89, '₹25,000 per month', 'Undergraduate'),
('Contract', 'Hyderabad', 45, '₹50,000 per month', 'Any Graduate'),
('Freelance', 'Chennai', 78, 'Project-based', 'Experience preferred'),
('Internship', 'Kolkata', 34, '₹12,000 per month', 'Undergraduate'),
('Full-time', 'Pune', 91, '₹70,000 per month', 'Postgraduate'),
('Part-time', 'Ahmedabad', 10, '₹20,000 per month', 'Diploma'),
('Contract', 'Jaipur', 82, '₹55,000 per month', 'Postgraduate'),
('Freelance', 'Lucknow', 37, 'Project-based', 'Experience preferred'),
('Internship', 'Surat', 66, '₹18,000 per month', 'Undergraduate'),
('Full-time', 'Nagpur', 53, '₹62,000 per month', 'Postgraduate'),
('Part-time', 'Coimbatore', 99, '₹22,000 per month', 'Any Graduate'),
('Contract', 'Visakhapatnam', 18, '₹48,000 per month', 'Experience preferred'),
('Freelance', 'Vijayawada', 84, 'Project-based', 'Undergraduate'),
('Internship', 'Indore', 30, '₹14,000 per month', 'Undergraduate'),
('Full-time', 'Mysore', 72, '₹68,000 per month', 'Postgraduate'),
('Part-time', 'Nashik', 4, '₹21,000 per month', 'Any Graduate'),
('Contract', 'Aurangabad', 60, '₹53,000 per month', 'Postgraduate'),
('Freelance', 'Rajkot', 26, 'Project-based', 'Experience preferred'),
('Internship', 'Vadodara', 77, '₹16,000 per month', 'Undergraduate'),
('Full-time', 'Patna', 11, '₹64,000 per month', 'Postgraduate'),
('Part-time', 'Bhopal', 49, '₹24,000 per month', 'Any Graduate'),

('Contract', 'Gwalior', 67, '₹57,000 per month', 'Experience preferred'),
('Freelance', 'Agra', 93, 'Project-based', 'Undergraduate'),
('Internship', 'Dehradun', 32, '₹15,000 per month', 'Undergraduate'),
('Full-time', 'Ranchi', 90, '₹69,000 per month', 'Postgraduate'),
('Part-time', 'Srinagar', 2, '₹23,000 per month', 'Any Graduate'),
('Contract', 'Jammu', 54, '₹52,000 per month', 'Postgraduate'),
('Freelance', 'Shimla', 71, 'Project-based', 'Experience preferred'),
('Internship', 'Gangtok', 16, '₹17,000 per month', 'Undergraduate'),
('Full-time', 'Imphal', 14, '₹65,000 per month', 'Postgraduate'),
('Part-time', 'Aizawl', 88, '₹20,000 per month', 'Any Graduate'),
('Contract', 'Kohima', 40, '₹49,000 per month', 'Experience preferred'),
('Freelance', 'Itanagar', 41, 'Project-based', 'Undergraduate'),
('Internship', 'Agartala', 86, '₹13,000 per month', 'Undergraduate'),
('Full-time', 'Dibrugarh', 29, '₹63,000 per month', 'Postgraduate'),
('Part-time', 'Guwahati', 1, '₹22,000 per month', 'Any Graduate'),
('Contract', 'Tawang', 33, '₹50,000 per month', 'Postgraduate'),
('Freelance', 'Silchar', 5, 'Project-based', 'Experience preferred'),
('Internship', 'Tezpur', 70, '₹19,000 per month', 'Undergraduate'),
('Full-time', 'Tirupati', 87, '₹66,000 per month', 'Postgraduate'),
('Part-time', 'Kakinada', 75, '₹25,000 per month', 'Any Graduate'),
('Contract', 'Vellore', 57, '₹56,000 per month', 'Postgraduate'),
('Freelance', 'Tirunelveli', 46, 'Project-based', 'Experience preferred'),
('Internship', 'Thiruvananthapuram', 39, '₹18,000 per month', 'Undergraduate'),
('Full-time', 'Nellore', 65, '₹61,000 per month', 'Postgraduate'),
('Part-time', 'Tiruvallur', 38, '₹22,500 per month', 'Any Graduate'),

('Contract', 'Chennai', 48, '₹58,000 per month', 'Postgraduate'),
('Freelance', 'Madurai', 79, 'Project-based', 'Experience preferred'),
('Internship', 'Puducherry', 42, '₹16,500 per month', 'Undergraduate'),
('Full-time', 'Kozhikode', 12, '₹67,000 per month', 'Postgraduate'),
('Part-time', 'Kottayam', 3, '₹24,500 per month', 'Any Graduate'),
('Contract', 'Kannur', 74, '₹52,500 per month', 'Postgraduate'),
('Freelance', 'Malappuram', 97, 'Project-based', 'Experience preferred'),
('Internship', 'Ernakulam', 73, '₹15,500 per month', 'Undergraduate'),
('Full-time', 'Palakkad', 8, '₹64,500 per month', 'Postgraduate'),
('Part-time', 'Idukki', 15, '₹21,500 per month', 'Any Graduate'),
('Contract', 'Pathanamthitta', 50, '₹54,500 per month', 'Postgraduate'),
('Freelance', 'Thiruvananthapuram', 44, 'Project-based', 'Experience preferred'),
('Internship', 'Trivandrum', 35, '₹18,500 per month', 'Undergraduate'),
('Full-time', 'Thiruvananthapuram', 20, '₹66,500 per month', 'Postgraduate'),
('Part-time', 'Chengannur', 80, '₹23,500 per month', 'Any Graduate'),
('Contract', 'Muvattupuzha', 68, '₹58,500 per month', 'Postgraduate'),
('Freelance', 'Kottayam', 27, 'Project-based', 'Experience preferred'),
('Internship', 'Alappuzha', 24, '₹15,800 per month', 'Undergraduate'),

('Full-time', 'Kollam', 61, '₹65,800 per month', 'Postgraduate'),
('Part-time', 'Kottayam', 83, '₹22,800 per month', 'Any Graduate'),
('Contract', 'Thodupuzha', 92, '₹52,800 per month', 'Postgraduate'),
('Freelance', 'Punalur', 6, 'Project-based', 'Experience preferred'),
('Internship', 'Neyyattinkara', 69, '₹17,200 per month',
'Undergraduate'),
('Full-time', 'Munnar', 99, '₹63,800 per month', 'Postgraduate'),
('Part-time', 'Varkala', 71, '₹24,200 per month', 'Any Graduate'),
('Contract', 'Kumarakom', 88, '₹57,200 per month', 'Postgraduate'),
('Freelance', 'Adoor', 25, 'Project-based', 'Experience preferred');

13) Enrolled

INSERT INTO Enrolled (Youngster_ID, Institute_ID,
Enrollment_Date, Completion_Status, Credits, Grade) VALUES
(1, 36, '2020-08-15', TRUE, 30, 'A'),
(2, 8, '2019-09-10', FALSE, 28, 'B'),
(3, 43, '2021-01-12', TRUE, 34, 'A'),
(4, 10, '2022-07-20', TRUE, 40, 'A'),
(5, 19, '2018-05-25', FALSE, 20, 'C'),
(6, 64, '2020-11-30', TRUE, 32, 'B'),
(7, 52, '2021-02-14', TRUE, 36, 'A'),
(8, 27, '2022-06-18', FALSE, 22, 'C'),
(9, 49, '2019-10-11', TRUE, 30, 'B'),
(10, 15, '2023-01-01', TRUE, 28, 'A'),
(11, 60, '2020-03-30', FALSE, 25, 'B'),
(12, 30, '2021-04-12', TRUE, 35, 'A'),
(13, 78, '2019-08-21', TRUE, 31, 'A'),

(14, 42, '2022-02-16', FALSE, 27, 'C'),
(15, 54, '2020-12-01', TRUE, 29, 'B'),
(16, 70, '2021-03-05', TRUE, 38, 'A'),
(17, 33, '2018-06-29', FALSE, 21, 'C'),
(18, 5, '2019-11-14', TRUE, 36, 'B'),
(19, 66, '2021-08-20', TRUE, 34, 'A'),
(20, 88, '2020-04-25', TRUE, 37, 'A'),
(21, 81, '2019-10-30', FALSE, 29, 'B'),
(22, 94, '2022-07-09', TRUE, 40, 'A'),
(23, 37, '2018-05-18', TRUE, 31, 'B'),
(24, 91, '2020-11-22', FALSE, 30, 'C'),
(25, 47, '2021-02-28', TRUE, 35, 'A'),
(26, 73, '2019-09-15', TRUE, 33, 'B'),
(27, 50, '2021-01-01', FALSE, 26, 'C'),
(28, 14, '2020-05-05', TRUE, 30, 'A'),
(29, 63, '2019-08-16', TRUE, 32, 'B'),
(30, 12, '2021-03-18', FALSE, 27, 'C'),
(31, 59, '2019-02-22', TRUE, 35, 'A'),
(32, 84, '2021-06-17', TRUE, 38, 'A'),
(33, 39, '2020-07-07', FALSE, 24, 'B'),
(34, 11, '2019-03-13', TRUE, 28, 'A'),
(35, 92, '2021-01-30', TRUE, 36, 'B'),
(36, 76, '2020-08-02', TRUE, 40, 'A'),
(37, 68, '2019-10-15', FALSE, 22, 'C'),
(38, 45, '2021-05-05', TRUE, 29, 'A'),
(39, 86, '2020-04-12', TRUE, 31, 'B'),
(40, 80, '2019-09-21', TRUE, 35, 'A'),
(41, 26, '2021-03-02', FALSE, 24, 'C'),
(42, 99, '2020-12-29', TRUE, 36, 'B'),

(43, 1, '2022-11-05', TRUE, 40, 'A'),
(44, 74, '2019-07-04', FALSE, 21, 'C'),
(45, 24, '2021-08-17', TRUE, 33, 'A'),
(46, 67, '2020-09-28', TRUE, 30, 'B'),
(47, 95, '2019-05-15', FALSE, 27, 'C'),
(48, 62, '2021-02-20', TRUE, 38, 'A'),
(49, 18, '2020-03-06', TRUE, 34, 'B'),
(50, 53, '2021-07-01', TRUE, 30, 'A'),
(51, 34, '2019-04-14', TRUE, 29, 'B'),
(52, 35, '2022-05-10', FALSE, 20, 'C'),
(53, 8, '2019-11-21', TRUE, 37, 'A'),
(54, 90, '2020-06-15', TRUE, 32, 'B'),
(55, 56, '2021-01-05', TRUE, 40, 'A'),
(56, 82, '2022-04-11', FALSE, 24, 'C'),
(57, 13, '2020-08-13', TRUE, 30, 'A'),
(58, 44, '2021-03-03', TRUE, 33, 'B'),
(59, 72, '2019-06-19', TRUE, 35, 'A'),
(60, 9, '2022-07-08', FALSE, 22, 'C'),
(61, 48, '2020-12-12', TRUE, 29, 'B'),
(62, 58, '2021-10-17', TRUE, 40, 'A'),
(63, 65, '2019-07-24', FALSE, 30, 'C'),
(64, 97, '2022-11-30', TRUE, 28, 'B'),
(65, 77, '2020-01-01', TRUE, 36, 'A'),
(66, 3, '2021-02-22', FALSE, 22, 'C'),
(67, 31, '2019-05-30', TRUE, 37, 'B'),
(68, 20, '2020-08-26', TRUE, 38, 'A'),
(69, 41, '2021-07-07', FALSE, 26, 'C'),
(70, 16, '2022-10-10', TRUE, 35, 'B'),
(71, 79, '2019-03-29', TRUE, 34, 'A'),

(72, 88, '2020-02-10', TRUE, 30, 'B'),
(73, 12, '2021-04-14', TRUE, 28, 'A'),
(74, 25, '2019-06-05', FALSE, 23, 'C'),
(75, 69, '2021-09-17', TRUE, 29, 'A'),
(76, 83, '2019-11-04', TRUE, 35, 'B'),
(77, 96, '2020-10-31', FALSE, 22, 'C'),
(78, 55, '2021-05-16', TRUE, 40, 'A'),
(79, 61, '2019-07-20', TRUE, 31, 'B'),
(80, 38, '2020-06-28', TRUE, 36, 'A'),
(81, 14, '2021-02-04', FALSE, 24, 'C'),
(82, 75, '2020-08-18', TRUE, 30, 'B'),
(83, 7, '2019-05-15', TRUE, 34, 'A'),
(84, 40, '2022-01-12', FALSE, 23, 'C'),
(85, 92, '2020-03-30', TRUE, 29, 'A'),
(86, 45, '2019-08-23', TRUE, 32, 'B'),
(87, 99, '2021-11-05', TRUE, 31, 'A'),
(88, 2, '2020-09-12', TRUE, 36, 'B'),
(89, 4, '2022-06-10', FALSE, 27, 'C'),
(90, 87, '2021-01-20', TRUE, 40, 'A'),
(91, 6, '2019-11-16', TRUE, 28, 'B'),
(92, 15, '2020-04-19', FALSE, 25, 'C'),
(93, 93, '2021-03-28', TRUE, 39, 'A'),
(94, 1, '2022-05-01', TRUE, 35, 'B'),
(95, 89, '2019-10-14', TRUE, 32, 'A'),
(96, 17, '2020-02-09', TRUE, 28, 'B'),
(97, 100, '2021-07-11', FALSE, 22, 'C'),
(98, 39, '2022-03-21', TRUE, 37, 'A'),
(99, 86, '2020-11-09', TRUE, 30, 'B'),
(100, 49, '2021-06-04', FALSE, 20, 'C');

14) Youngster_Phone Table

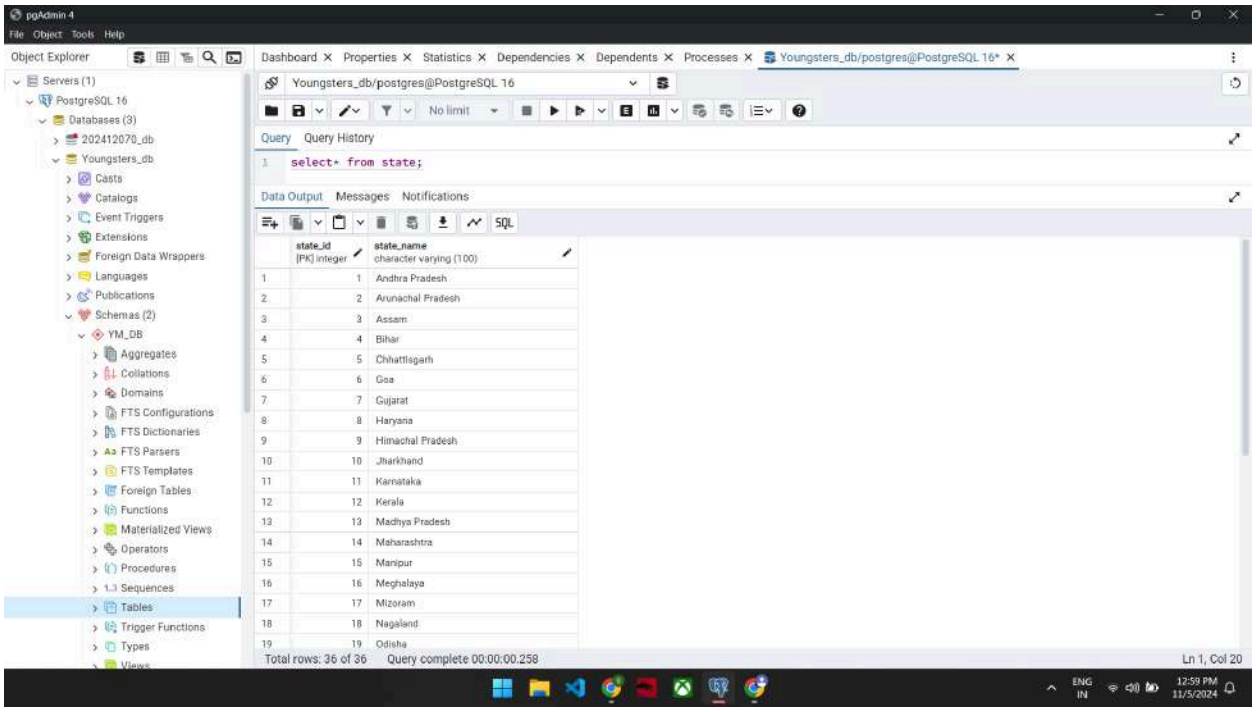
```
INSERT INTO Youngster_Phone (Youngster_ID, Phone_no)
VALUES
(1, '9876543210'),
(1, '9123456789'),
(2, '9876543211'),
(3, '9876543212'),
(3, '9123456790'),
(4, '9876543213'),
(5, '9876543214'),
(6, '9876543215'),
(7, '9876543216'),
(8, '9876543217'),
(9, '9876543218'),
(10, '9876543219'),
(11, '9876543220'),
(12, '9876543221'),
(13, '9876543222'),
(14, '9876543223'),
(15, '9876543224'),
(16, '9876543225'),
(17, '9876543226'),
(18, '9876543227'),
(19, '9876543228'),
(20, '9876543229'),
(21, '9876543230'),
(22, '9876543231'),
(23, '9876543232'),
(24, '9876543233'),
```

(25, '9876543234'),
(26, '9876543235'),
(27, '9876543236'),
(28, '9876543237'),
(29, '9876543238'),
(30, '9876543239'),
(31, '9876543240'),
(32, '9876543241'),
(33, '9876543242'),
(34, '9876543243'),
(35, '9876543244'),
(36, '9876543245'),
(37, '9876543246'),
(38, '9876543247'),
(39, '9876543248'),
(40, '9876543249'),
(41, '9876543250'),
(42, '9876543251'),
(43, '9876543252'),
(44, '9876543253'),
(45, '9876543254'),
(46, '9876543255'),
(47, '9876543256'),
(48, '9876543257'),
(49, '9876543258'),
(50, '9876543259'),
(51, '9876543260'),
(52, '9876543261'),
(53, '9876543262'),

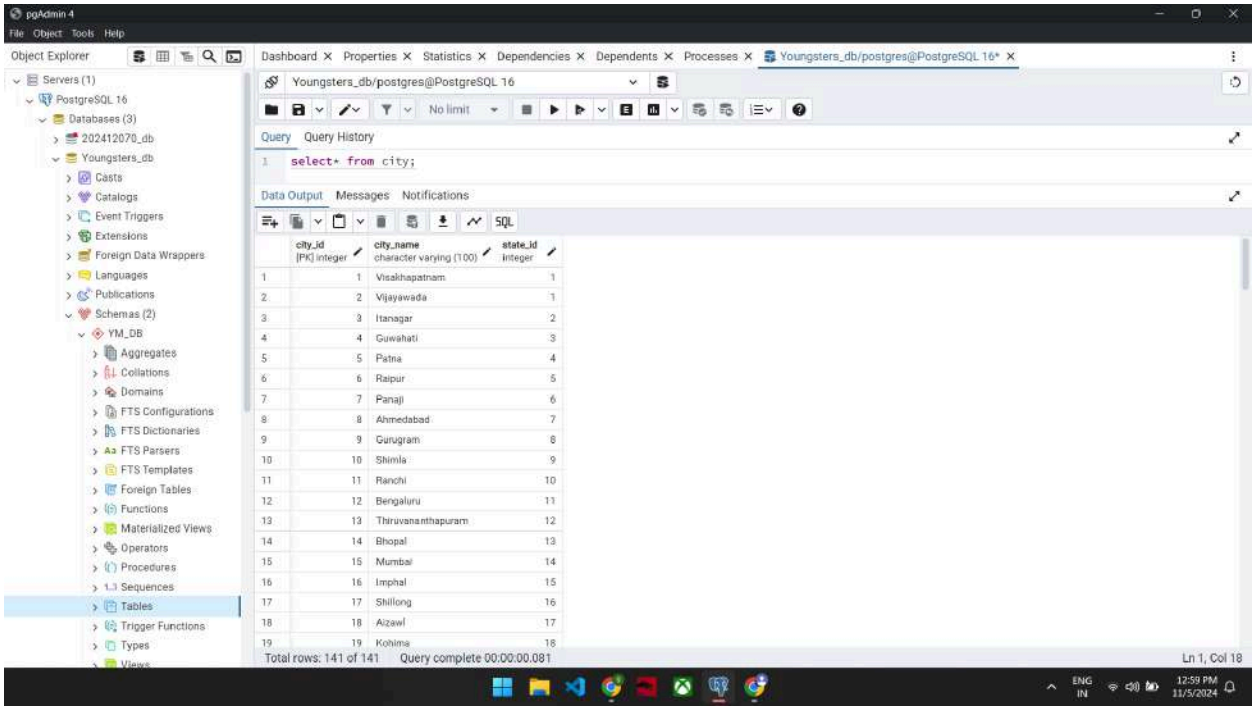
(54, '9876543263'),
(55, '9876543264'),
(56, '9876543265'),
(57, '9876543266'),
(58, '9876543267'),
(59, '9876543268'),
(60, '9876543269'),
(61, '9876543270'),
(62, '9876543271'),
(63, '9876543272'),
(64, '9876543273'),
(65, '9876543274'),
(66, '9876543275'),
(67, '9876543276'),
(68, '9876543277'),
(69, '9876543278'),
(70, '9876543279'),
(71, '9876543280'),
(72, '9876543281'),
(73, '9876543282'),
(74, '9876543283'),
(75, '9876543284'),
(76, '9876543285'),
(77, '9876543286'),
(78, '9876543287'),
(79, '9876543288'),
(80, '9876543289'),
(81, '9876543290'),
(82, '9876543291'),

(83, '9876543292'),
(84, '9876543293'),
(85, '9876543294'),
(86, '9876543295'),
(87, '9876543296'),
(88, '9876543297'),
(89, '9876543298'),
(90, '9876543299'),
(91, '9876543300'),
(92, '9876543301'),
(93, '9876543302'),
(94, '9876543303'),
(95, '9876543304'),
(96, '9876543305'),
(97, '9876543306'),
(98, '9876543307'),
(99, '9876543308'),
(100, '9876543309');

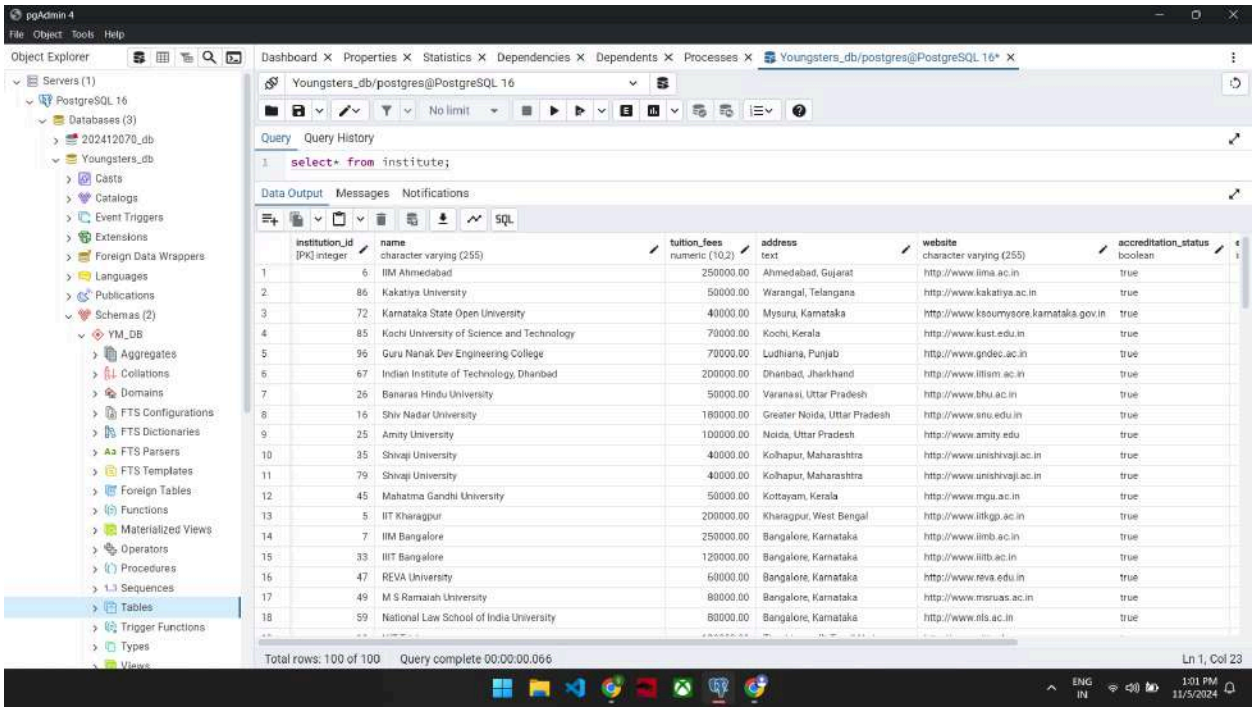
State Table



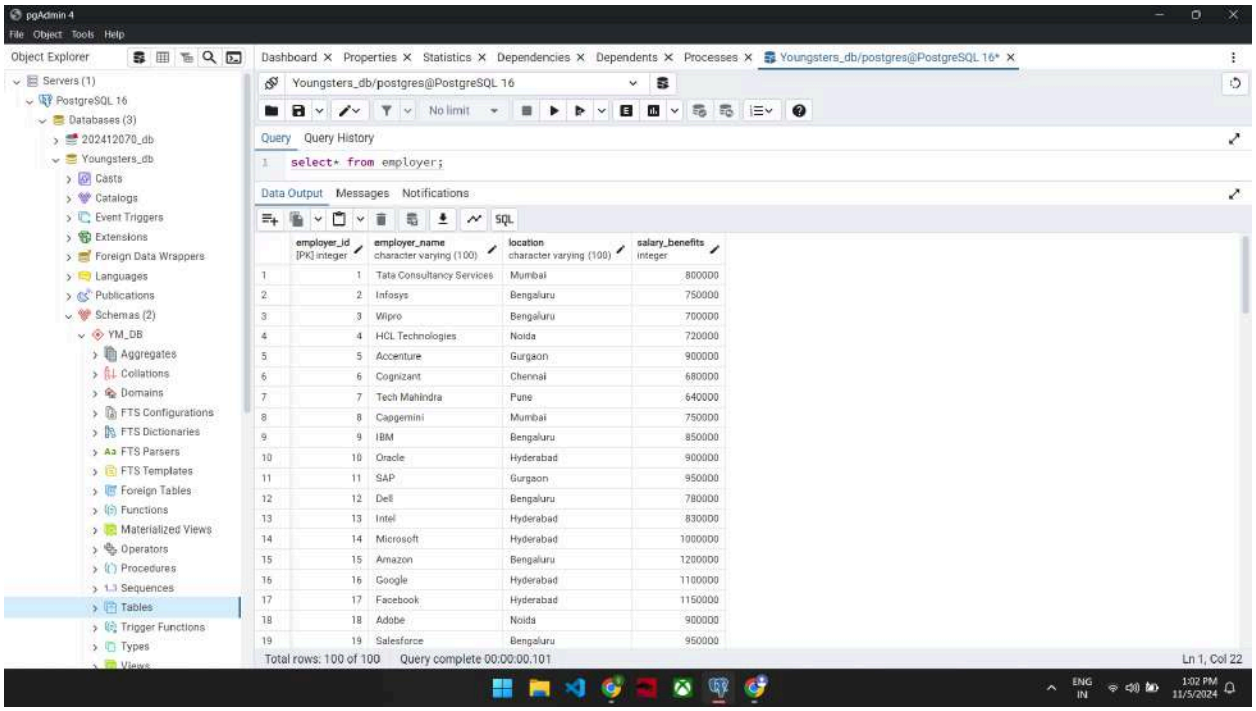
City Table



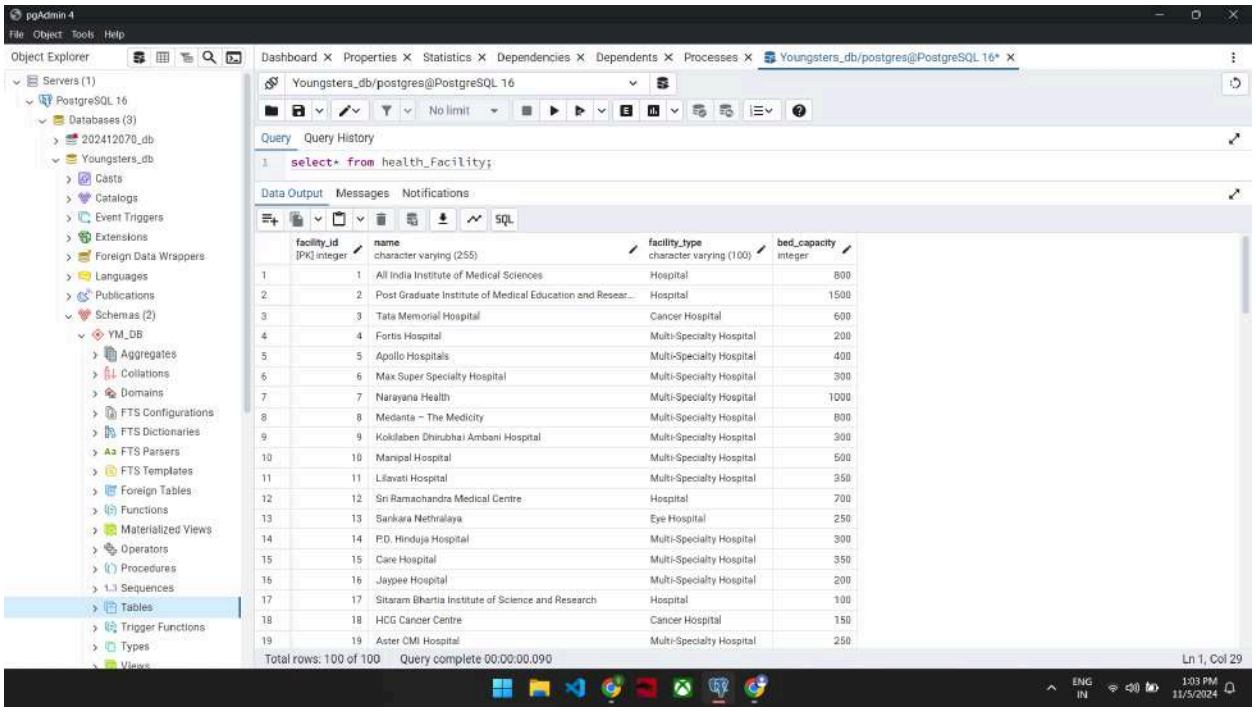
Institute table



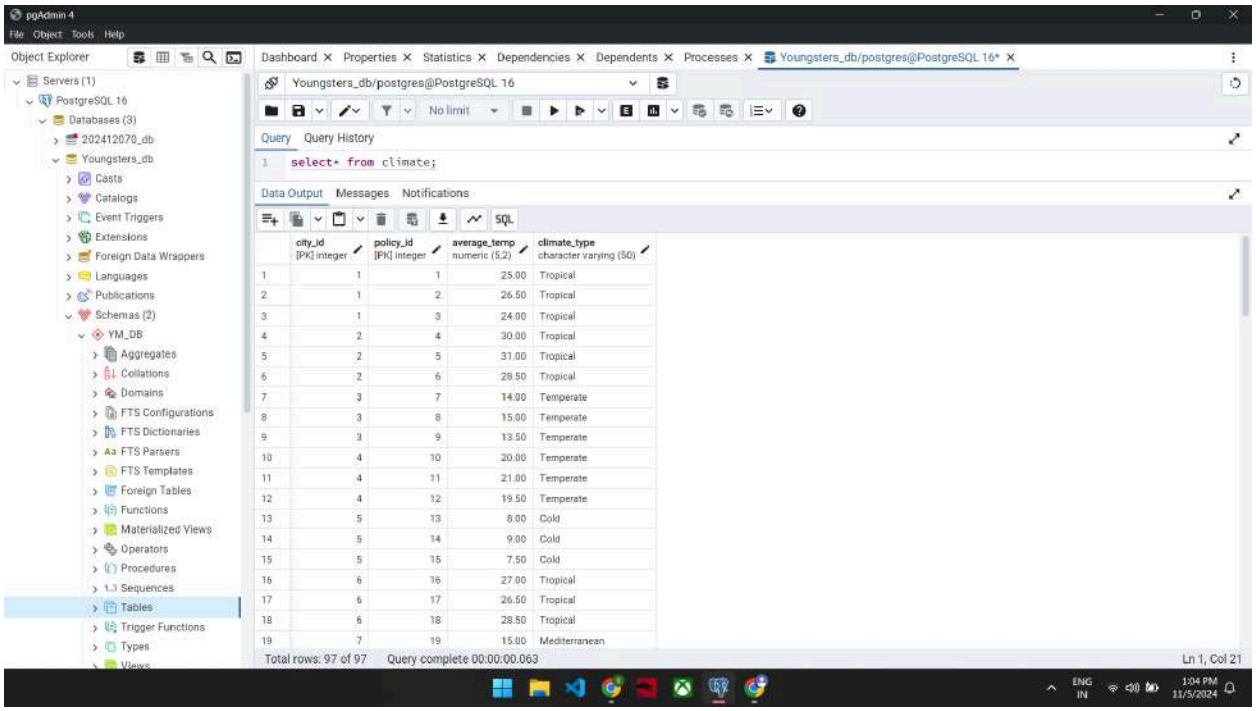
Employer table



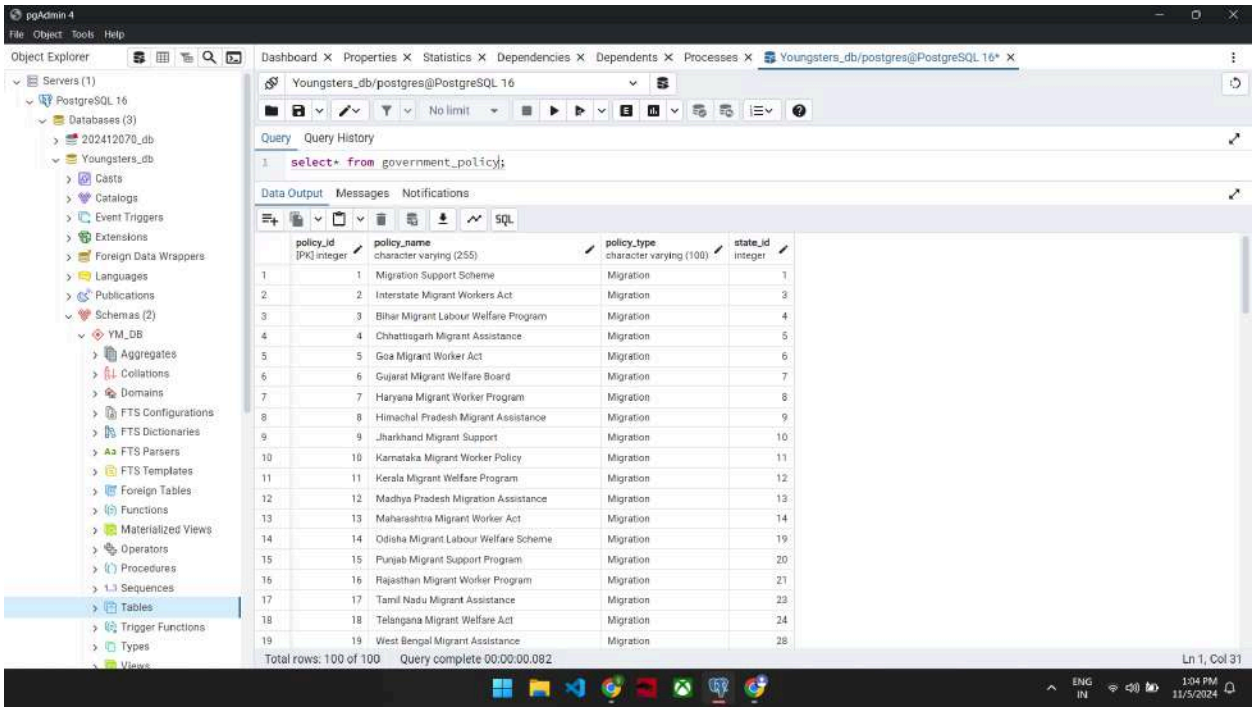
Health_Facility table



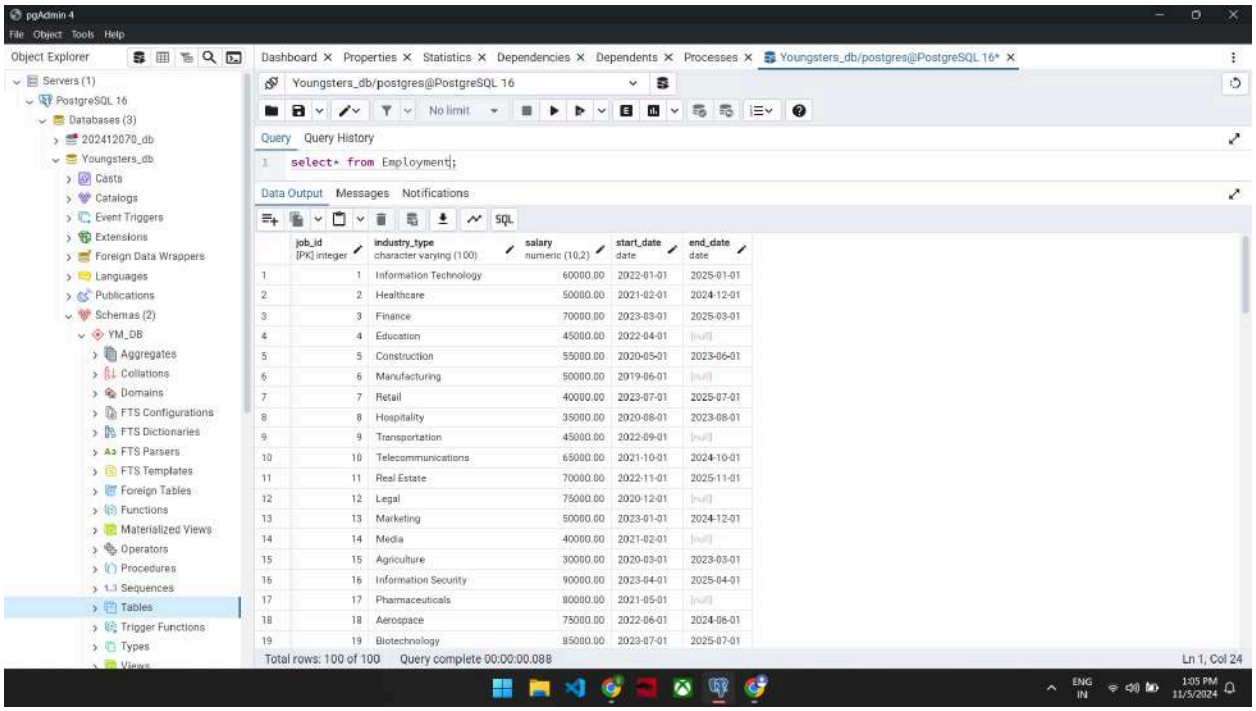
Climate table



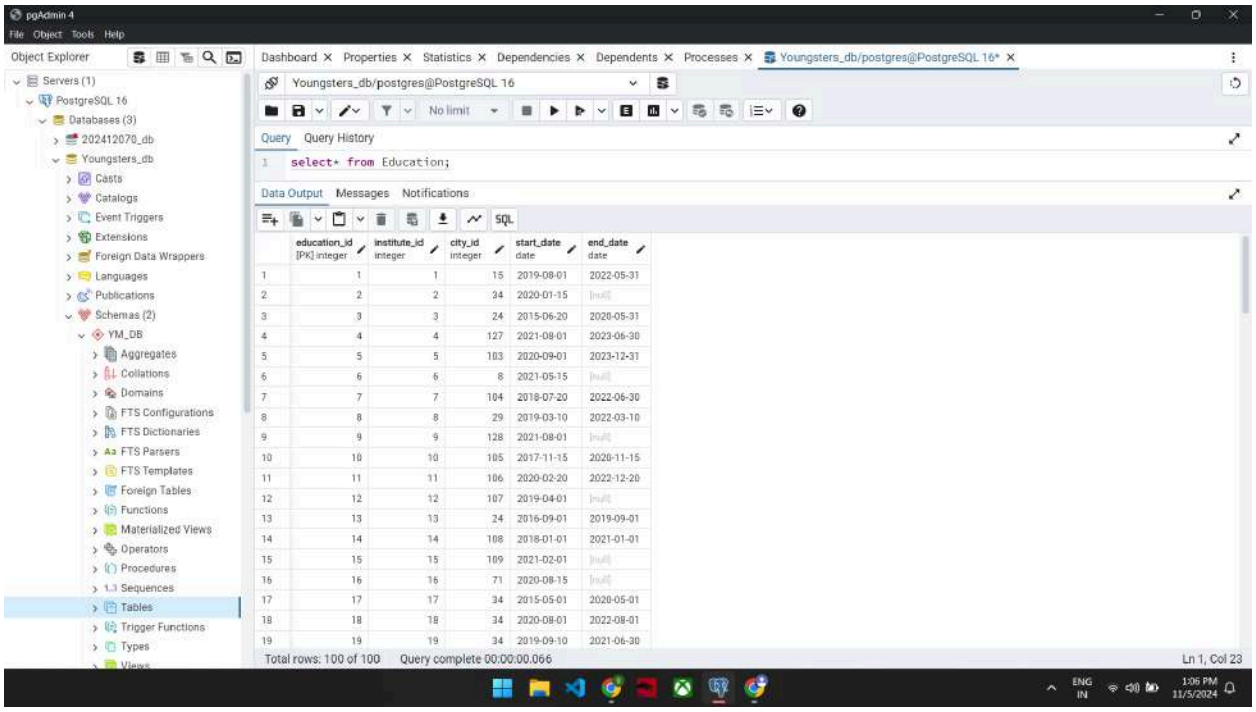
Government_Policy table



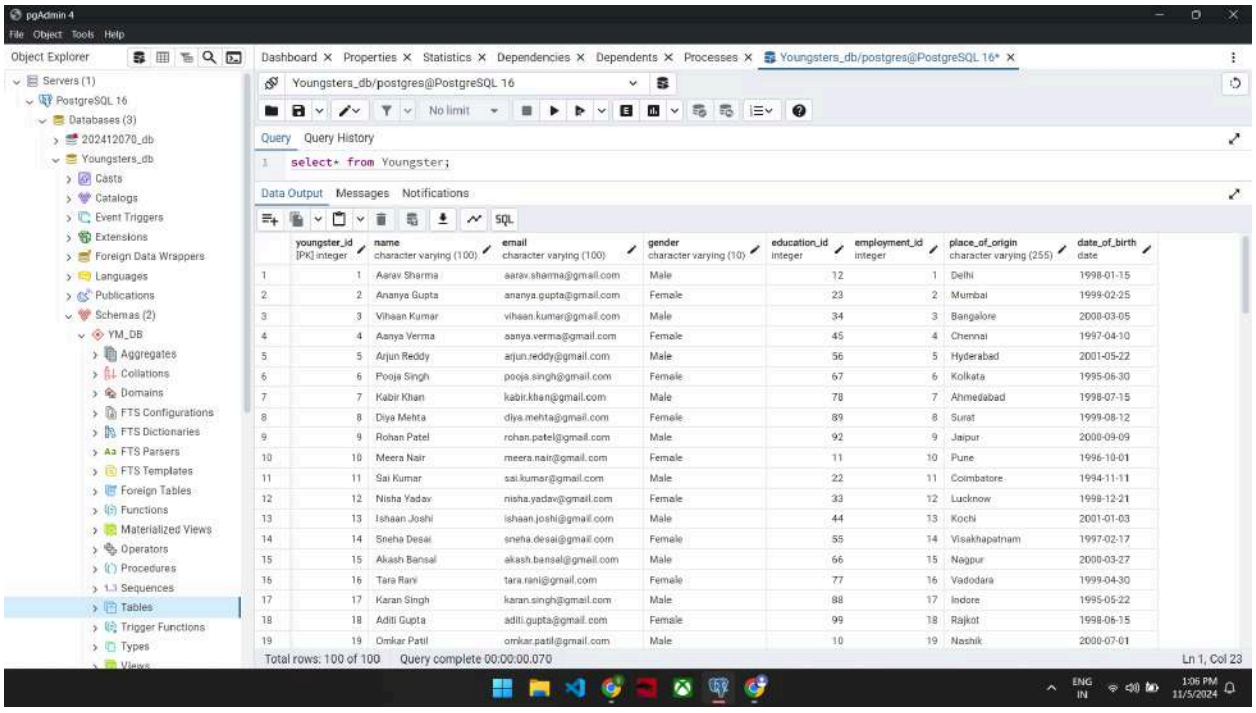
Employment table



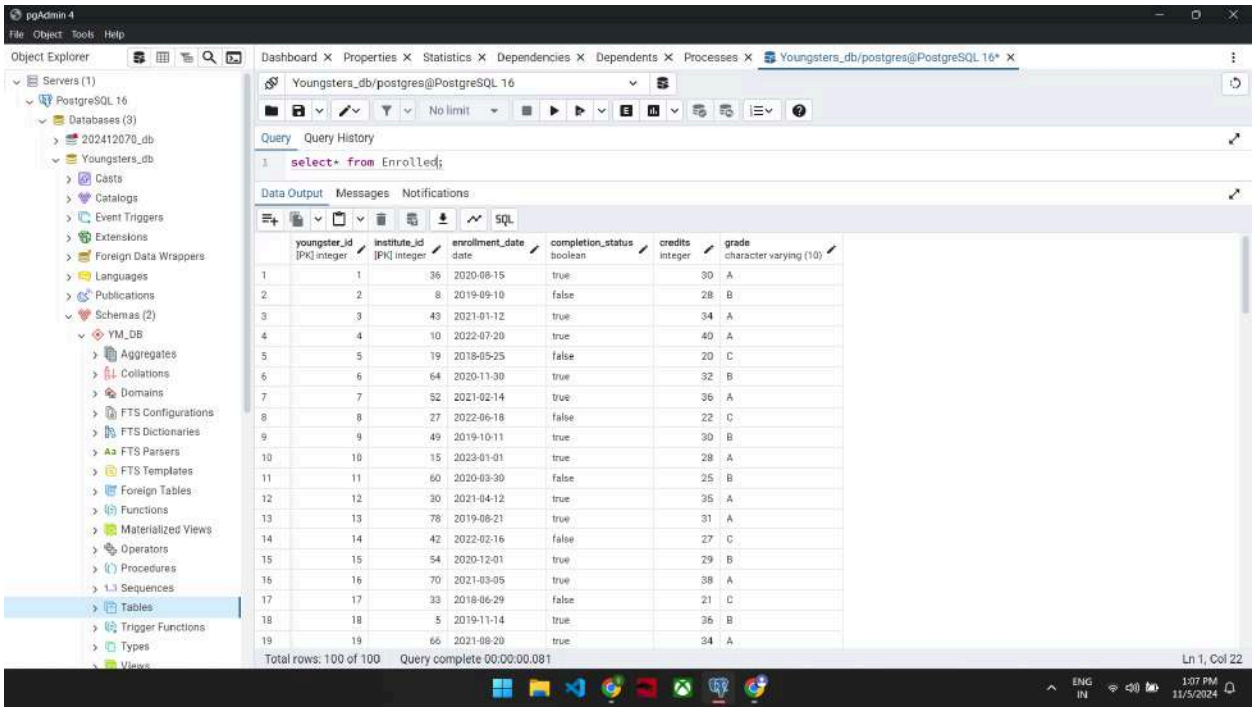
Education table



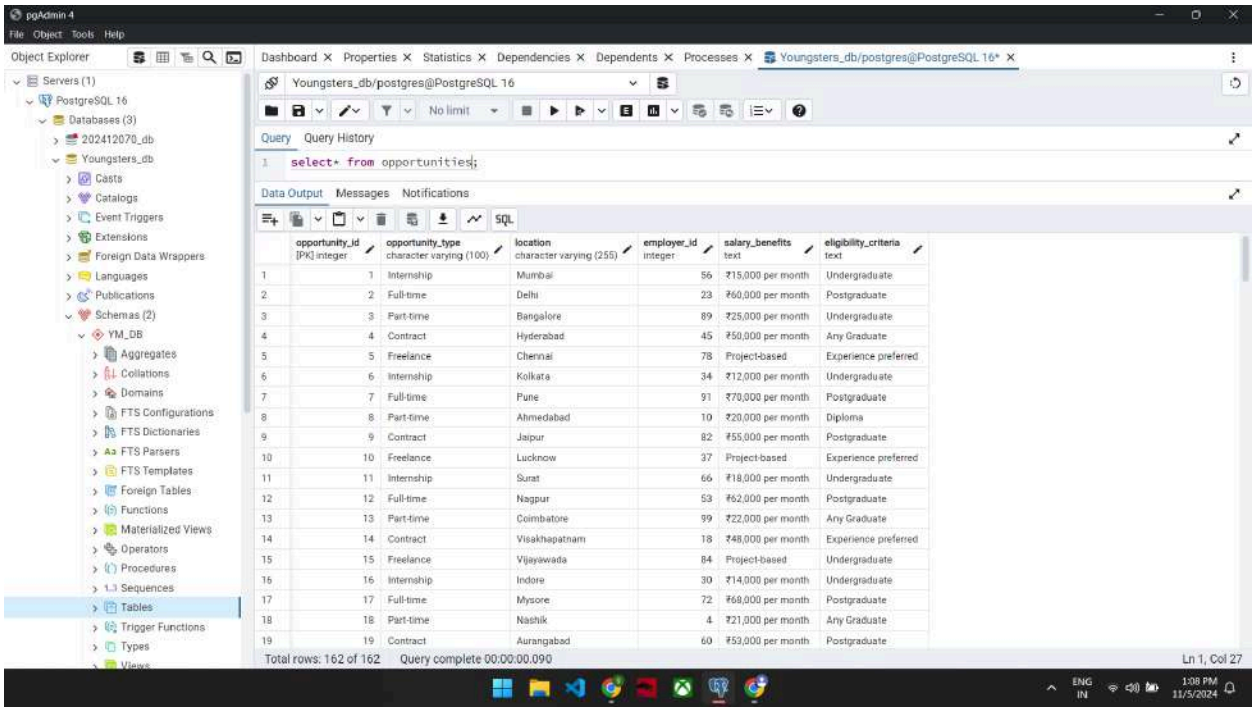
Youngster table



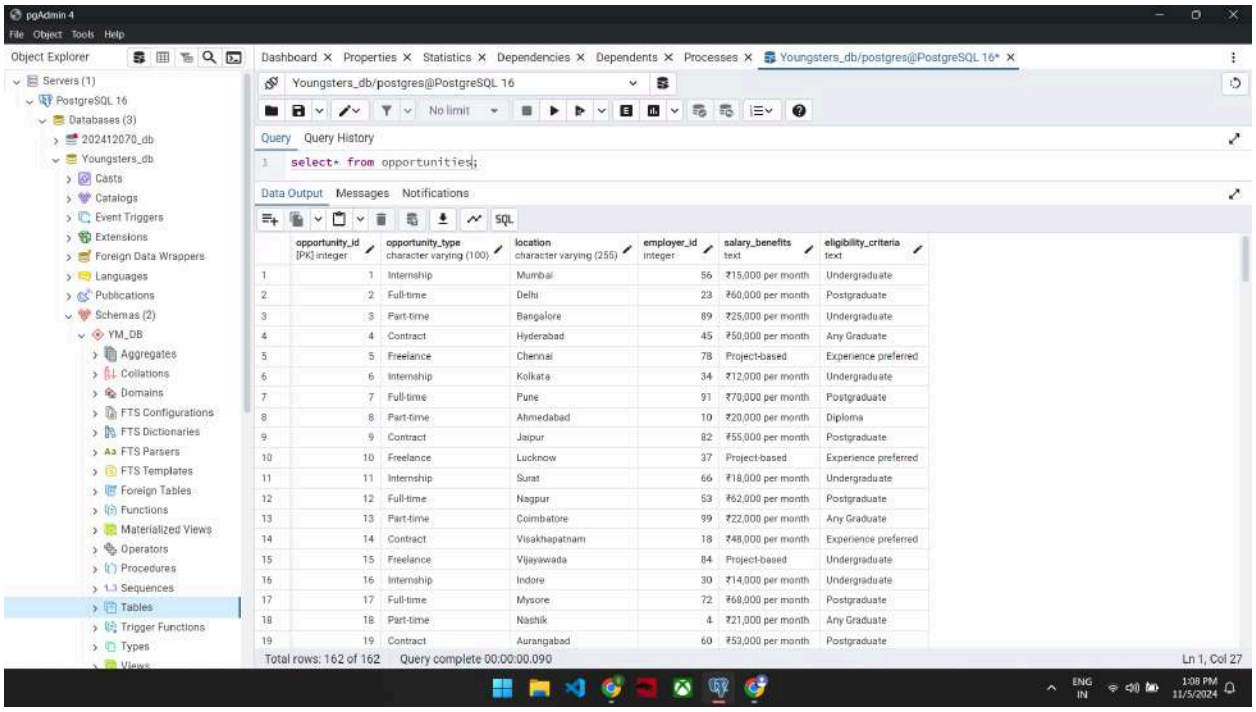
Enrolled table



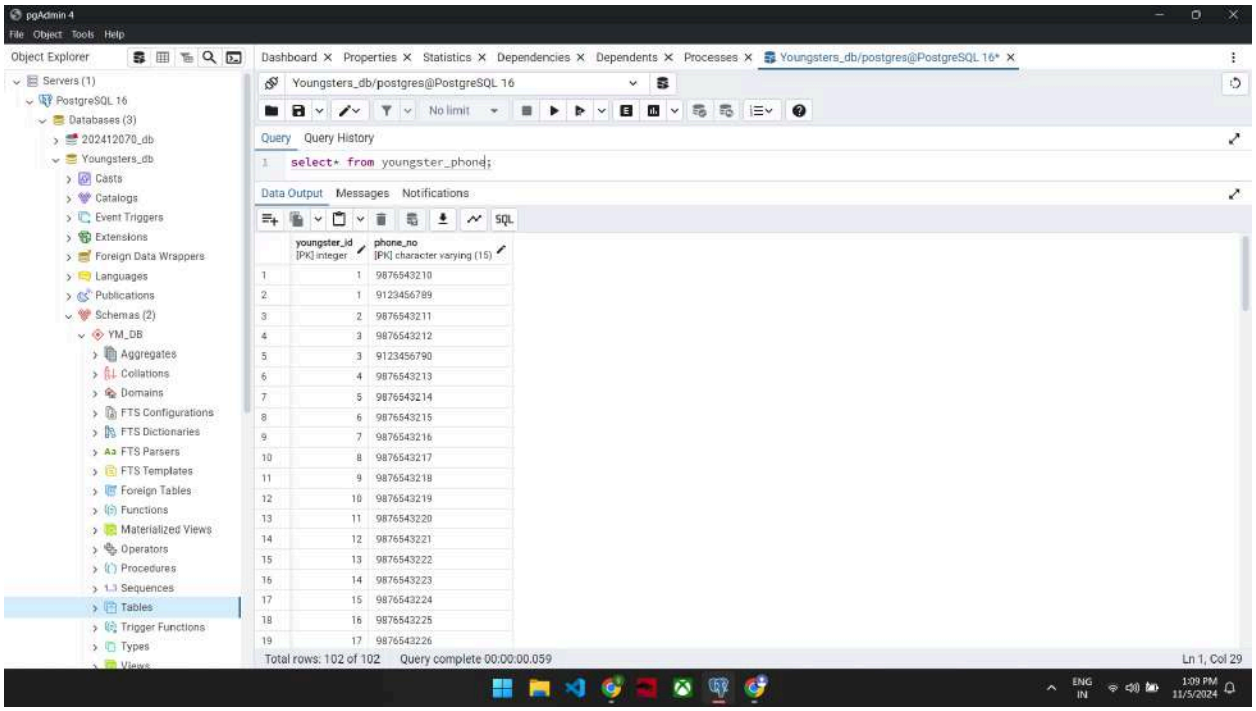
Opportunities table



Migration_Event table



Youngster_phone table

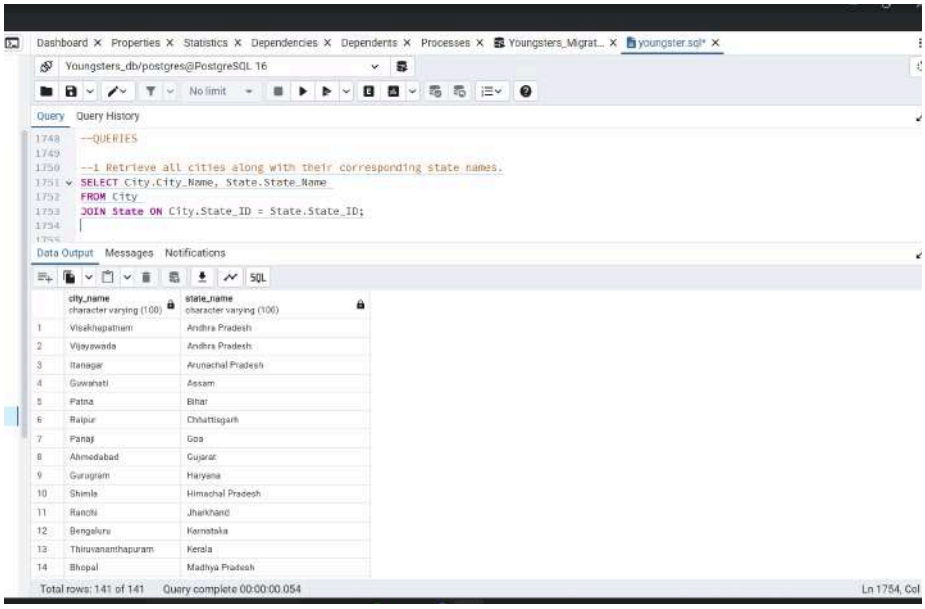


4.3 SQL Queries

QUERIES

1) Retrieve all cities along with their corresponding state names.

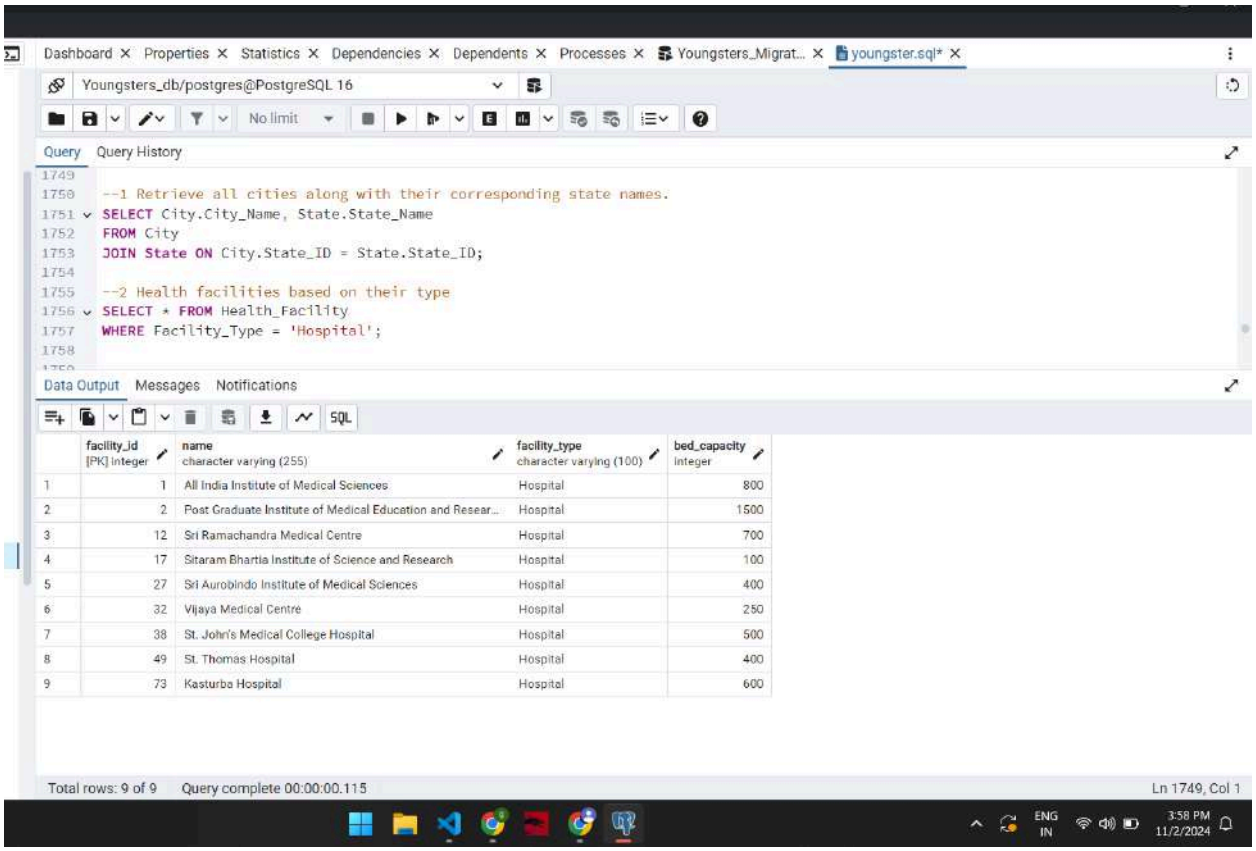
```
SELECT City.City_Name, State.State_Name
FROM City
JOIN State ON City.State_ID = State.State_ID;
```



Number of tuples: 141

2) Health facilities based on their type

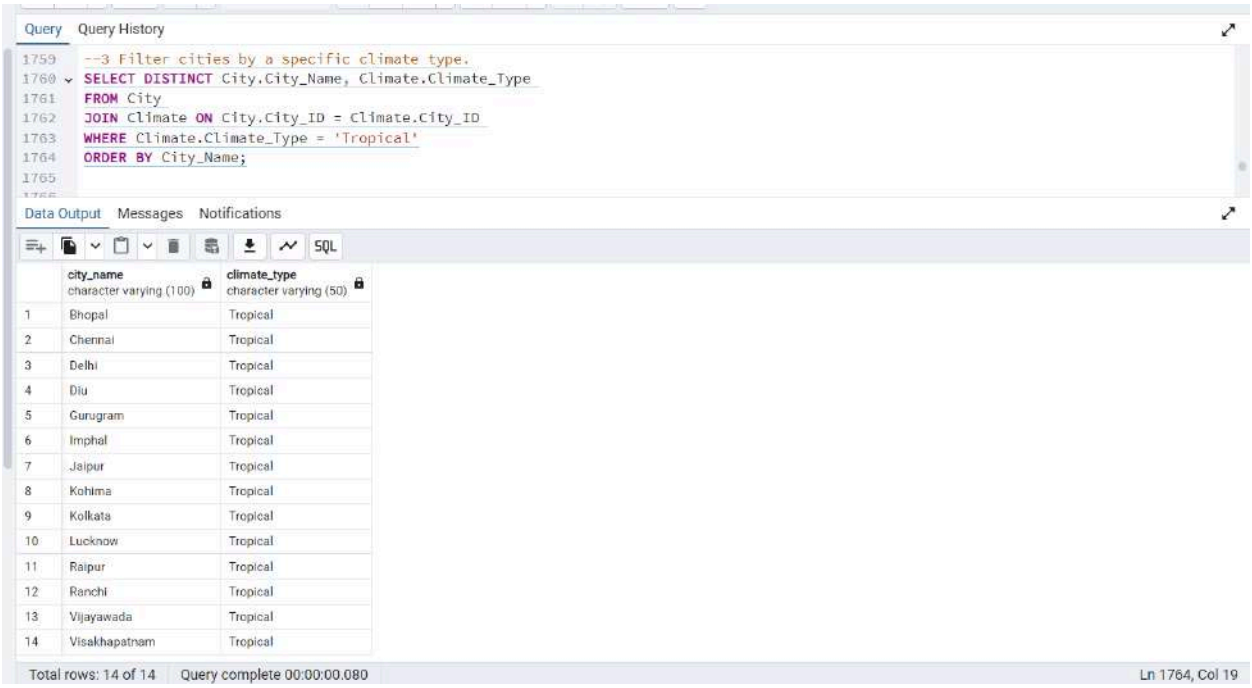
```
SELECT * FROM Health_Facility
WHERE Facility_Type = 'Hospital';
```



Number of tuples: 9

3) Filter cities by a specific climate type.

```
SELECT City.City_Name, Climate.Climate_Type
FROM City
JOIN Climate ON City.City_ID = Climate.City_ID
WHERE Climate.Climate_Type = 'Tropical';
```



Query | Query History

```
1759  --3 Filter cities by a specific climate type.
1760  SELECT DISTINCT City.City_Name, Climate.Climate_Type
1761  FROM City
1762  JOIN Climate ON City.City_ID = Climate.City_ID
1763  WHERE Climate.Climate_Type = 'Tropical'
1764  ORDER BY City_Name;
1765
```

Data Output | Messages | Notifications

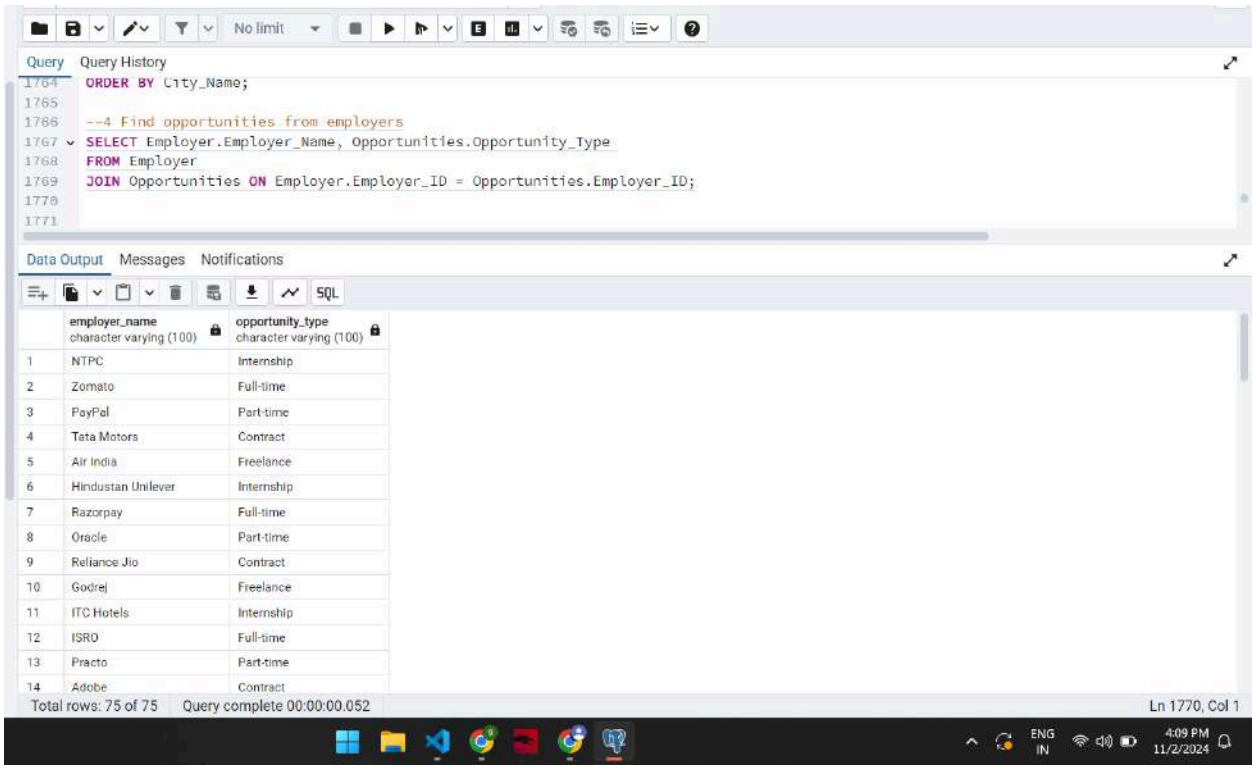
	city_name character varying (100)	climate_type character varying (50)
1	Bhopal	Tropical
2	Chennai	Tropical
3	Delhi	Tropical
4	Diu	Tropical
5	Gurugram	Tropical
6	Imphal	Tropical
7	Jaipur	Tropical
8	Kohima	Tropical
9	Kolkata	Tropical
10	Lucknow	Tropical
11	Raipur	Tropical
12	Ranchi	Tropical
13	Vijayawada	Tropical
14	Visakhapatnam	Tropical

Total rows: 14 of 14 | Query complete 00:00:00.080 | Ln 1764, Col 19

Number of tuples: 14

4) Find opportunities from employers.

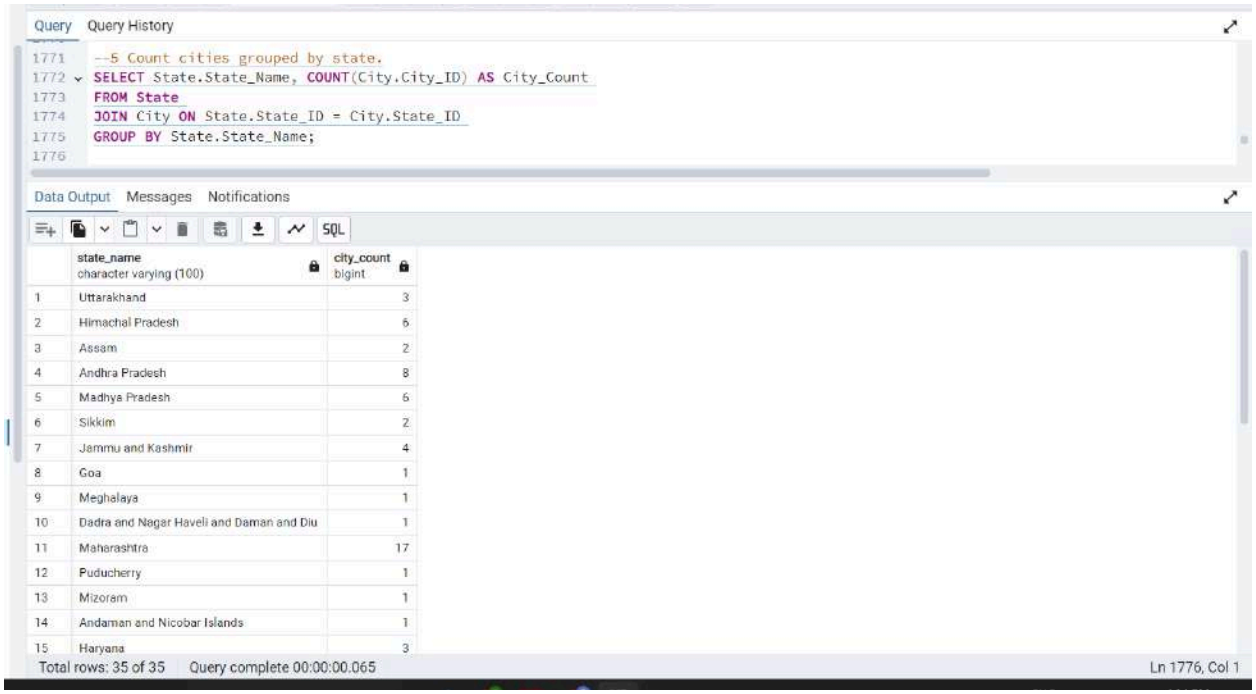
```
SELECT Employer.Employer_Name,
Opportunities.Opportunity_Type
FROM Employer
JOIN Opportunities ON Employer.Employer_ID =
Opportunities.Employer_ID;
```



Number of tuples: 75

5) Count cities grouped by state.

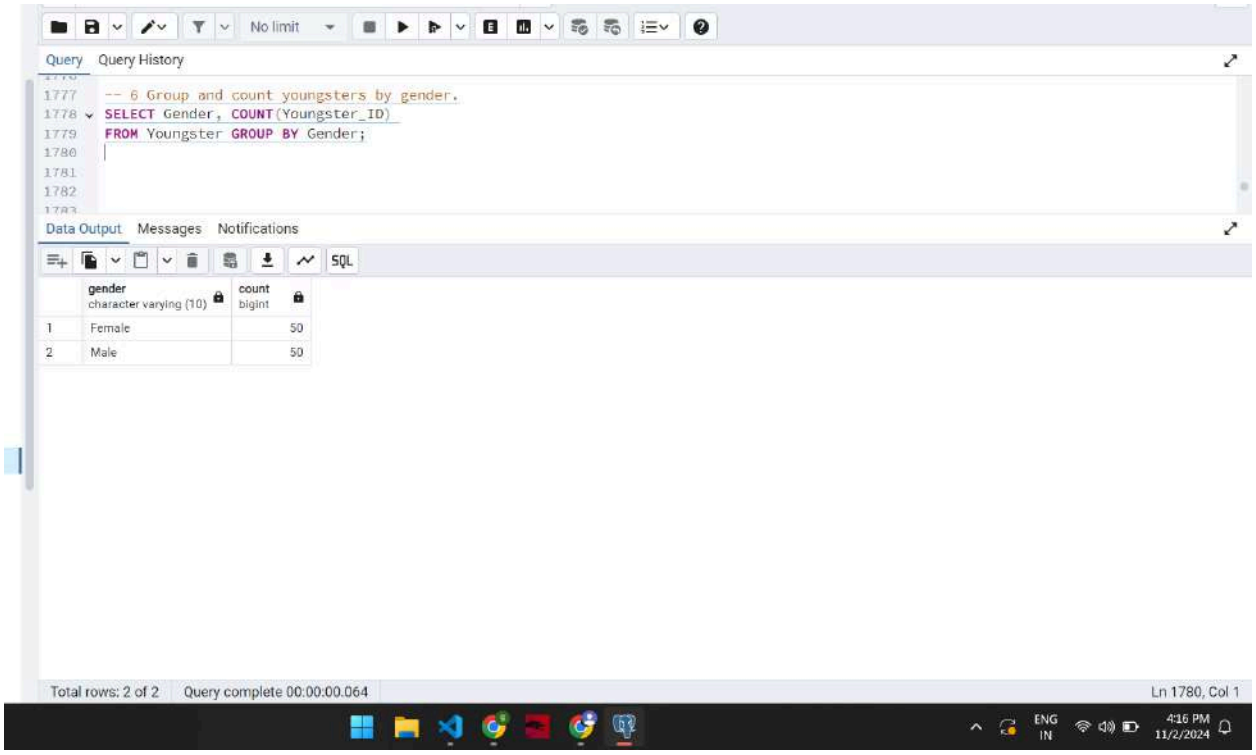
```
SELECT State.State_Name, COUNT(City.City_ID) AS
City_Count
FROM State
JOIN City ON State.State_ID = City.State_ID
GROUP BY State.State_Name;
```



Number of tuples: 35

6)Group and count youngsters by gender.

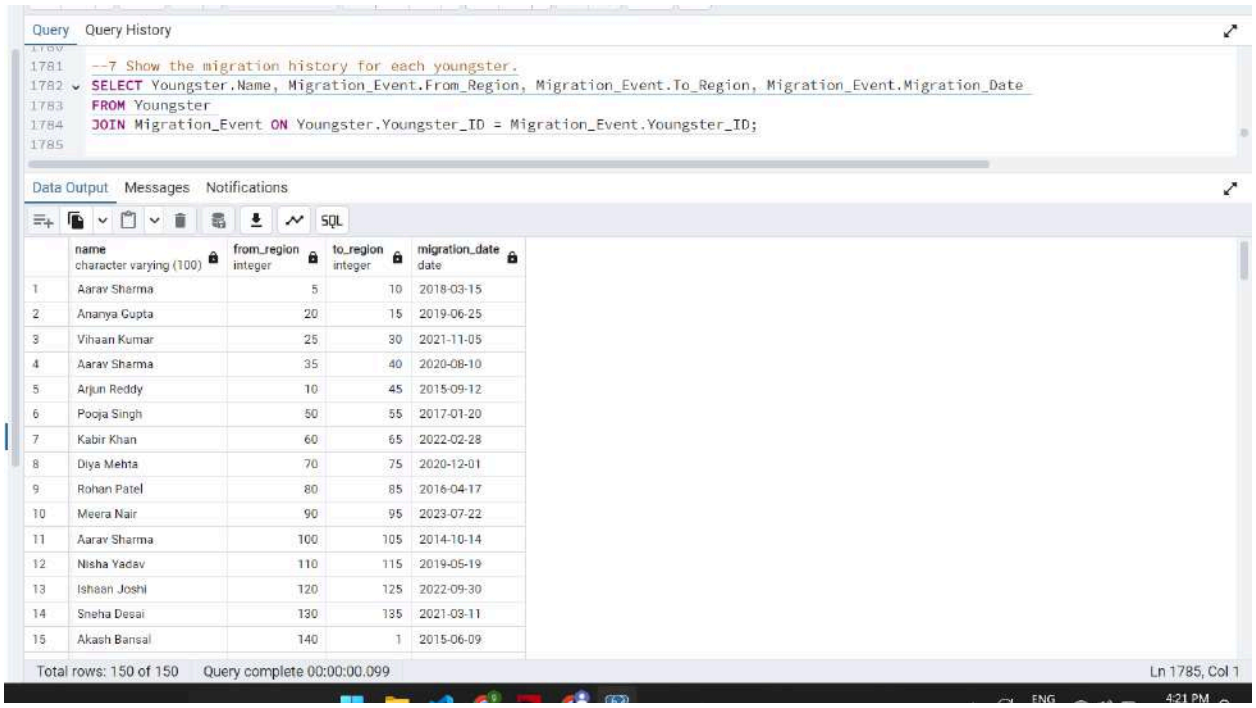
SELECT Gender, COUNT(Youngster_ID)
FROM Youngster GROUP BY Gender;



Number of tuples: 2

7) Show the migration history for each youngster.

```
SELECT Youngster.Name, Migration_Event.From_Region,
Migration_Event.To_Region, Migration_Event.Migration_Date
FROM Youngster
JOIN Migration_Event ON Youngster.Youngster_ID =
Migration_Event.Youngster_ID;
```

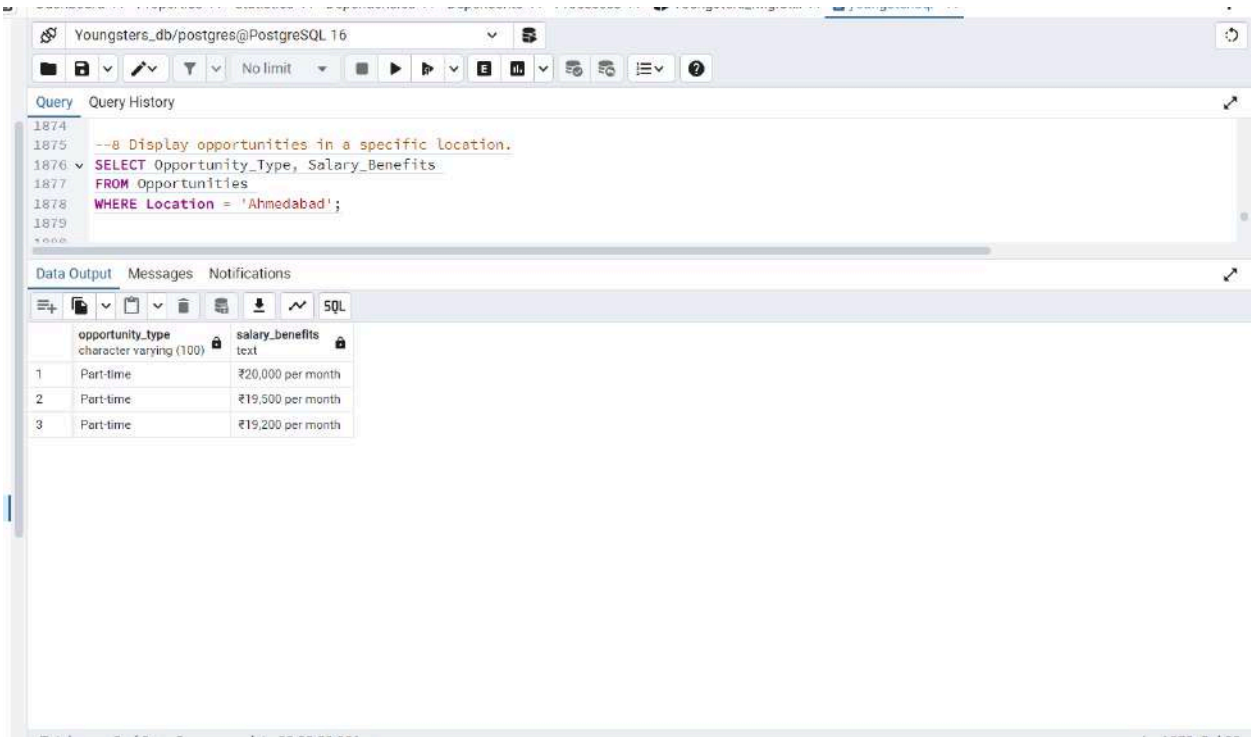


	name character varying (100)	from_region integer	to_region integer	migration_date date
1	Aarav Sharma	5	10	2018-03-15
2	Ananya Gupta	20	15	2019-06-25
3	Vihaan Kumar	25	30	2021-11-05
4	Aarav Sharma	35	40	2020-08-10
5	Arjun Reddy	10	45	2015-09-12
6	Pooja Singh	50	55	2017-01-20
7	Kabir Khan	60	65	2022-02-28
8	Diya Mehta	70	75	2020-12-01
9	Rohan Patel	80	85	2016-04-17
10	Meera Nair	90	95	2023-07-22
11	Aarav Sharma	100	105	2014-10-14
12	Nisha Yadav	110	115	2019-05-19
13	Ishaan Joshi	120	125	2022-09-30
14	Sneha Desai	130	135	2021-03-11
15	Akash Bansal	140	1	2015-06-09

Number of tuples: 150

8)Display opportunities in a specific location.

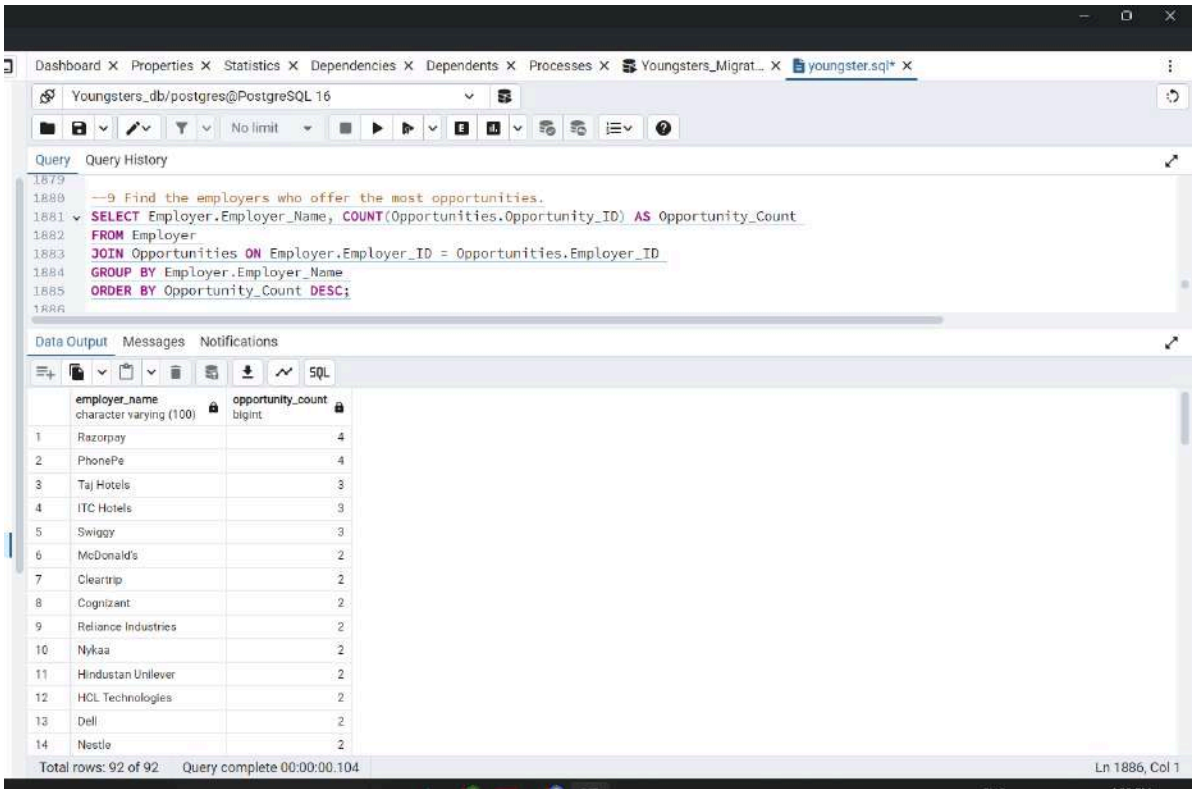
```
SELECT Opportunity_Type, Salary_Benefits
FROM Opportunities
WHERE Location = 'Ahmedabad';
```



Number of tuples: 3

9) Find the employers who offer the most opportunities.

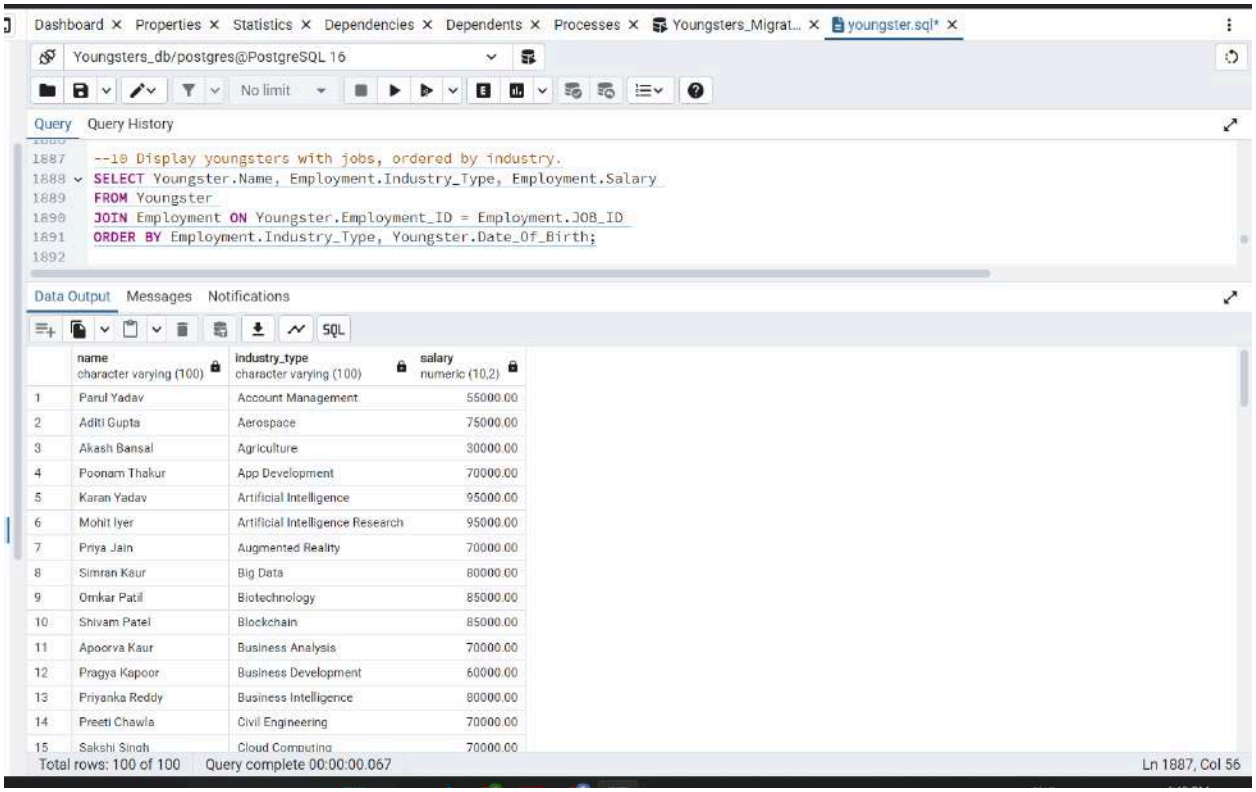
```
SELECT Employer.Employer_Name,
COUNT(Opportunities.Opportunity_ID) AS Opportunity_Count
FROM Employer
JOIN Opportunities ON Employer.Employer_ID =
Opportunities.Employer_ID
GROUP BY Employer.Employer_Name
ORDER BY Opportunity_Count DESC;
```



Number of tuples: 92

10) Display youngsters with jobs, ordered by industry.

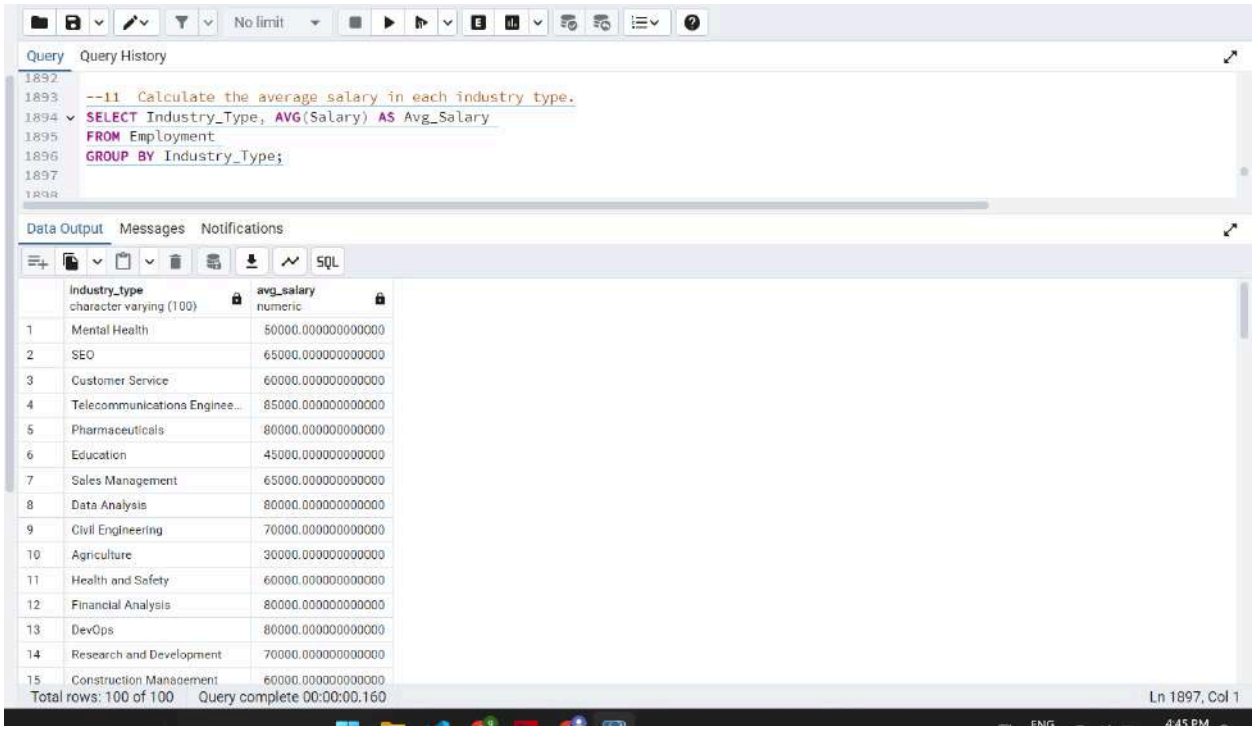
```
SELECT Youngster.Name, Employment.Industry_Type,
Employment.Salary
FROM Youngster
JOIN Employment ON Youngster.Employment_ID =
Employment.JOB_ID
ORDER BY Employment.Industry_Type,
Youngster.Date_Of_Birth;
```



Number of tuples: 100

11) Calculate the average salary in each industry type.

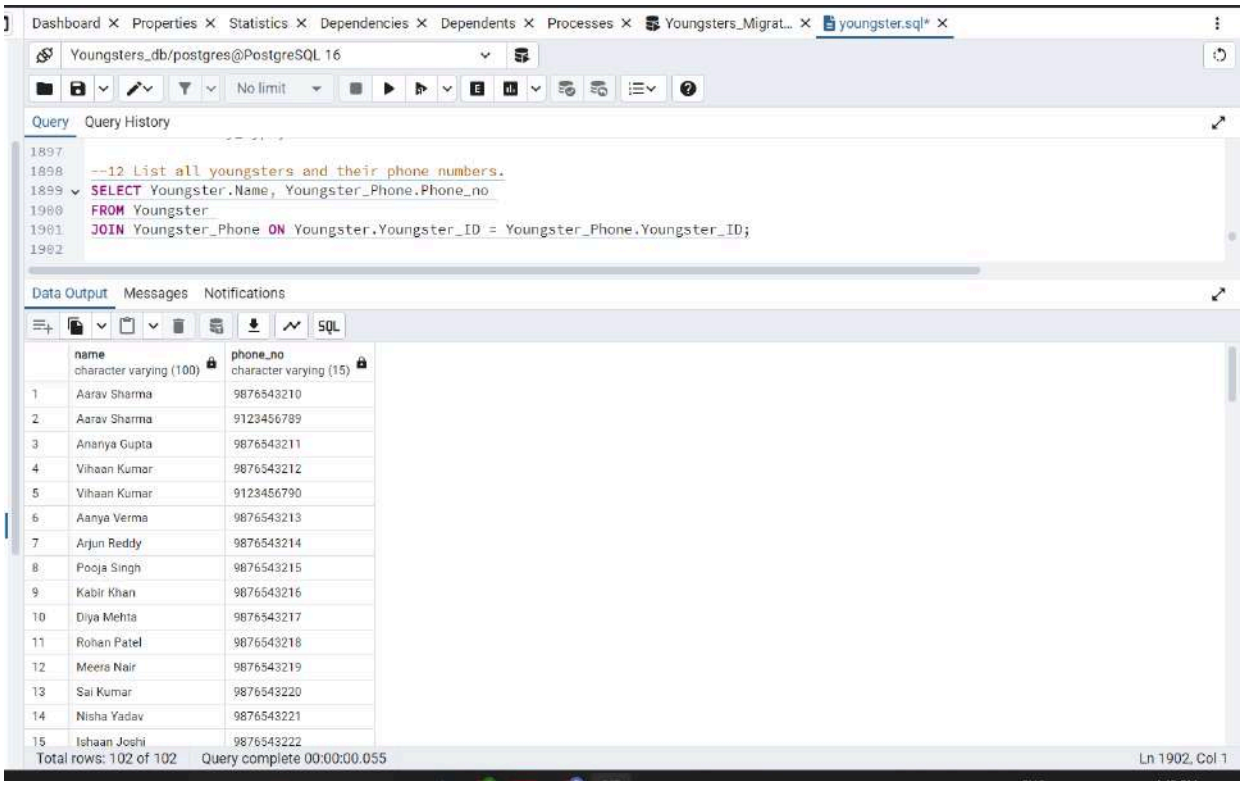
```
SELECT Industry_Type, AVG(Salary) AS Avg_Salary
FROM Employment
GROUP BY Industry_Type;
```



Number of tuples: 100

12) List all youngsters and their phone numbers.

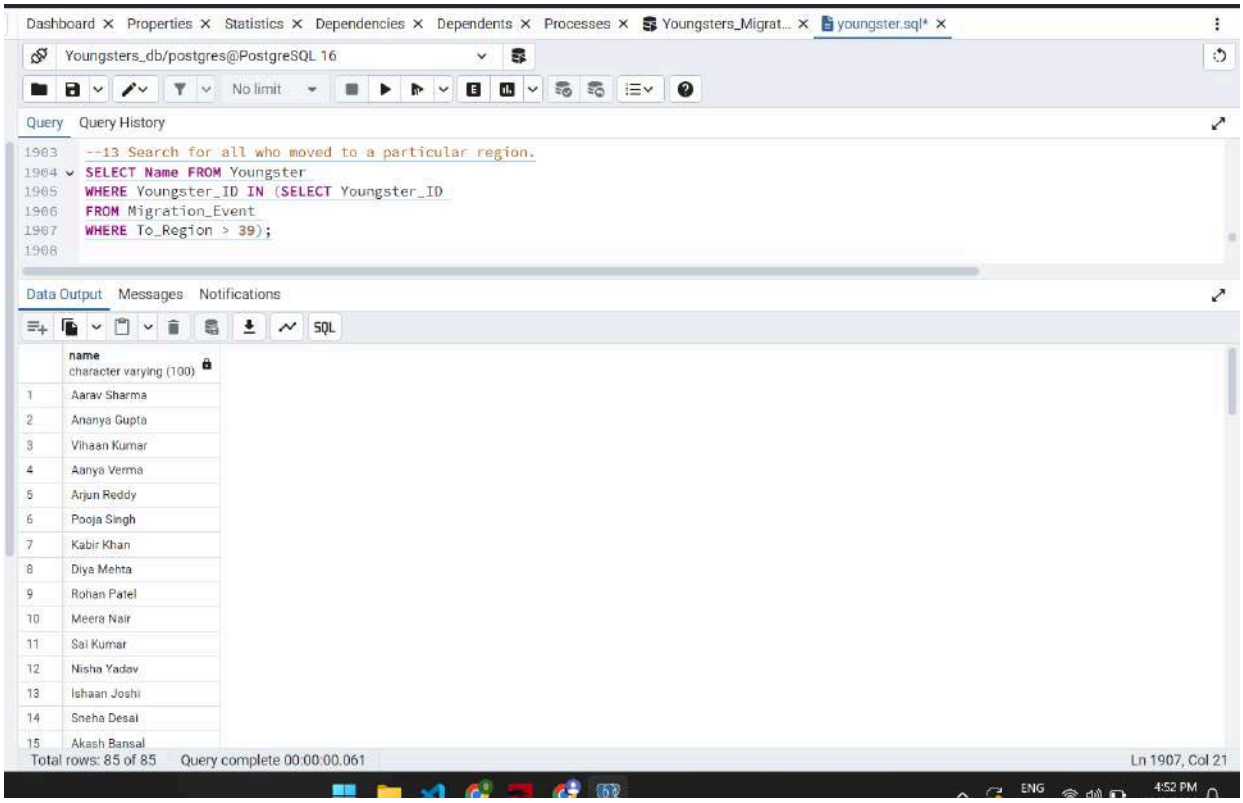
```
SELECT Youngster.Name, Youngster_Phone.Phone_no
FROM Youngster
JOIN Youngster_Phone ON Youngster.Youngster_ID =
Youngster_Phone.Youngster_ID;
```



Number of tuples: 102

13) Search for all who moved to particular regions.

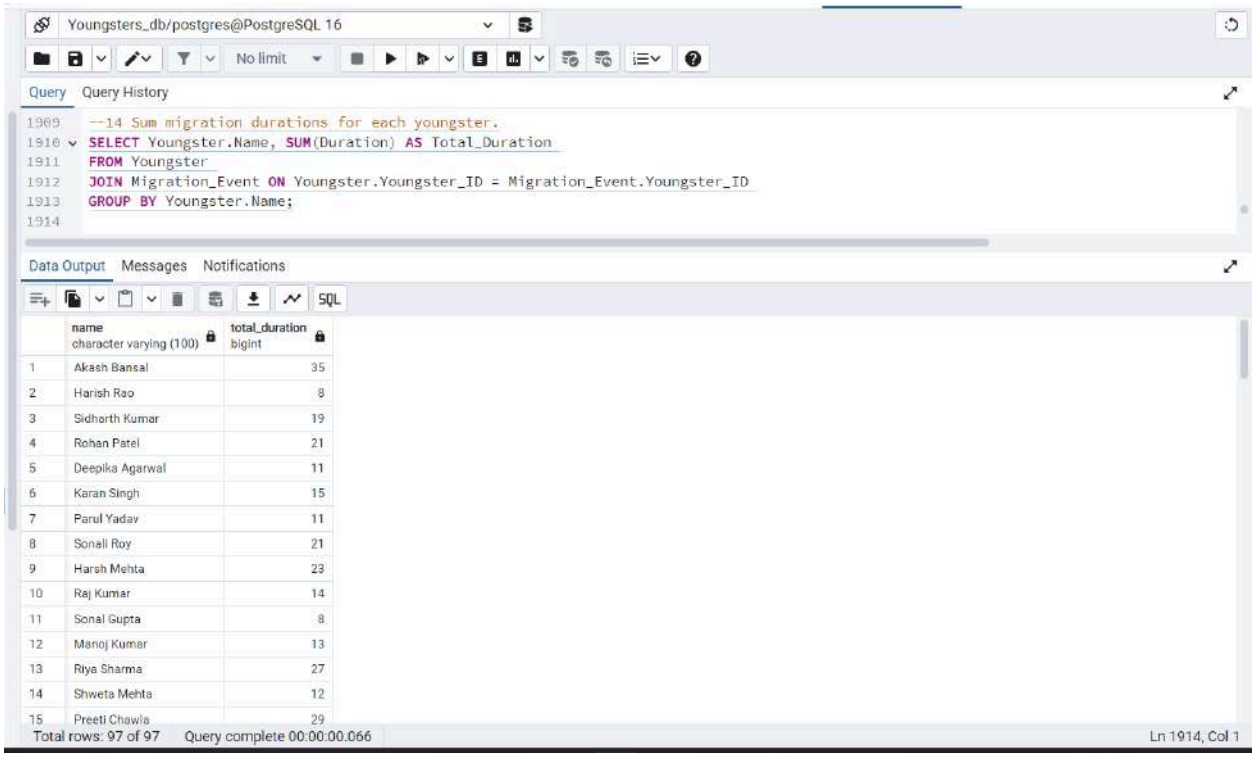
```
SELECT Name FROM Youngster
WHERE Youngster_ID IN (SELECT Youngster_ID
FROM Migration_Event
WHERE To_Region > 39);
```



Number of tuples: 85

14) Sum migration durations for each youngster.

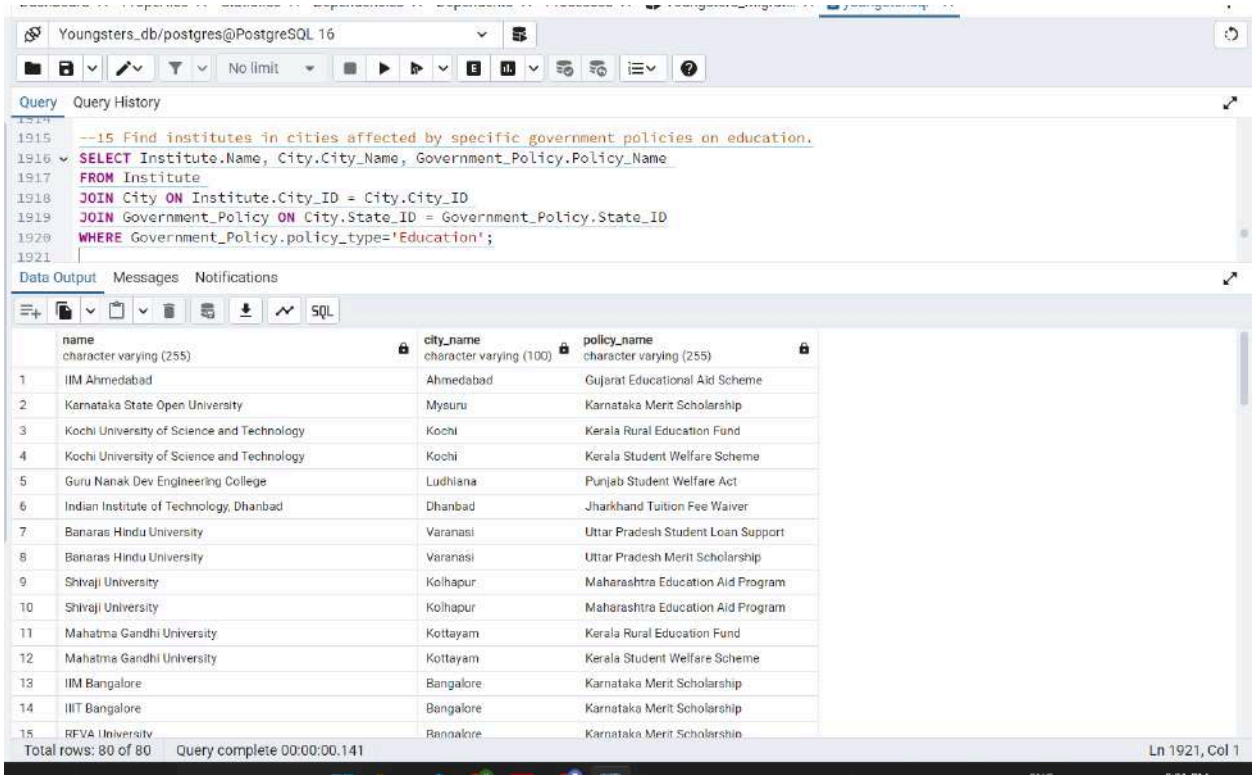
```
SELECT Youngster.Name, SUM(Duration) AS Total_Duration
FROM Youngster
JOIN Migration_Event ON Youngster.Youngster_ID =
Migration_Event.Youngster_ID
GROUP BY Youngster.Name;
```



Number of tuples: 97

15) Find institutes in cities affected by specific government policies on education.

```
SELECT Institute.Name, City.City_Name,
Government_Policy.Policy_Name
FROM Institute
JOIN City ON Institute.City_ID = City.City_ID
JOIN Government_Policy ON City.State_ID =
Government_Policy.State_ID
WHERE Government_Policy.policy_type='Education';
```

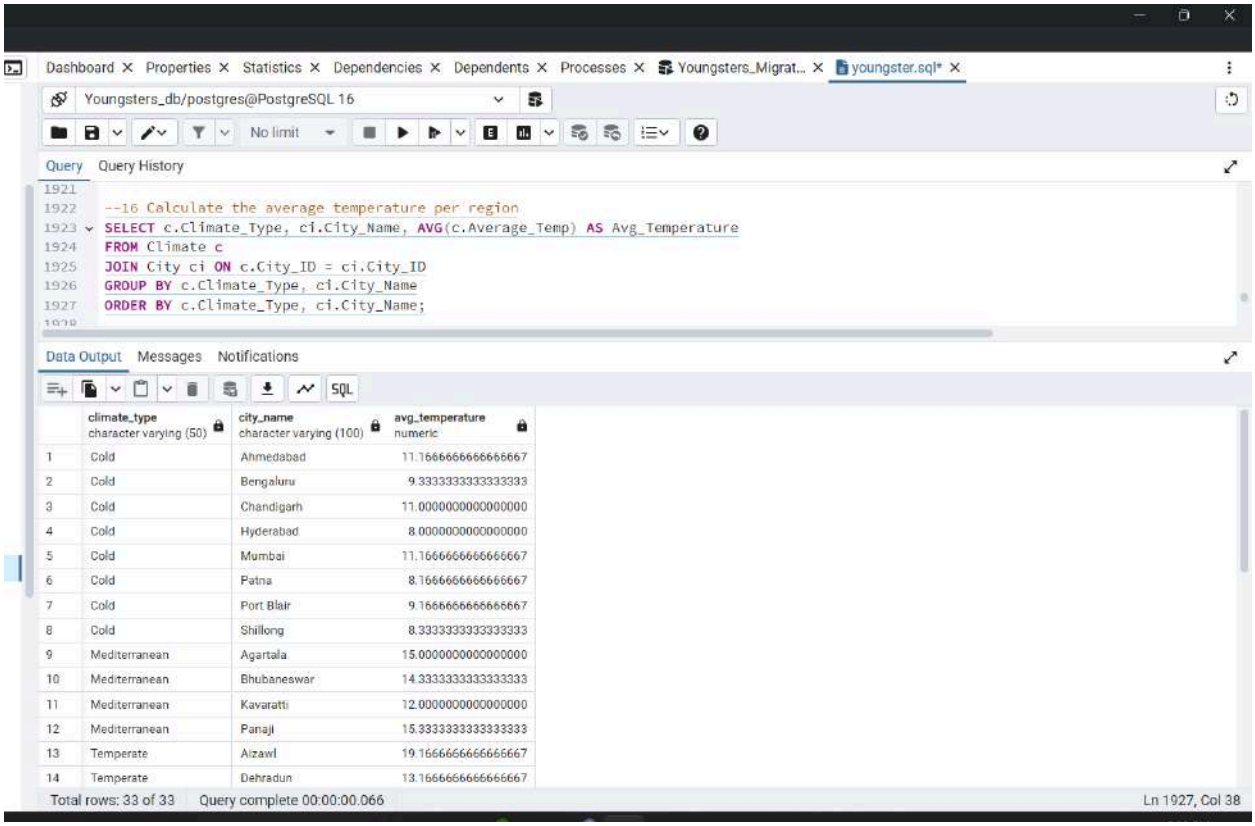


	name character varying (255)	city_name character varying (100)	policy_name character varying (255)
1	IIM Ahmedabad	Ahmedabad	Gujarat Educational Aid Scheme
2	Karnataka State Open University	Mysuru	Karnataka Merit Scholarship
3	Kochi University of Science and Technology	Kochi	Kerala Rural Education Fund
4	Kochi University of Science and Technology	Kochi	Kerala Student Welfare Scheme
5	Guru Nanak Dev Engineering College	Ludhiana	Punjab Student Welfare Act
6	Indian Institute of Technology, Dhanbad	Dhanbad	Jharkhand Tuition Fee Waiver
7	Banaras Hindu University	Varanasi	Uttar Pradesh Student Loan Support
8	Banaras Hindu University	Varanasi	Uttar Pradesh Merit Scholarship
9	Shivaji University	Kolhapur	Maharashtra Education Aid Program
10	Shivaji University	Kolhapur	Maharashtra Education Aid Program
11	Mahatma Gandhi University	Kottayam	Kerala Rural Education Fund
12	Mahatma Gandhi University	Kottayam	Kerala Student Welfare Scheme
13	IIM Bangalore	Bangalore	Karnataka Merit Scholarship
14	IIIT Bangalore	Bangalore	Karnataka Merit Scholarship
15	REVA University	Bangalore	Karnataka Merit Scholarship

Number of tuples: 80

16) Calculate the average temperature per region

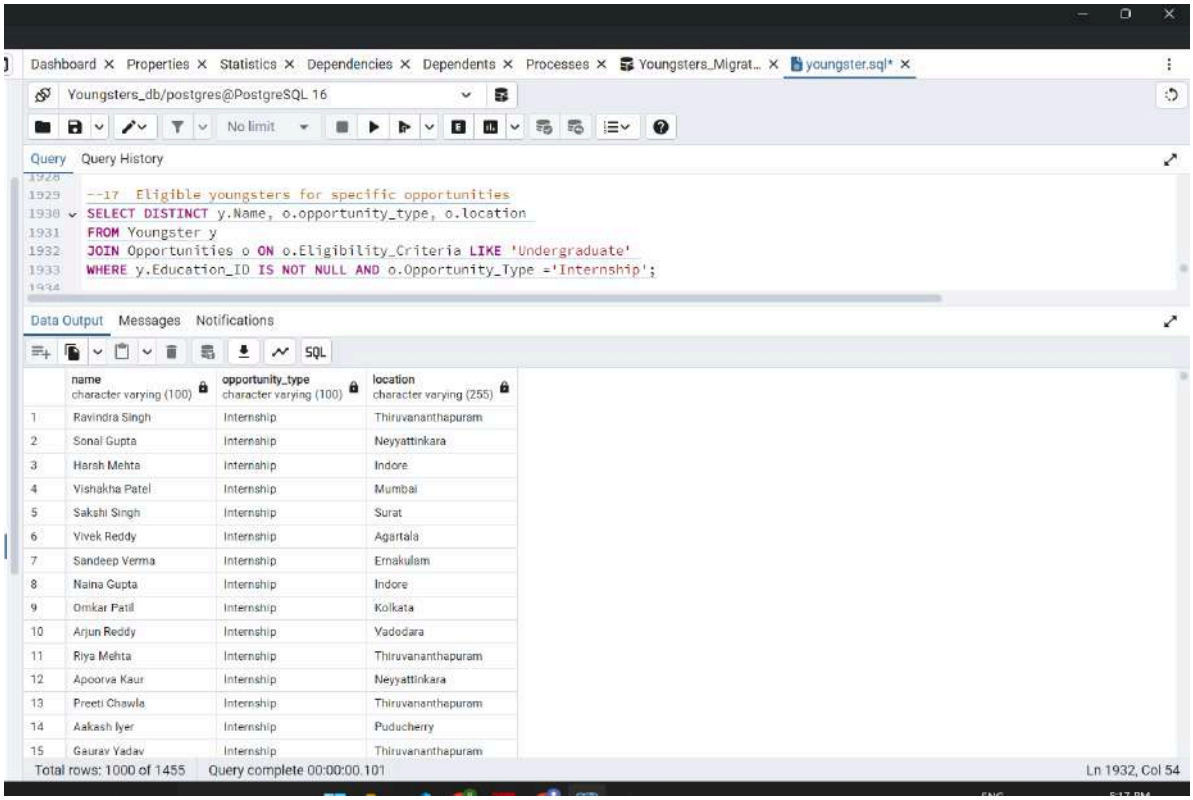
```
SELECT c.Climate_Type, ci.City_Name, AVG(c.Average_Temp)
AS Avg_Temperature
FROM Climate c
JOIN City ci ON c.City_ID = ci.City_ID
GROUP BY c.Climate_Type, ci.City_Name
ORDER BY c.Climate_Type, ci.City_Name;
```



Number of tuples: 33

17) Eligible youngsters for specific opportunities

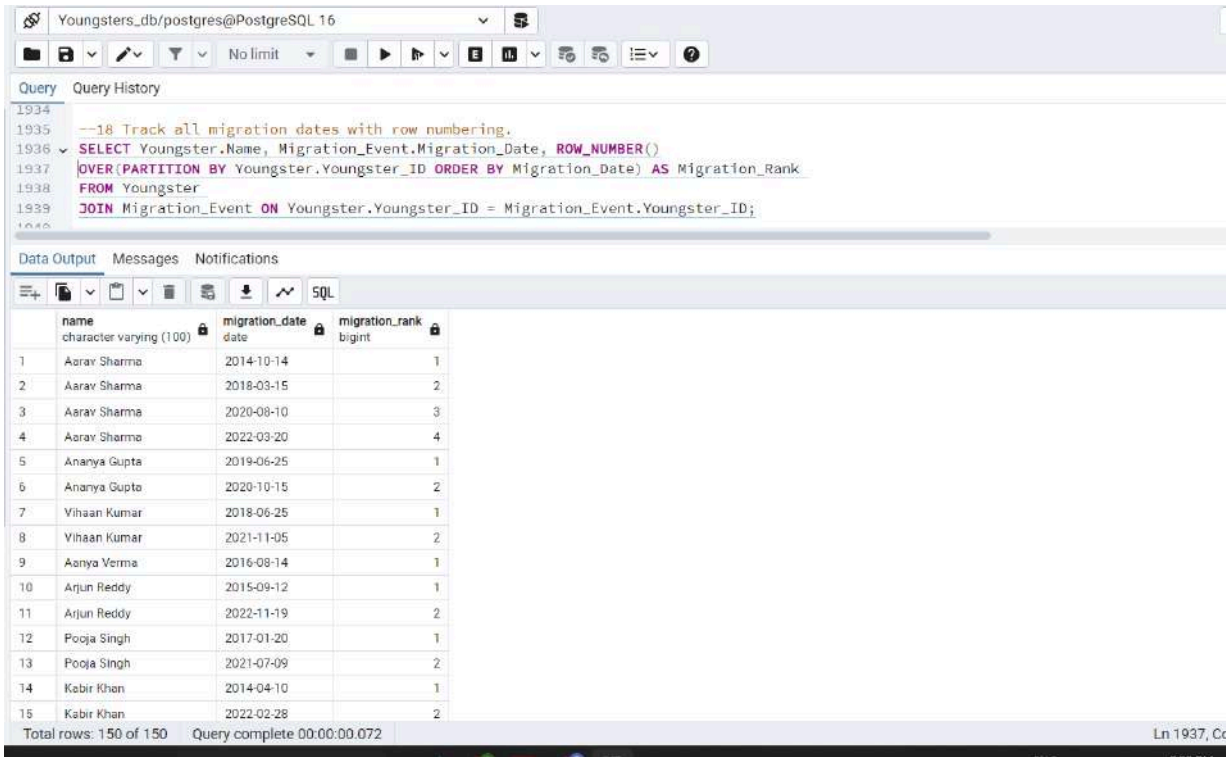
```
SELECT DISTINCT y.Name, o.opportunity_type, o.location
FROM Youngster y
JOIN Opportunities o ON o.Eligibility_Criteria LIKE
'Undergraduate'
WHERE y.Education_ID IS NOT NULL AND
o.Opportunity_Type ='Internship';
```



Number of tuples 1455

18) Track all migration dates with row numbering.

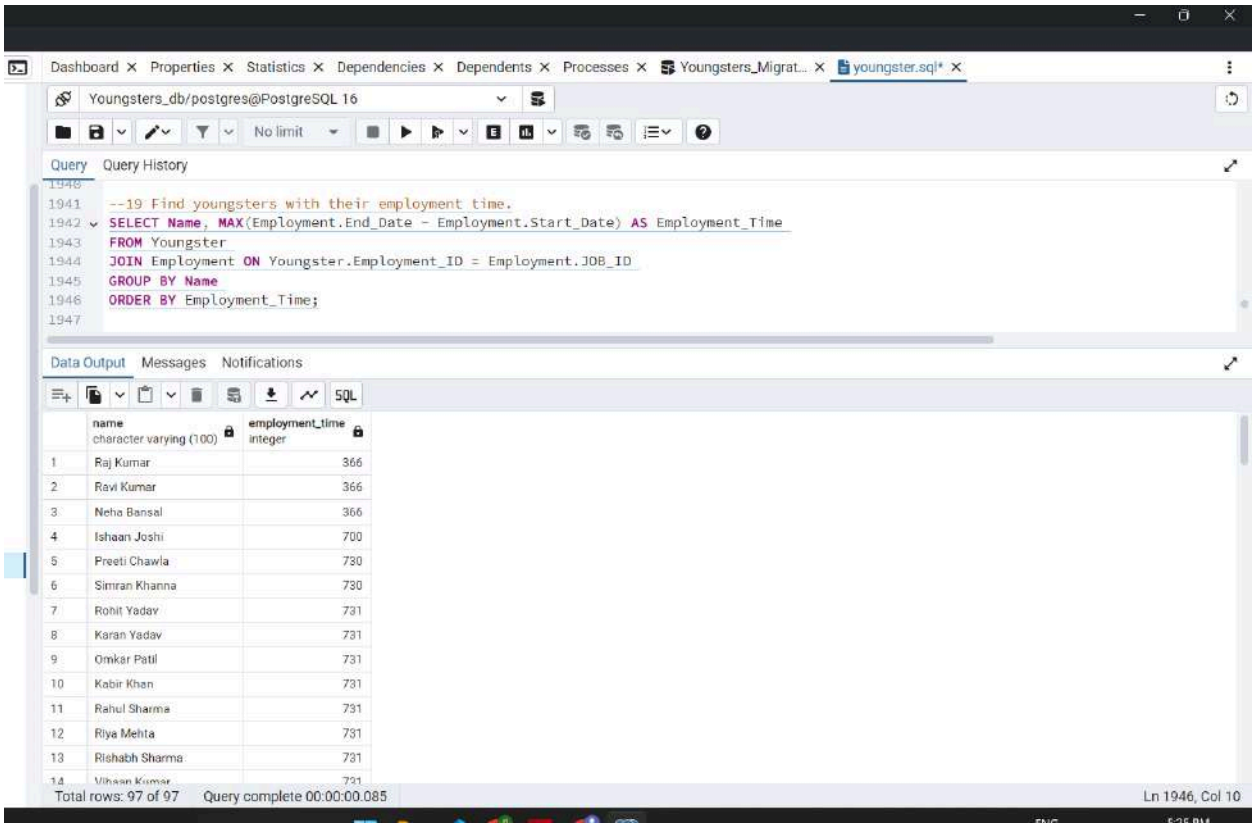
```
SELECT Youngster.Name, Migration_Event.Migration_Date,
ROW_NUMBER()
OVER(PARTITION BY Youngster.Youngster_ID ORDER BY
Migration_Date) AS Migration_Rank
FROM Youngster
JOIN Migration_Event ON Youngster.Youngster_ID =
Migration_Event.Youngster_ID;
```



Number of tuples: 150

19) Find youngsters with the longest single employment.

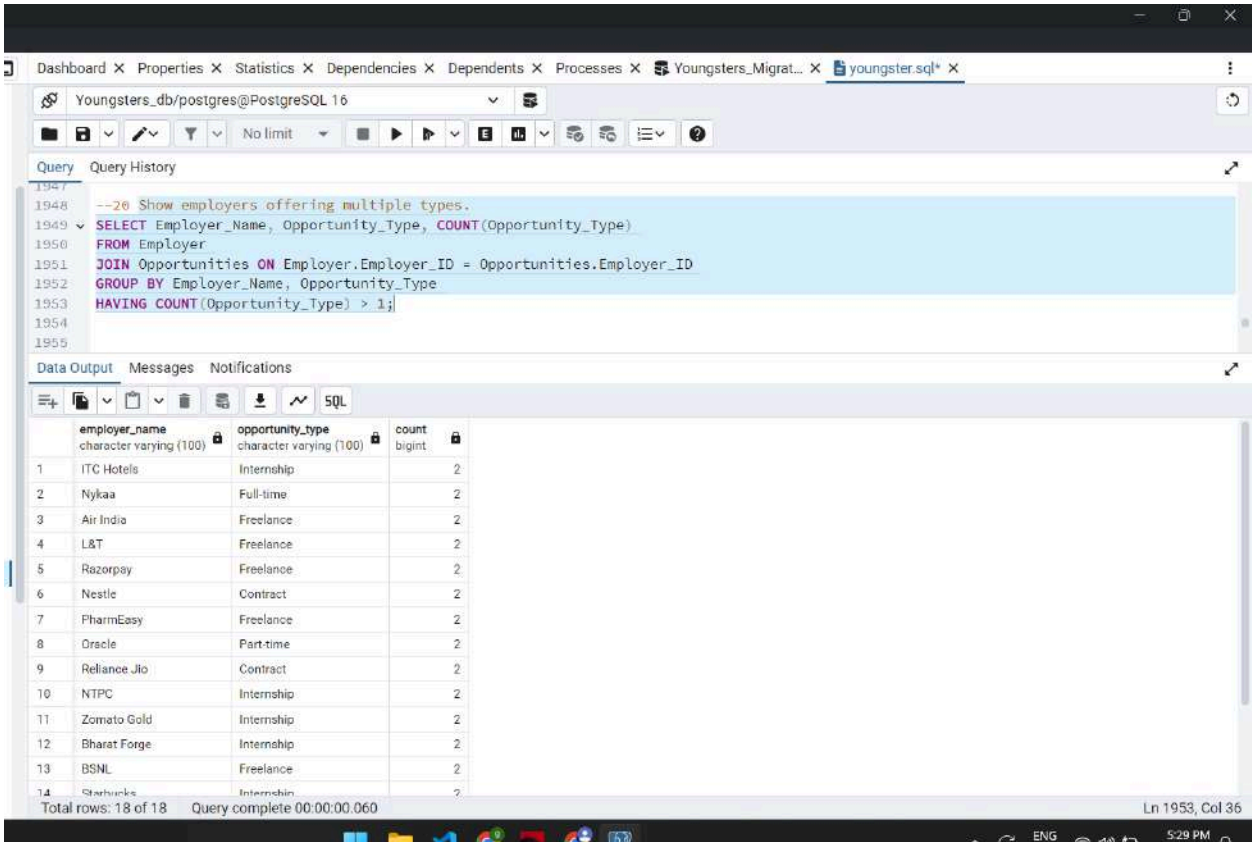
```
SELECT Name, MAX(Employment.End_Date -
Employment.Start_Date) AS Employment_Time
FROM Youngster
JOIN Employment ON Youngster.Employment_ID =
Employment.JOB_ID
GROUP BY Name
ORDER BY Employment_Time;
```



Number of tuples: 97

20) Show employers offering multiple types.

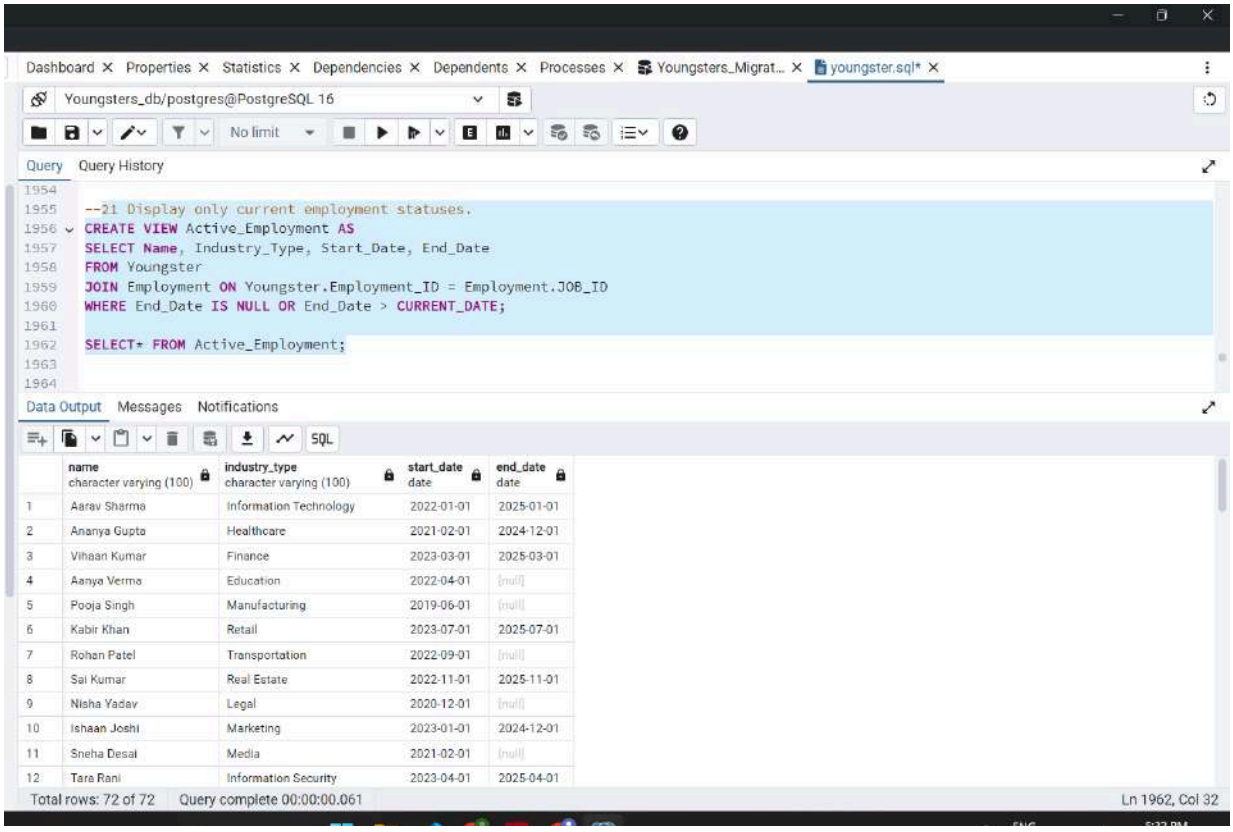
```
SELECT Employer_Name, Opportunity_Type,
COUNT(Opportunity_Type)
FROM Employer
JOIN Opportunities ON Employer.Employer_ID =
Opportunities.Employer_ID
GROUP BY Employer_Name, Opportunity_Type
HAVING COUNT(Opportunity_Type) > 1;
```



Number of tuples: 18

21 Display only current employment statuses.

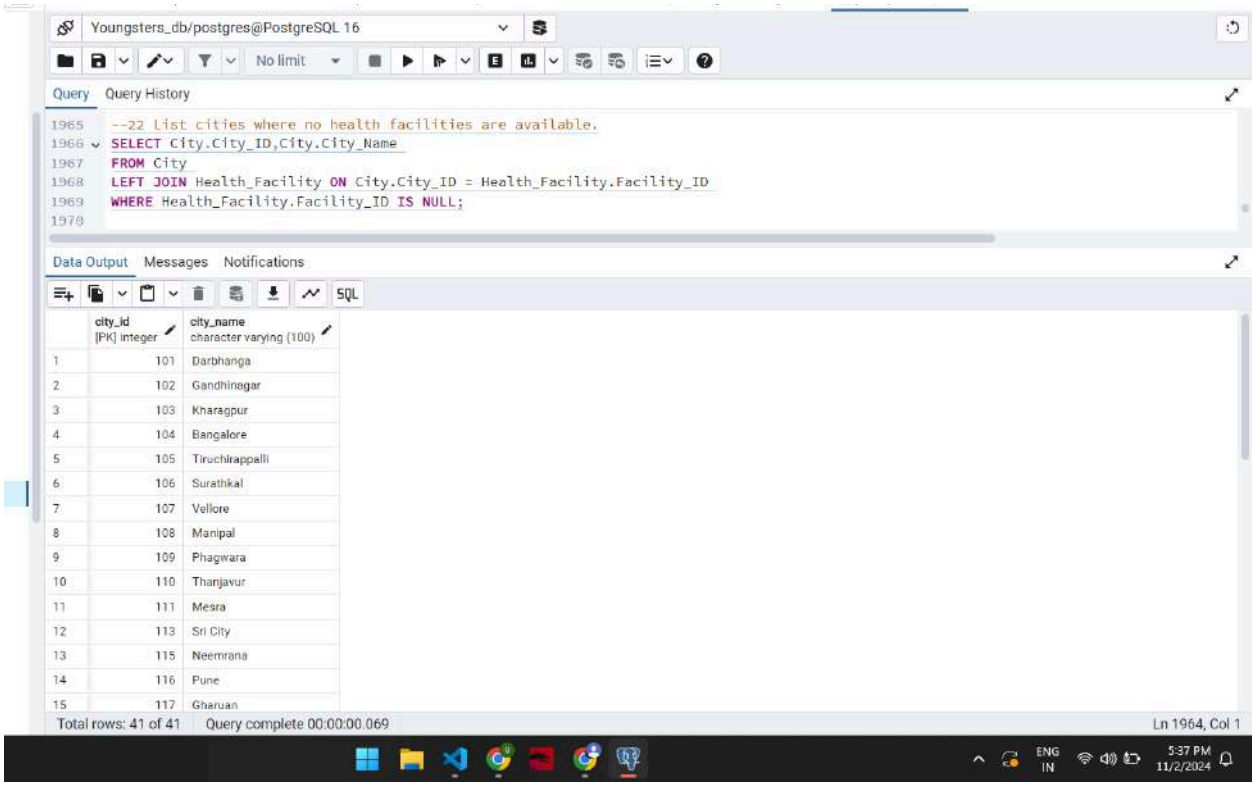
```
CREATE VIEW Active_Employment AS
SELECT Name, Industry_Type, Start_Date, End_Date
FROM Youngster
JOIN Employment ON Youngster.Employment_ID =
Employment.JOB_ID
WHERE End_Date IS NULL OR End_Date > CURRENT_DATE;

SELECT* FROM Active_Employment;
```



Number of tuples: 72

22) List cities where no health facilities are available.

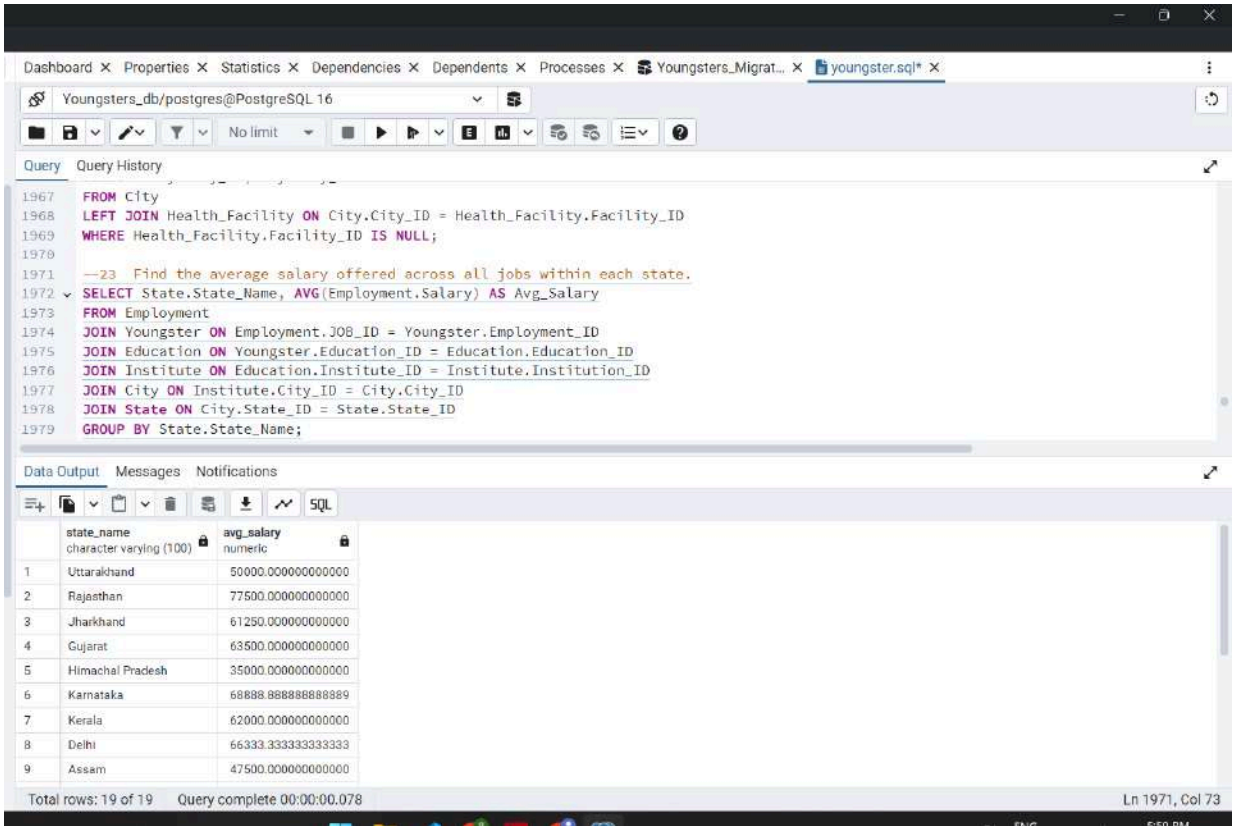
```
SELECT City.City_ID,City.City_Name
FROM City
LEFT JOIN Health_Facility ON City.City_ID =
Health_Facility.Facility_ID
WHERE Health_Facility.Facility_ID IS NULL;
```



Number of tuples: 41

23) Find the average salary offered across all jobs within each state.

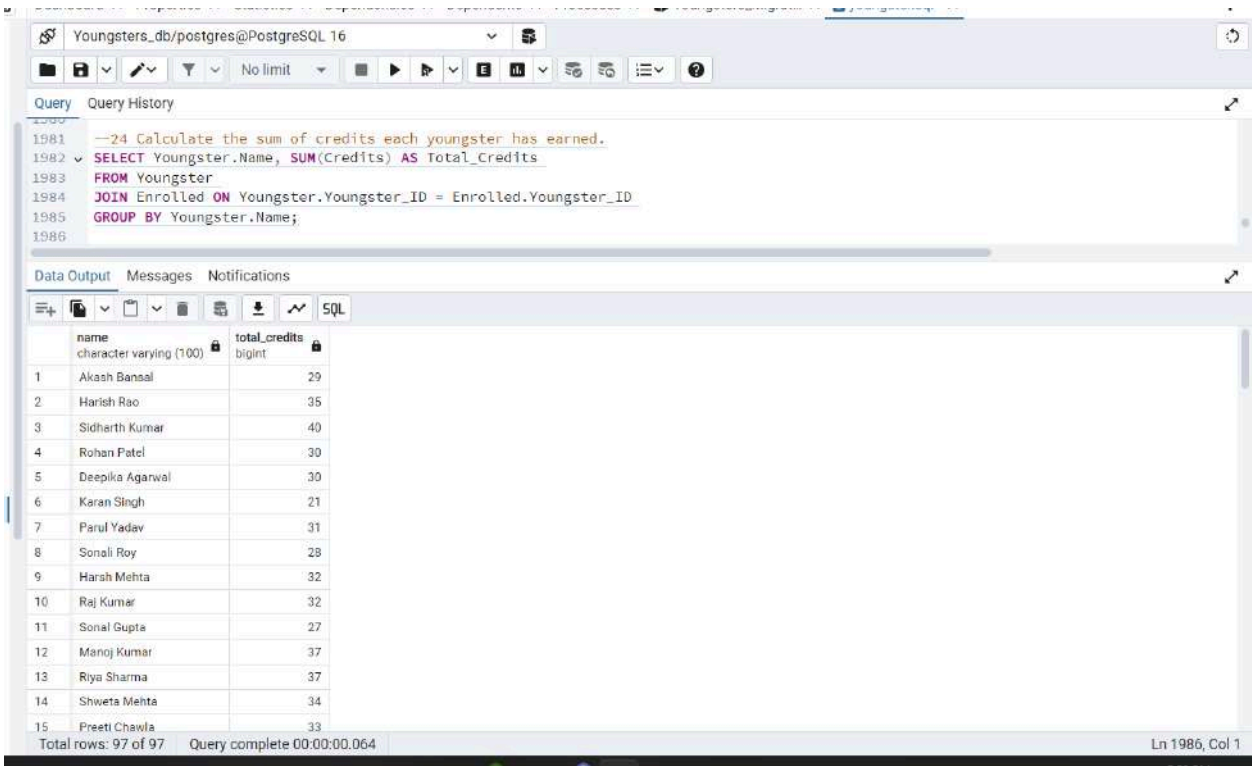
```
SELECT State.State_Name, AVG(Employment.Salary) AS Avg_Salary
FROM Employment
JOIN Youngster ON Employment.JOB_ID = Youngster.Employment_ID
JOIN Education ON Youngster.Education_ID =
Education.Education_ID
JOIN Institute ON Education.Institute_ID = Institute.Institution_ID
JOIN City ON Institute.City_ID = City.City_ID
JOIN State ON City.State_ID = State.State_ID
GROUP BY State.State_Name;
```



Number of tuples: 19

24) Calculate the sum of credits each youngster has earned.

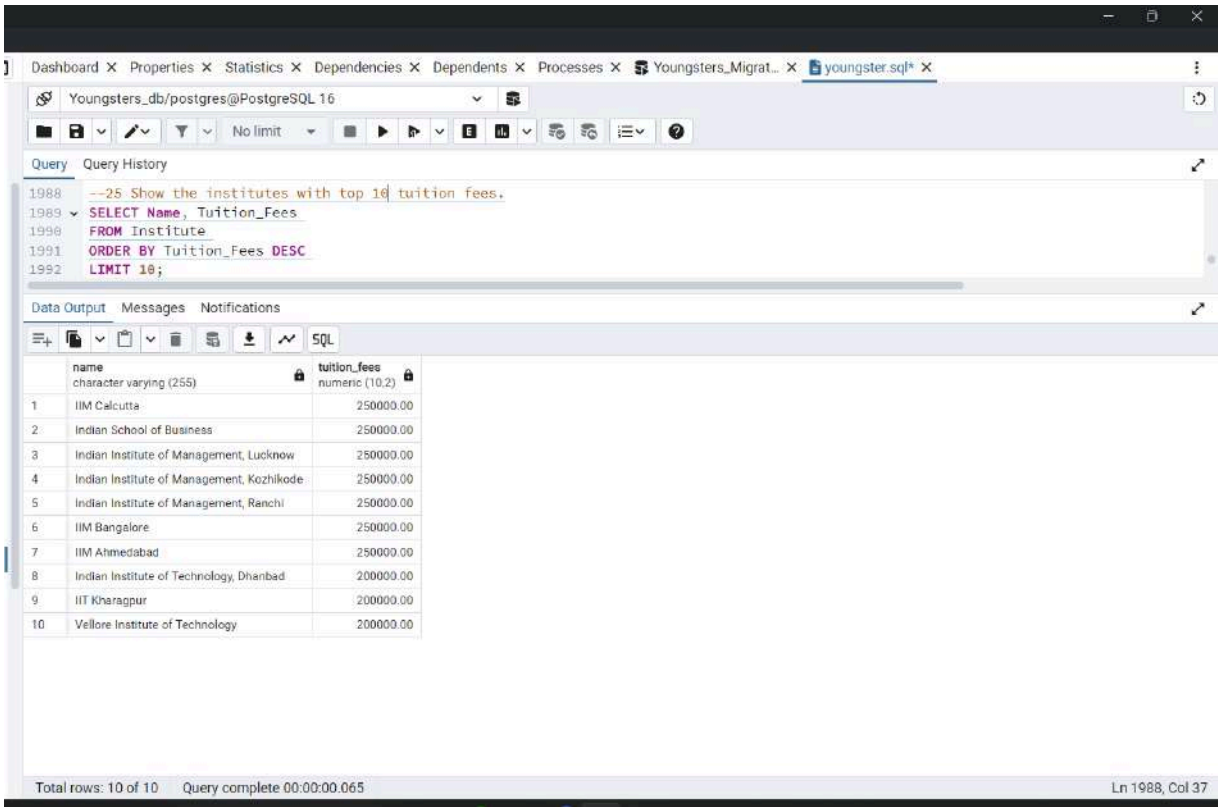
```
SELECT Youngster.Name, SUM(Credits) AS Total_Credits
FROM Youngster
JOIN Enrolled ON Youngster.Youngster_ID = Enrolled.Youngster_ID
GROUP BY Youngster.Name;
```



Number of tuples: 97

25) Show the institutes with top tuition 10 fees.

```
SELECT Name, Tuition_Fees
FROM Institute
ORDER BY Tuition_Fees DESC
LIMIT 10;
```

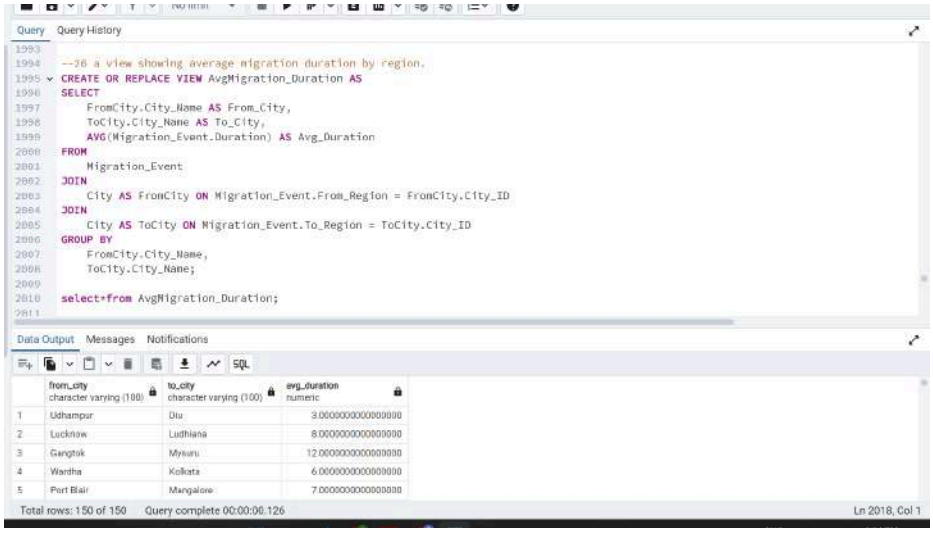


Number of tuples: 10

26) a view showing average migration duration by region.

```
CREATE OR REPLACE VIEW AvgMigration_Duration AS
SELECT
    FromCity.City_Name AS From_City,
    ToCity.City_Name AS To_City,
    AVG(Migration_Event.Duration) AS Avg_Duration
FROM
    Migration_Event
JOIN
    City AS FromCity ON Migration_Event.From_Region =
FromCity.City_ID
JOIN
    City AS ToCity ON Migration_Event.To_Region =
ToCity.City_ID
GROUP BY
    FromCity.City_Name,
    ToCity.City_Name;
```

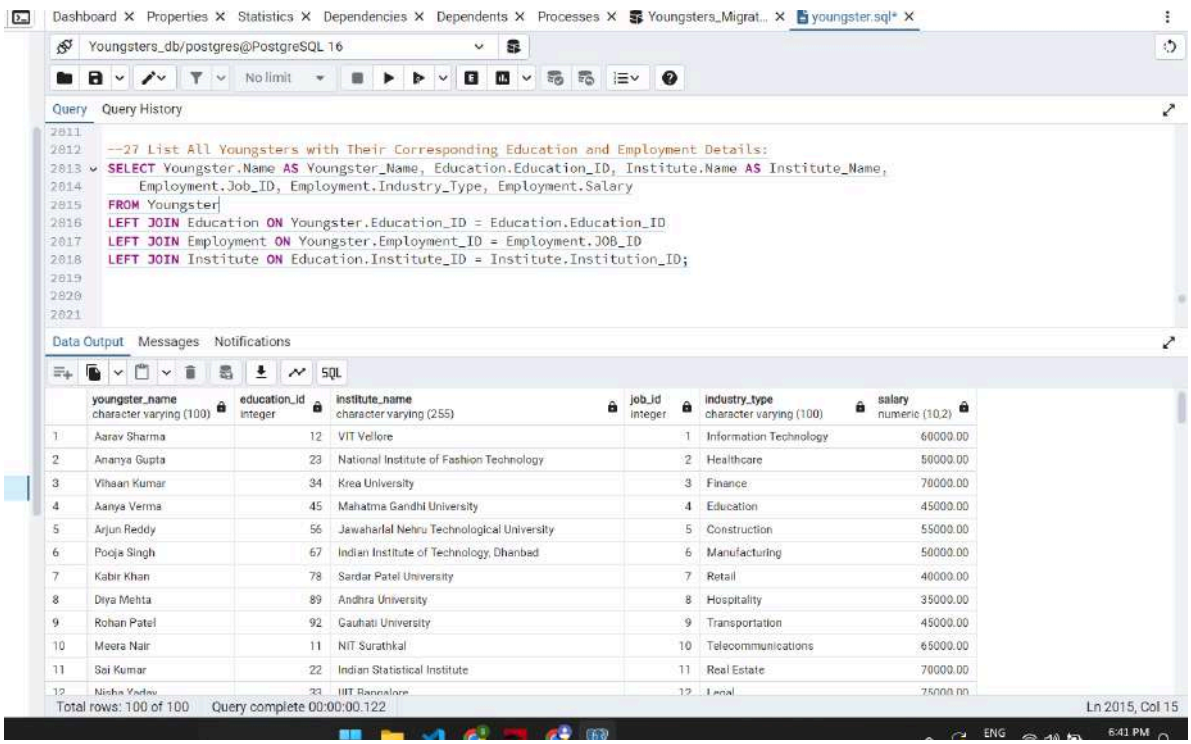
select*from AvgMigration_Duration;



Number of tuples: 150

27) List All Youngsters with Their Corresponding Education and Employment Details:

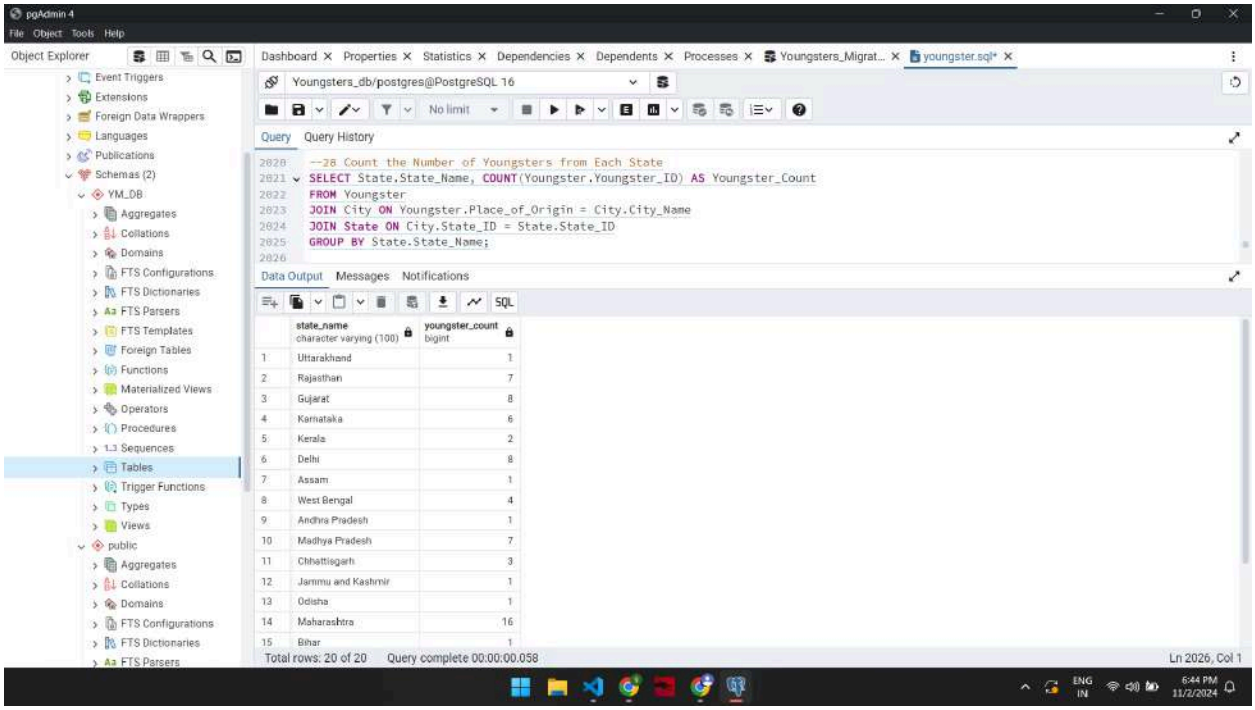
```
SELECT Youngster.Name AS Youngster_Name,
Education.Education_ID, Institute.Name AS Institute_Name,
        Employment.Job_ID, Employment.Industry_Type,
Employment.Salary
FROM Youngster
LEFT JOIN Education ON Youngster.Education_ID =
Education.Education_ID
LEFT JOIN Employment ON Youngster.Employment_ID =
Employment.JOB_ID
LEFT JOIN Institute ON Education.Institute_ID =
Institute.Institution_ID;
```



Number of tuples: 100

28) Count the Number of Youngsters from Each State

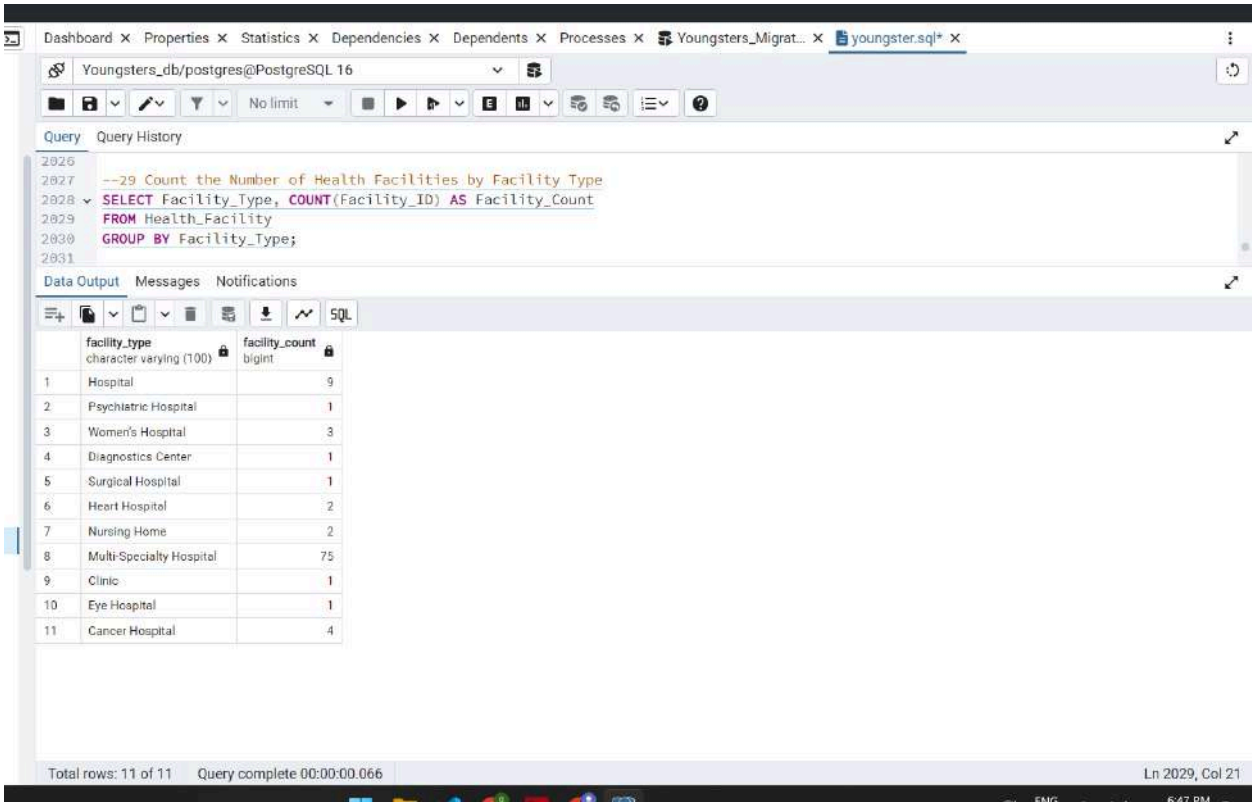
```
SELECT State.State_Name, COUNT(Youngster.Youngster_ID)
AS Youngster_Count
FROM Youngster
JOIN City ON Youngster.Place_of_Origin = City.City_Name
JOIN State ON City.State_ID = State.State_ID
GROUP BY State.State_Name;
```



Number of tuples: 20

29) Count the Number of Health Facilities by Facility Type

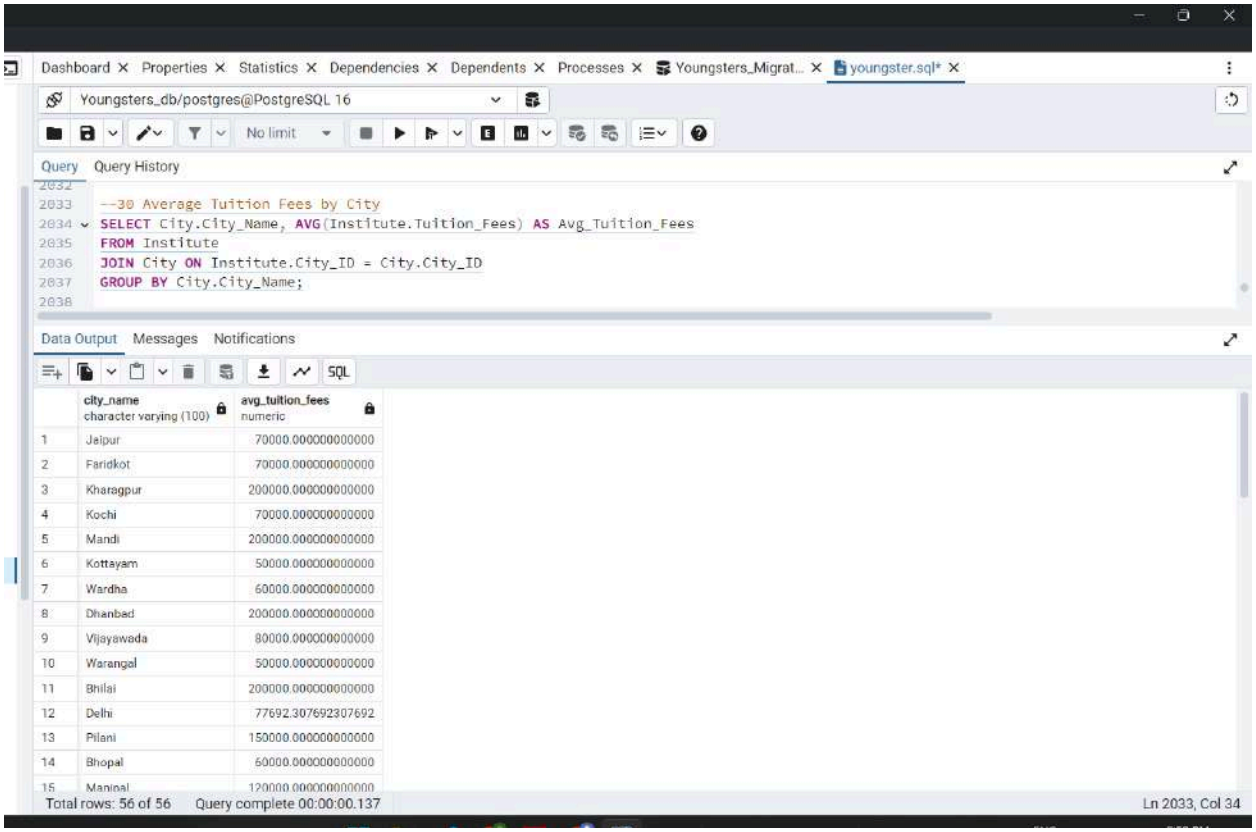
```
SELECT Facility_Type, COUNT(Facility_ID) AS Facility_Count
FROM Health_Facility
GROUP BY Facility_Type;
```



Number of tuples: 11

30) Average Tuition Fees by City

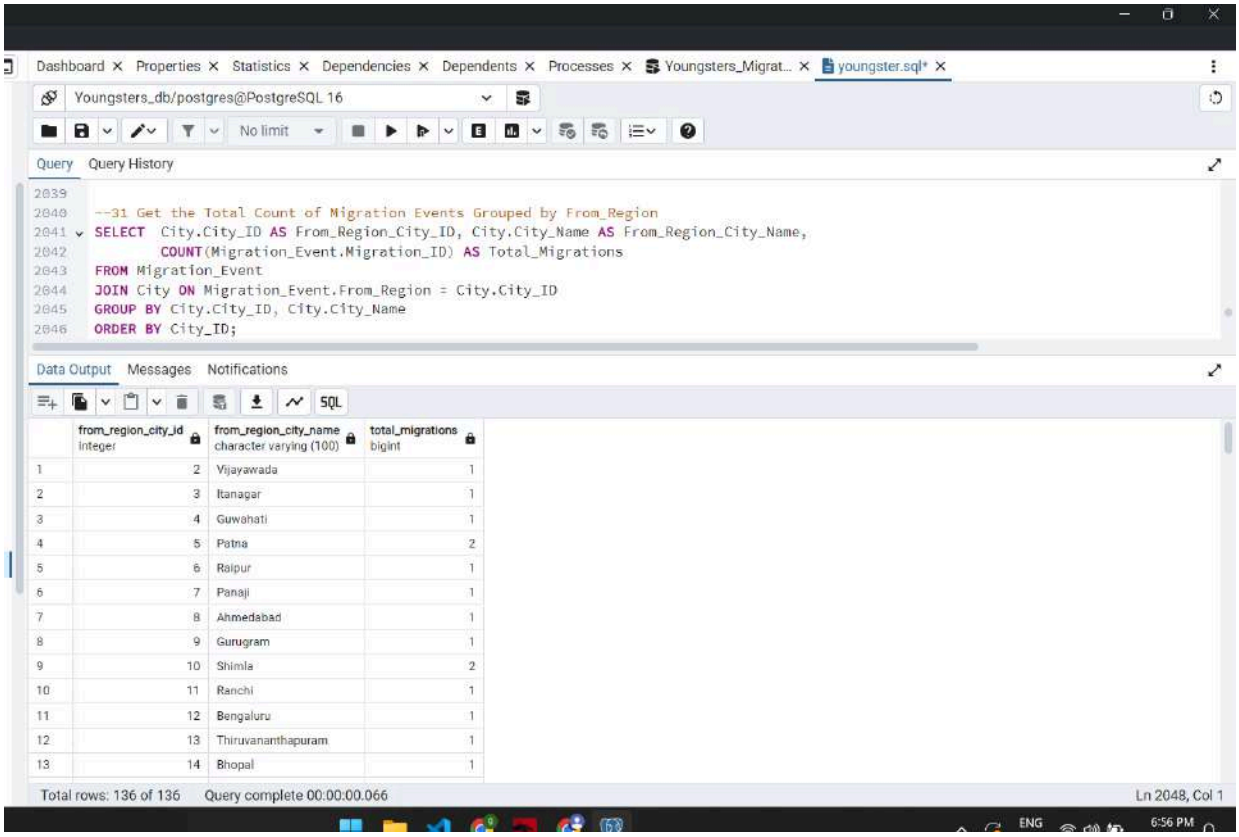
```
SELECT City.City_Name, AVG(Institute.Tuition_Fees) AS
Avg_Tuition_Fees
FROM Institute
JOIN City ON Institute.City_ID = City.City_ID
GROUP BY City.City_Name;
```



Number of tuples: 56

31) Get the Total Count of Migration Events Grouped by From_Region

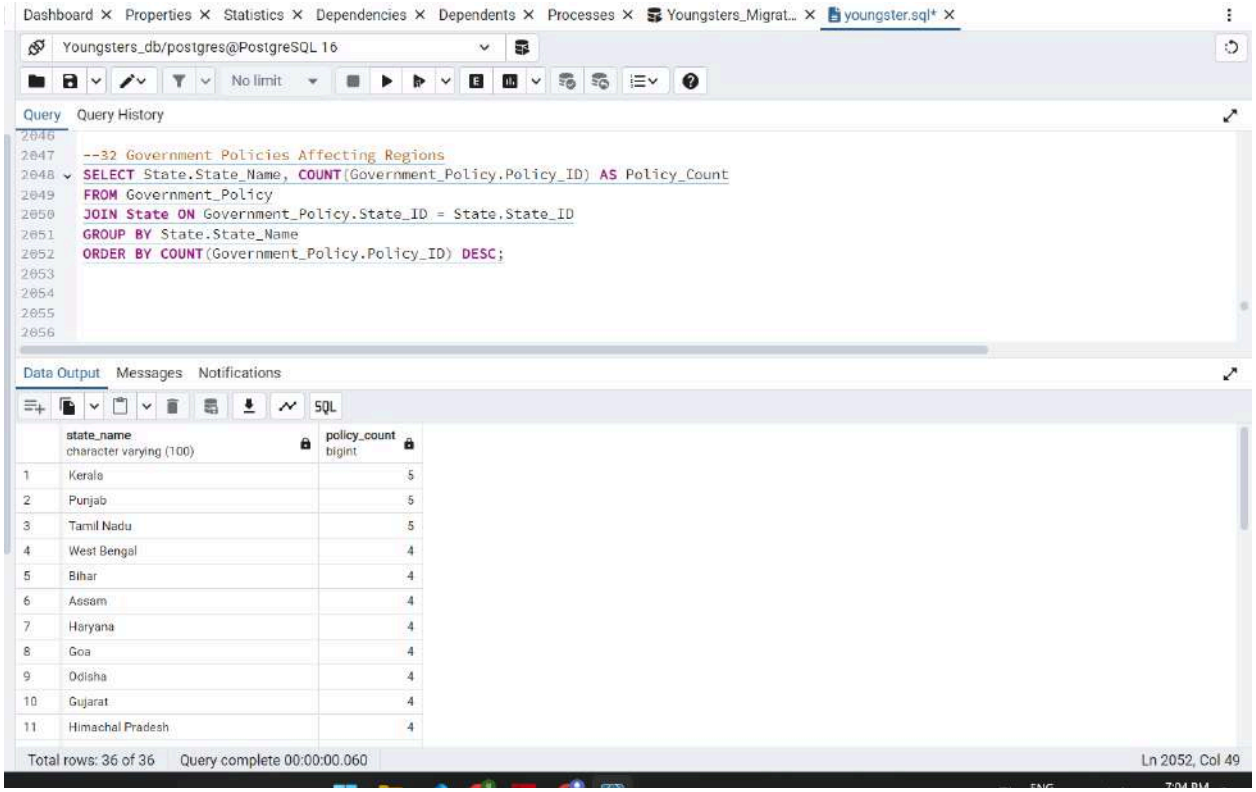
```
SELECT   City.City_ID AS From_Region_City_ID,
City.City_Name AS From_Region_City_Name,
                COUNT(Migration_Event.Migration_ID) AS
Total_Migrations
FROM Migration_Event
JOIN City ON Migration_Event.From_Region = City.City_ID
GROUP BY City.City_ID, City.City_Name
ORDER BY City_ID;
```



Number of tuples: 136

32) Government Policies Affecting Regions

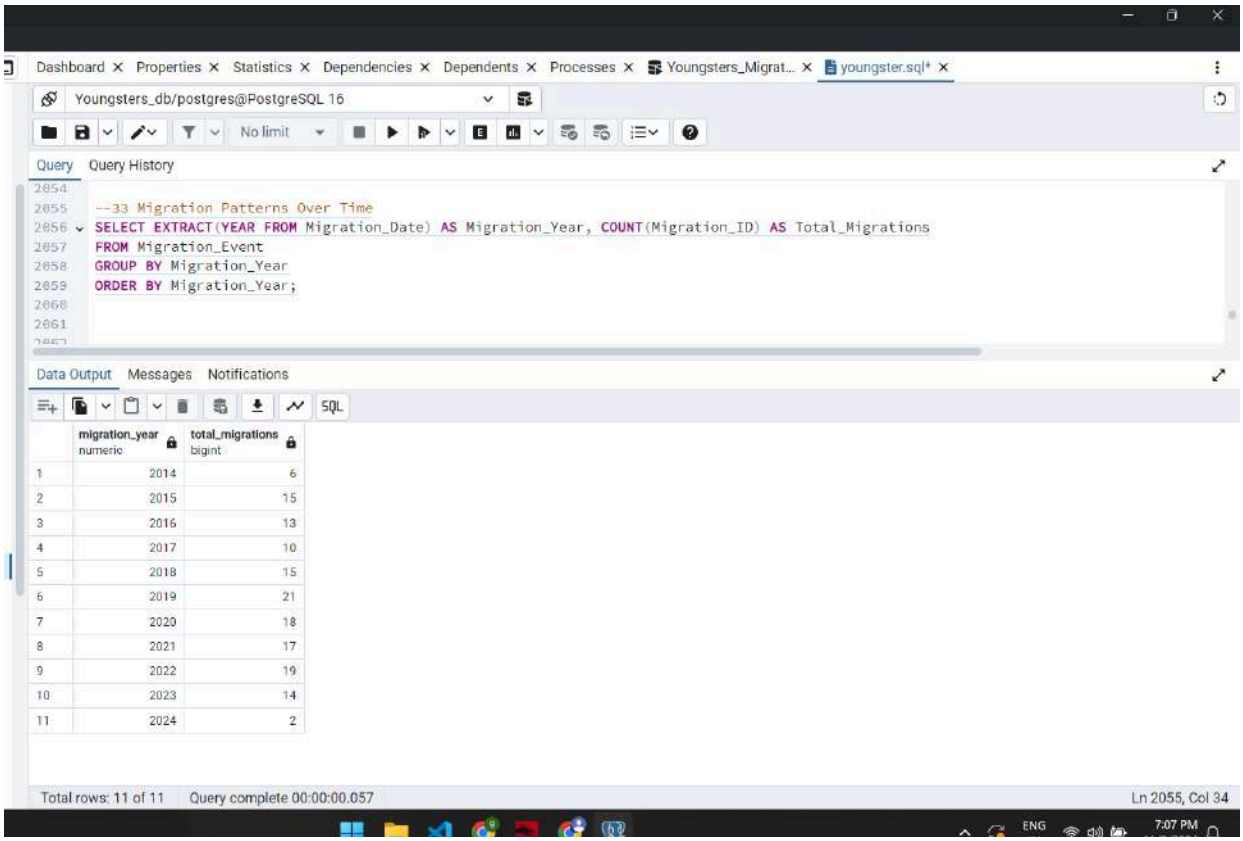
```
SELECT State.State_Name,
COUNT(Government_Policy.Policy_ID) AS Policy_Count
FROM Government_Policy
JOIN State ON Government_Policy.State_ID = State.State_ID
GROUP BY State.State_Name
ORDER BY COUNT(Government_Policy.Policy_ID) DESC;
```



Number of tuples: 36

33) Migration Patterns Over Time

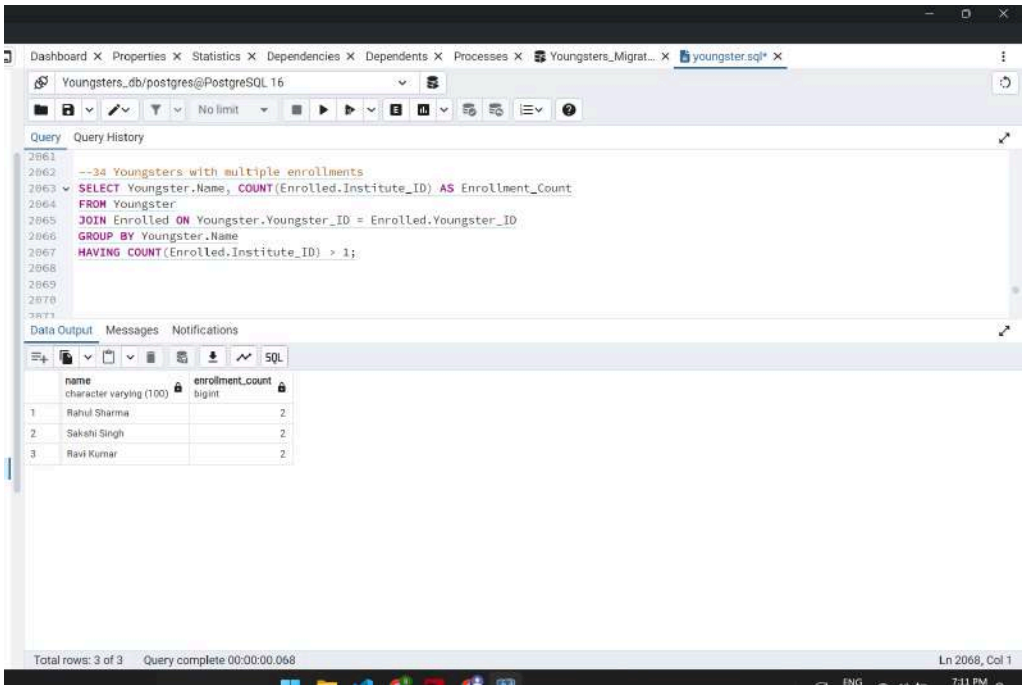
```
SELECT EXTRACT(YEAR FROM Migration_Date) AS
Migration_Year, COUNT(Migration_ID) AS Total_Migrations
FROM Migration_Event
GROUP BY Migration_Year
ORDER BY Migration_Year;
```



Number of tuples: 11

34) Youngsters with multiple enrollments

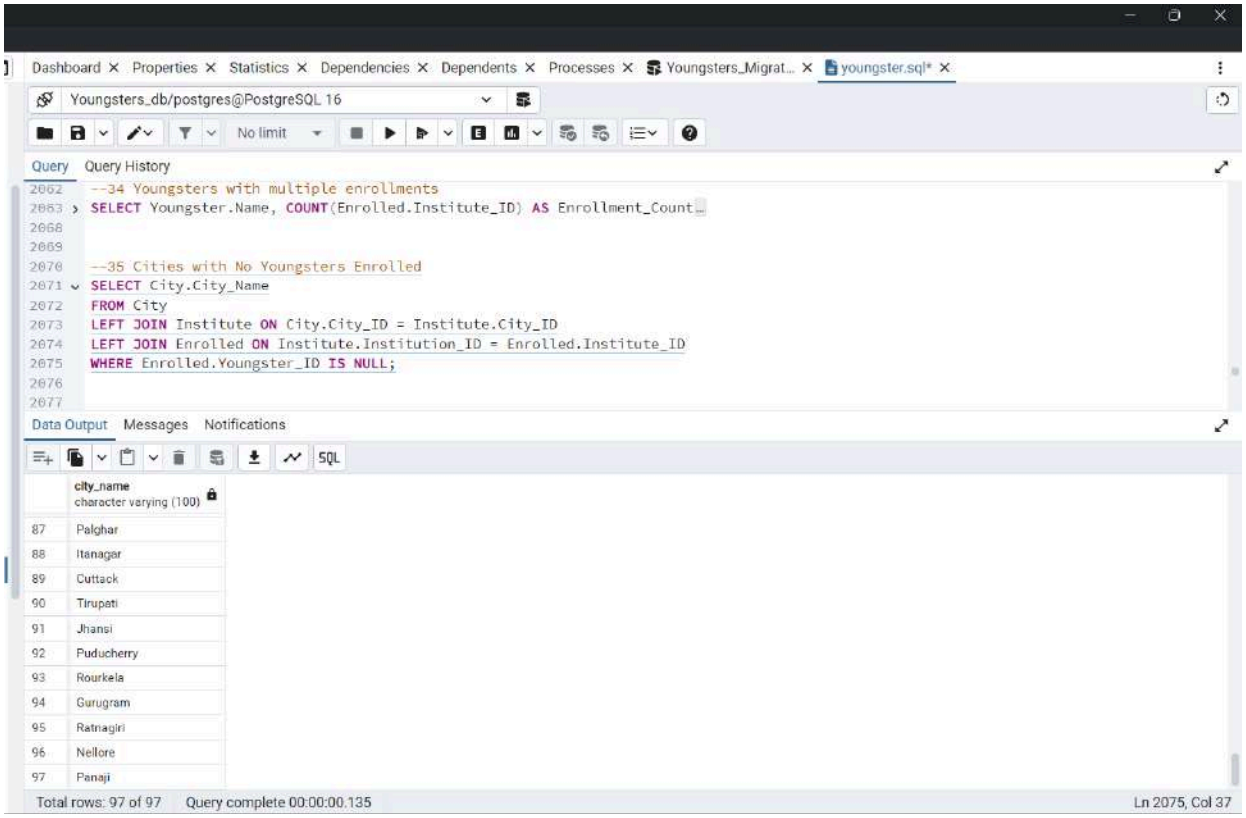
```
SELECT Youngster.Name, COUNT(Enrolled.Institute_ID) AS
Enrollment_Count
FROM Youngster
JOIN Enrolled ON Youngster.Youngster_ID =
Enrolled.Youngster_ID
GROUP BY Youngster.Name
HAVING COUNT(Enrolled.Institute_ID) > 1;
```



Number of tuples: 3

35) Cities with No Youngsters Enrolled

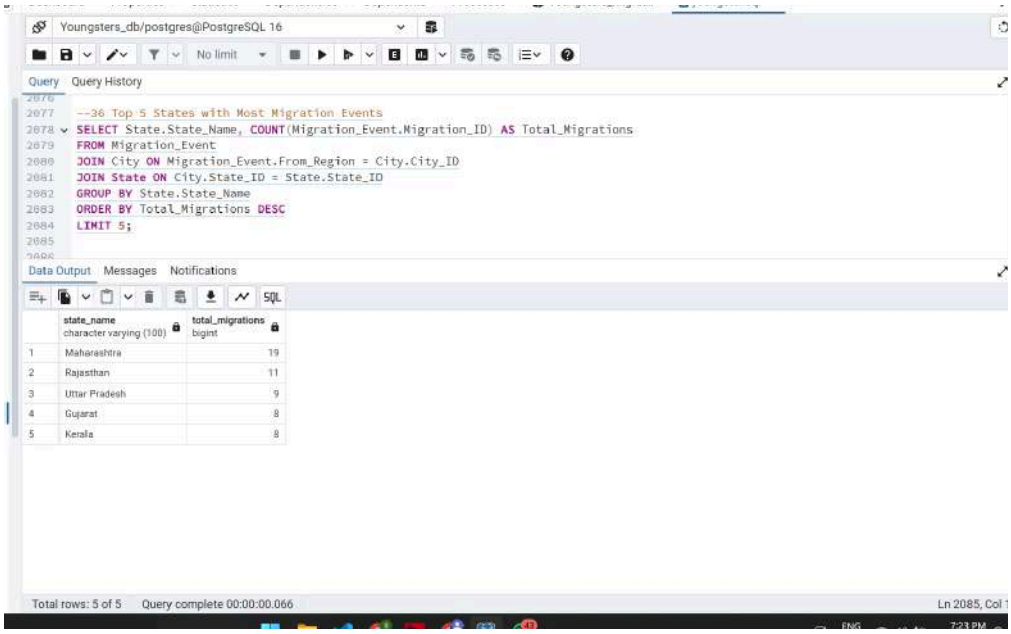
```
SELECT City.City_Name
FROM City
LEFT JOIN Institute ON City.City_ID = Institute.City_ID
LEFT JOIN Enrolled ON Institute.Institution_ID =
Enrolled.Institute_ID
WHERE Enrolled.Youngster_ID IS NULL;
```



Number of tuples: 97

36) Top 5 States with Most Migration Events

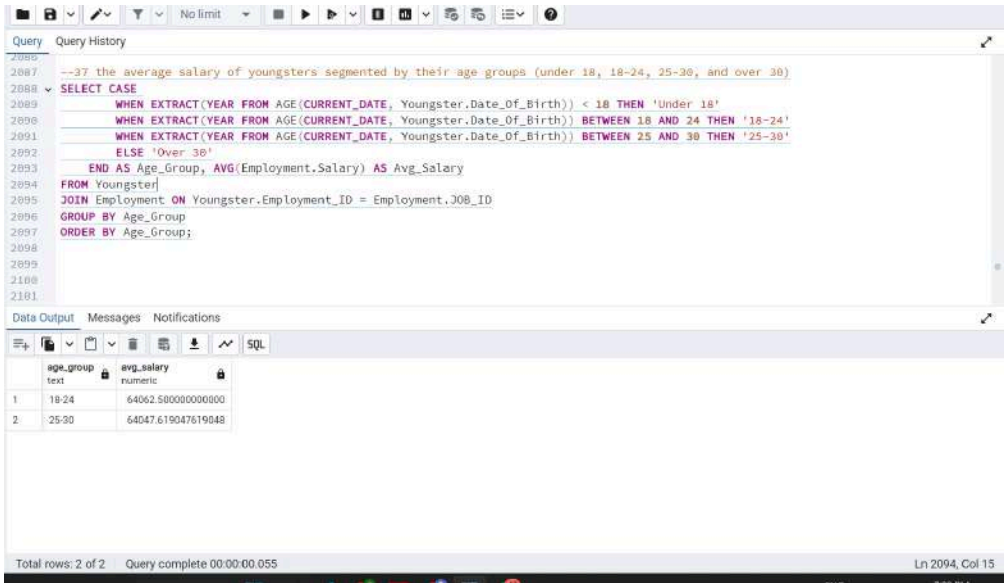
```
SELECT State.State_Name,
COUNT(Migration_Event.Migration_ID) AS Total_Migrations
FROM Migration_Event
JOIN City ON Migration_Event.From_Region = City.City_ID
JOIN State ON City.State_ID = State.State_ID
GROUP BY State.State_Name
ORDER BY Total_Migrations DESC
LIMIT 5;
```



Number of tuples: 5

37) the average salary of youngsters segmented by their age groups (under 18, 18-24, 25-30, and over 30)

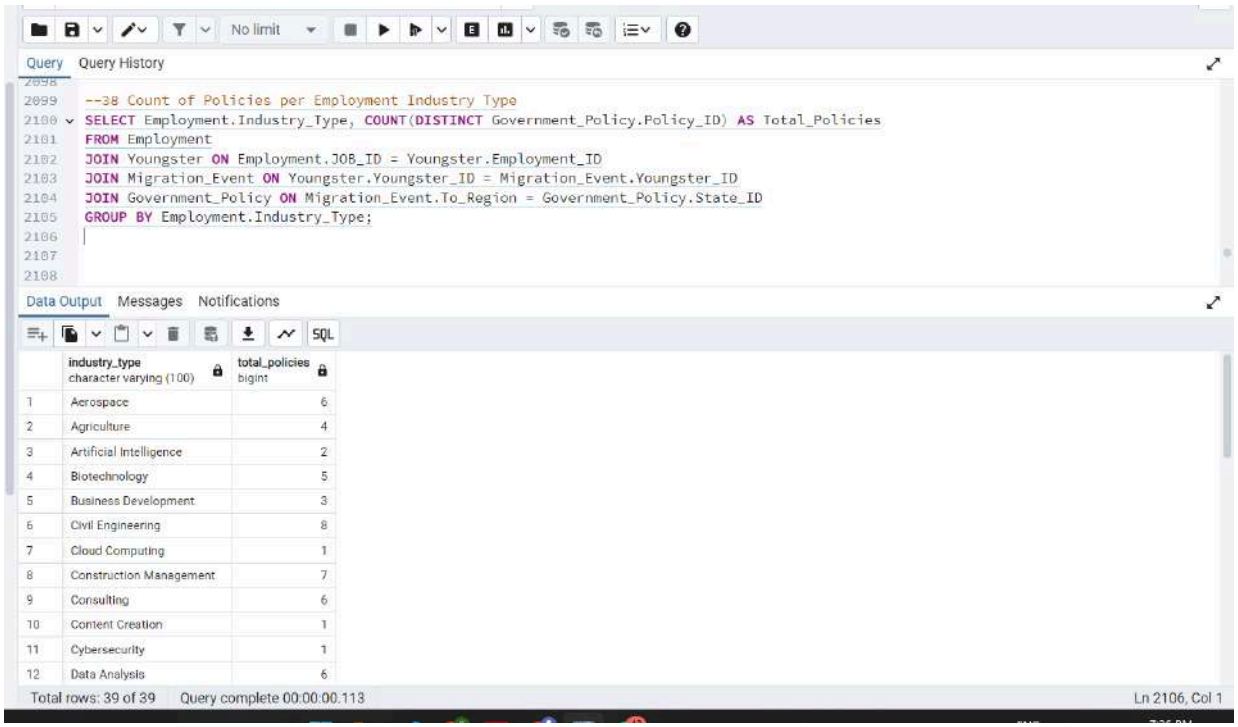
```
SELECT CASE
        WHEN EXTRACT(YEAR FROM AGE(CURRENT_DATE, Youngster.Date_Of_Birth)) < 18 THEN 'Under 18'
        WHEN EXTRACT(YEAR FROM AGE(CURRENT_DATE, Youngster.Date_Of_Birth)) BETWEEN 18 AND 24 THEN '18-24'
        WHEN EXTRACT(YEAR FROM AGE(CURRENT_DATE, Youngster.Date_Of_Birth)) BETWEEN 25 AND 30 THEN '25-30'
        ELSE 'Over 30'
    END AS Age_Group, AVG(Employment.Salary) AS Avg_Salary
FROM Youngster
JOIN Employment ON Youngster.Employment_ID = Employment.JOB_ID
GROUP BY Age_Group
ORDER BY Age_Group;
```



Number of tuples: 2

38) Count of Policies per Employment Industry Type

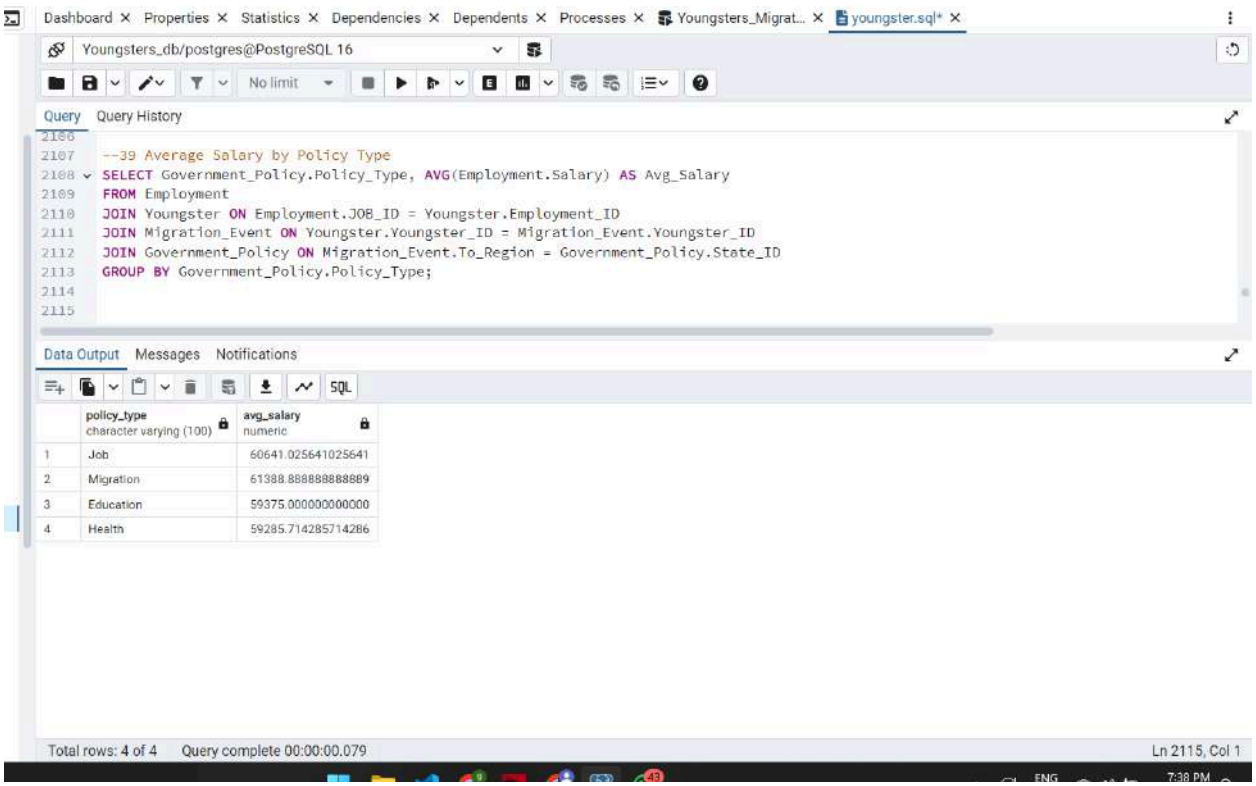
```
SELECT Employment.Industry_Type, COUNT(DISTINCT
Government_Policy.Policy_ID) AS Total_Policies
FROM Employment
JOIN Youngster ON Employment.JOB_ID = Youngster.Employment_ID
JOIN Migration_Event ON Youngster.Youngster_ID =
Migration_Event.Youngster_ID
JOIN Government_Policy ON Migration_Event.To_Region =
Government_Policy.State_ID
GROUP BY Employment.Industry_Type;
```



Number of tuples: 39

39) Average Salary by Policy Type

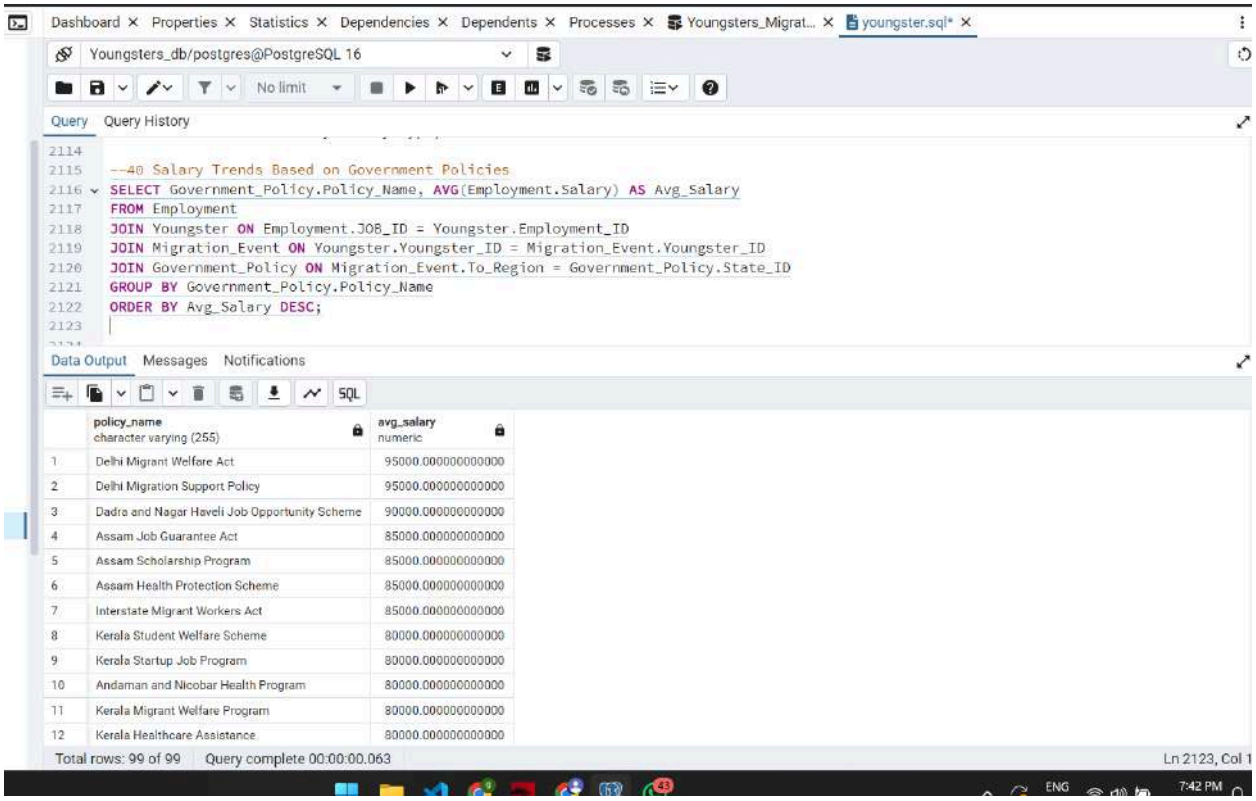
```
SELECT Government_Policy.Policy_Type, AVG(Employment.Salary)
AS Avg_Salary
FROM Employment
JOIN Youngster ON Employment.JOB_ID = Youngster.Employment_ID
JOIN Migration_Event ON Youngster.Youngster_ID =
Migration_Event.Youngster_ID
JOIN Government_Policy ON Migration_Event.To_Region =
Government_Policy.State_ID
GROUP BY Government_Policy.Policy_Type;
```



Number of tuples: 4

40) Salary Trends Based on Government Policies

```
SELECT Government_Policy.Policy_Name, AVG(Employment.Salary)
AS Avg_Salary
FROM Employment
JOIN Youngster ON Employment.JOB_ID = Youngster.Employment_ID
JOIN Migration_Event ON Youngster.Youngster_ID =
Migration_Event.Youngster_ID
JOIN Government_Policy ON Migration_Event.To_Region =
Government_Policy.State_ID
GROUP BY Government_Policy.Policy_Name
ORDER BY Avg_Salary DESC;
```



Number of tuples: 99

Chapter 5: Interface Implementation

5.1 Setup JDBC and Basic GUI

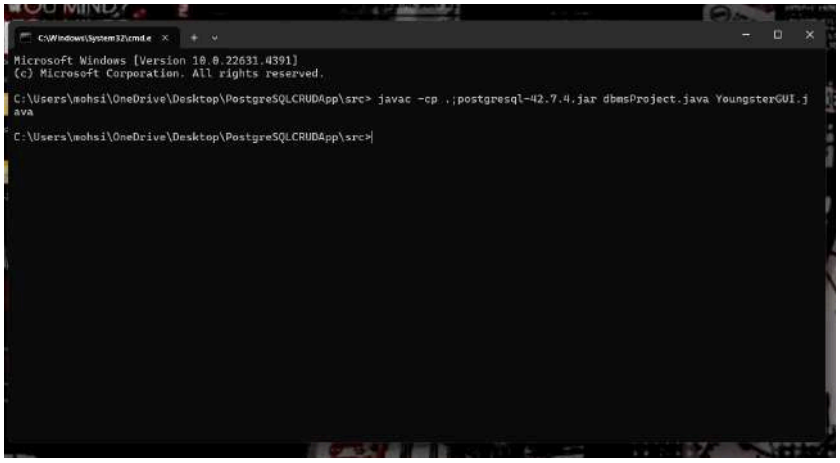
Setup Steps for JDK, postgres, and JDBC Driver

1) Ensure JDK and PostgreSQL are Installed: You need Java Development Kit (JDK) and PostgreSQL installed.
2) Download JDBC Driver: Download the PostgreSQL JDBC driver (postgresql-42.7.4.jar) from https://jdbc.postgresql.org/download/.

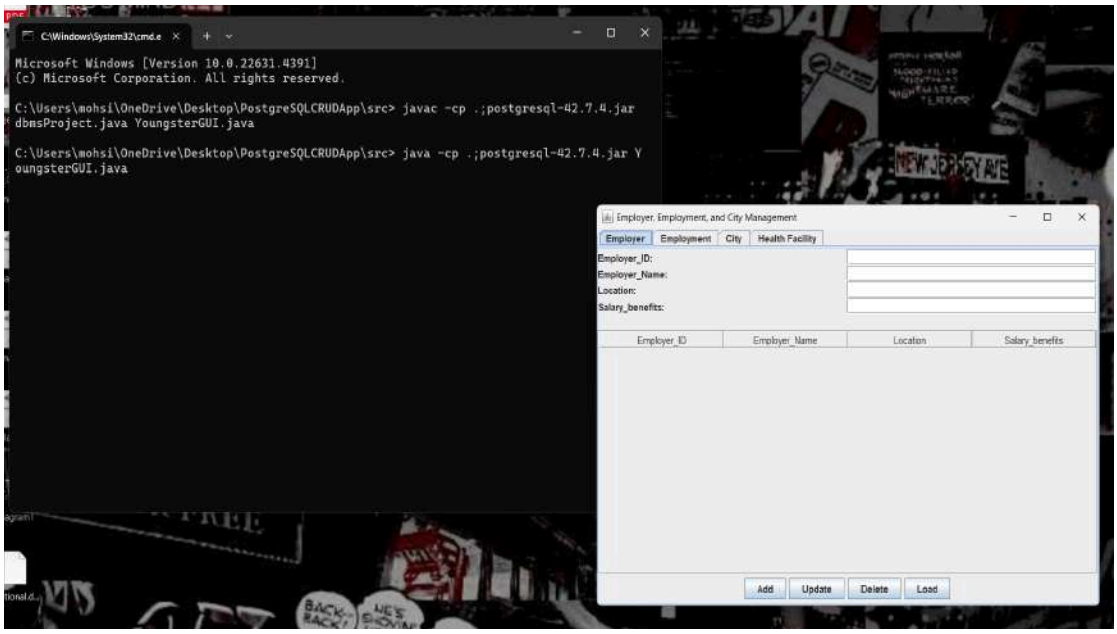
Steps to create the GUI project folder

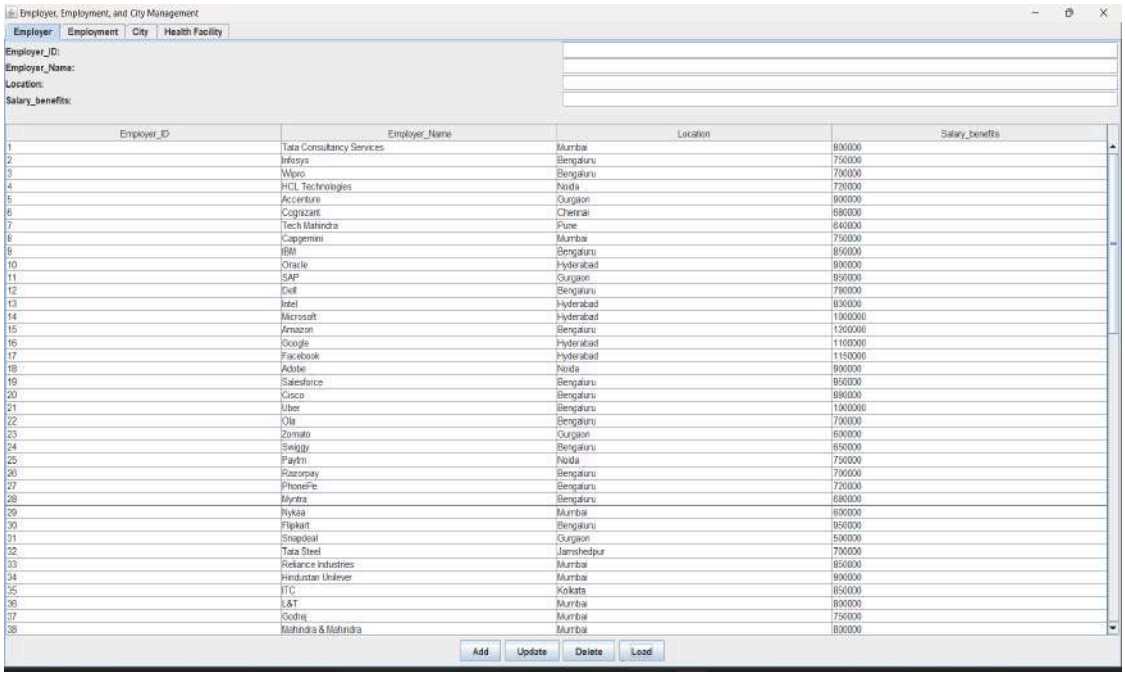
1) Create a New Project Directory:
   • Create a directory for your project, e.g., PostgreSQLCRUDApp.
2) Create Subdirectory for Your Code:
   • Inside your project folder, create a src folder for your Java code.
3) Place the JDBC Driver:
   • Put the postgresql-42.7.4.jar file inside your project folder (src).

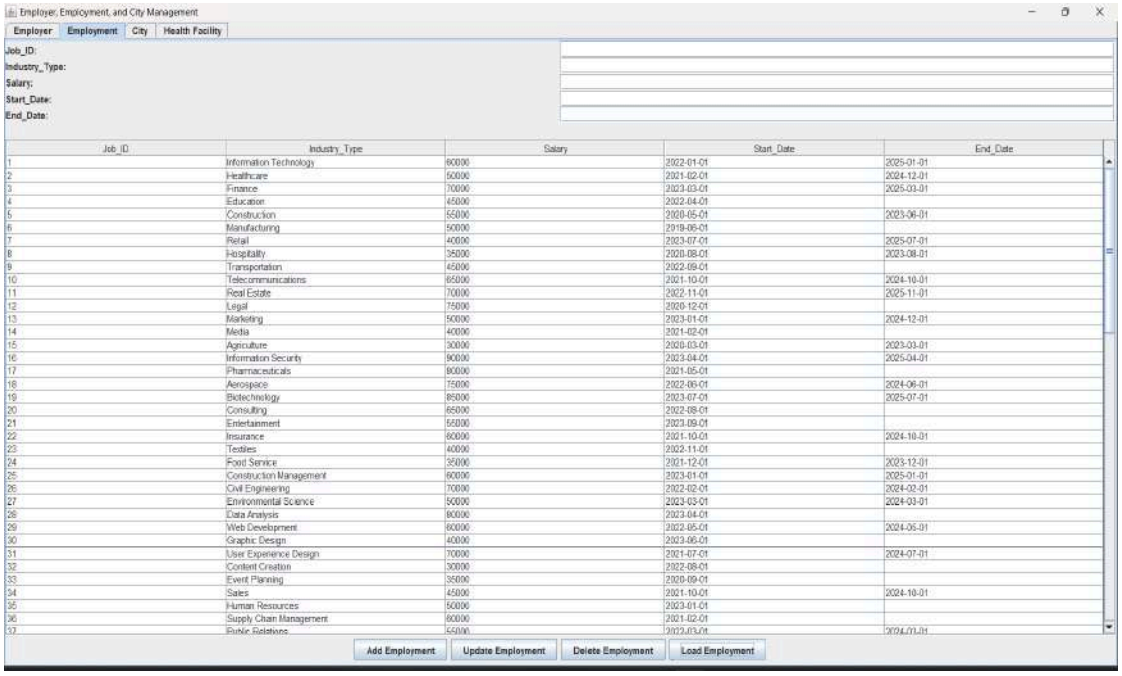
Compilation Process

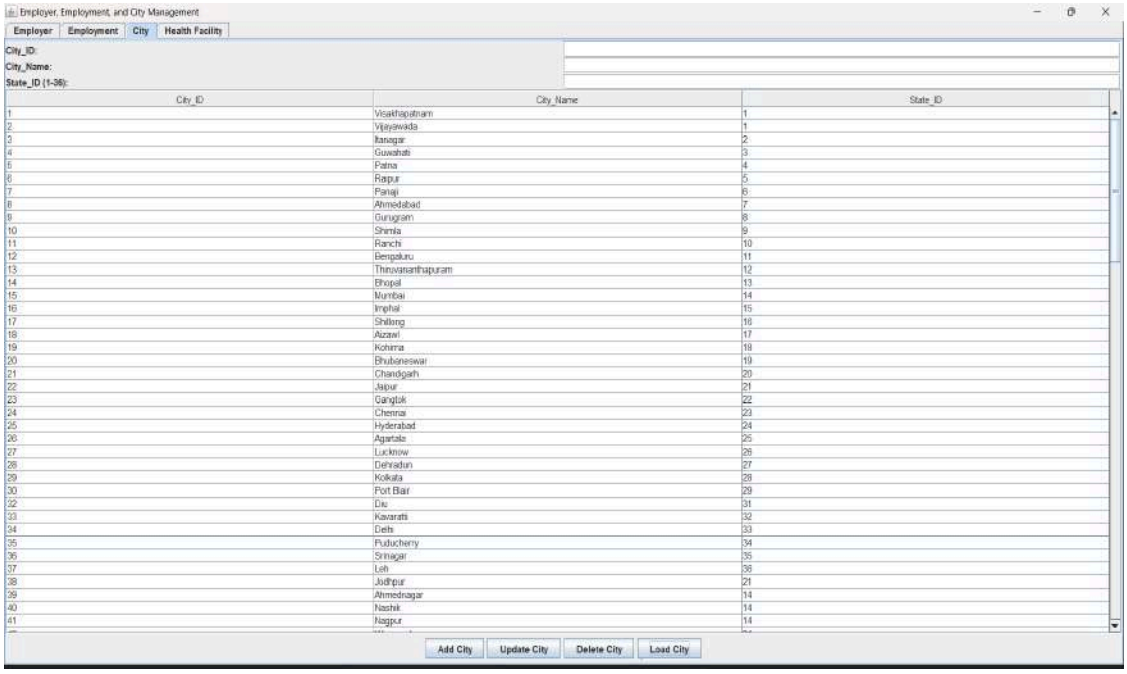


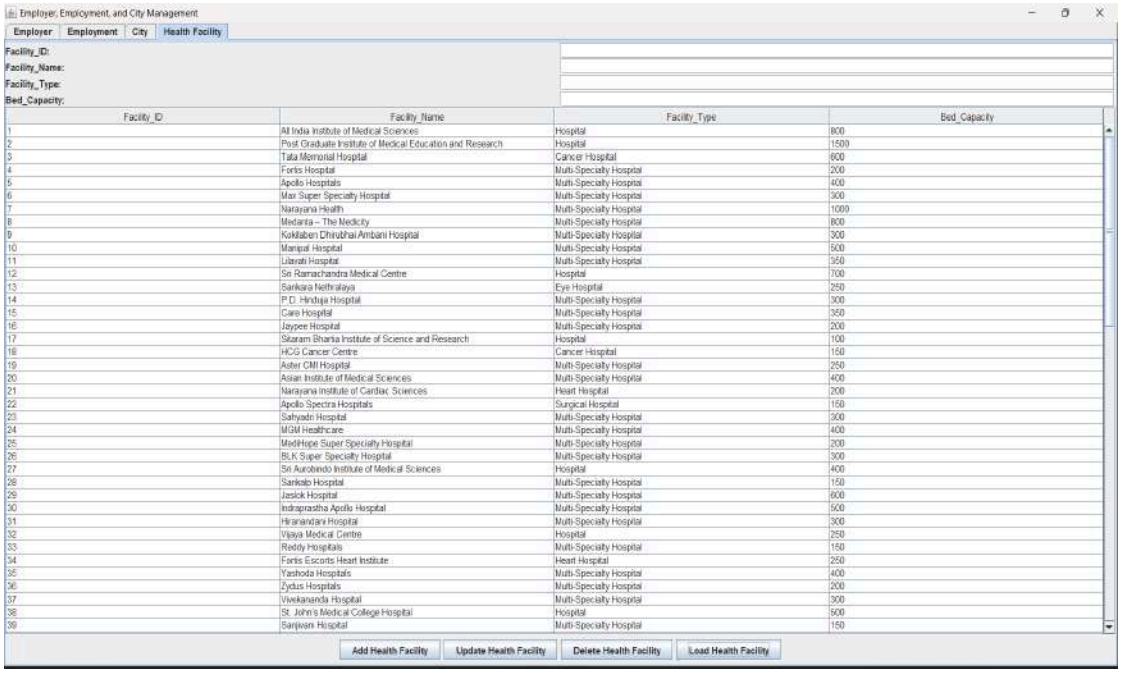
Running the GUI

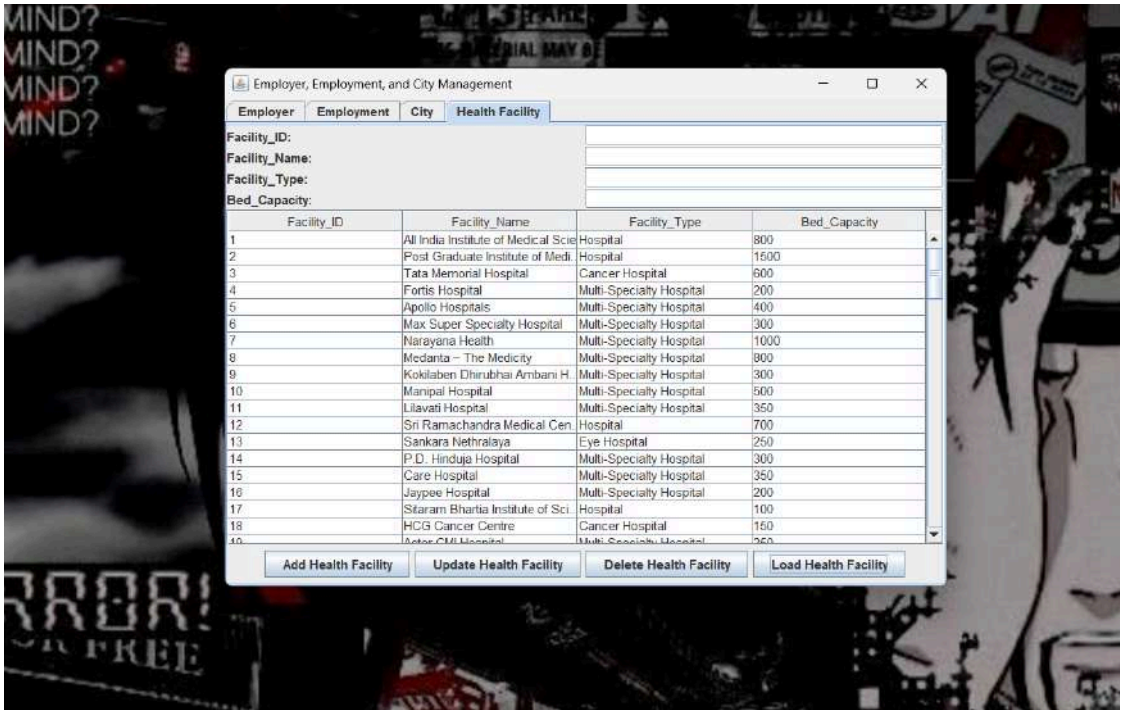





Employer, Employment, and City Management
Employer
Employment
City
Health Facility
Job_ID:
Industry_Type:
Salary:
Start_Date:
End_Date:
Job_ID | Industry_Type | Salary | Start_Date | End_Date
1 | Information Technology | 60000 | 2022-01-01 | 2025-01-01
2 | Healthcare | 50000 | 2021-02-01 | 2024-12-01
3 | Finance | 70000 | 2023-03-01 | 2025-03-01
4 | Education | 45000 | 2022-04-01 |
5 | Construction | 55000 | 2020-05-01 | 2023-06-01
6 | Manufacturing | 50000 | 2019-06-01 |
7 | Retail | 40000 | 2023-07-01 | 2025-07-01
8 | Hospitality | 35000 | 2020-08-01 | 2023-08-01
9 | Transportation | 45000 | 2022-09-01 |
10 | Telecommunications | 65000 | 2021-10-01 | 2024-10-01
11 | Real Estate | 70000 | 2022-11-01 | 2025-11-01
12 | Legal | 75000 | 2020-12-01 |
13 | Marketing | 50000 | 2023-01-01 | 2024-12-01
14 | Media | 40000 | 2021-02-01 |
15 | Agriculture | 30000 | 2020-03-01 | 2023-03-01
16 | Information Security | 90000 | 2023-04-01 | 2025-04-01
17 | Pharmaceuticals | 80000 | 2021-05-01 |
18 | Aerospace | 75000 | 2022-06-01 | 2024-06-01
19 | Biotechnology | 85000 | 2023-07-01 | 2025-07-01
20 | Consulting | 65000 | 2022-08-01 |
21 | Entertainment | 55000 | 2023-09-01 |
22 | Insurance | 60000 | 2021-10-01 | 2024-10-01
23 | Textiles | 40000 | 2022-11-01 |
24 | Food Service | 35000 | 2021-12-01 | 2023-12-01
25 | Construction Management | 80000 | 2023-01-01 | 2025-01-01
26 | Civil Engineering | 70000 | 2022-02-01 | 2024-02-01
27 | Environmental Science | 50000 | 2023-03-01 | 2024-03-01
28 | Data Analysis | 80000 | 2023-04-01 |
29 | Web Development | 60000 | 2022-05-01 | 2024-05-01
30 | Graphic Design | 40000 | 2023-06-01 |
31 | User Experience Design | 70000 | 2021-07-01 | 2024-07-01
32 | Content Creation | 30000 | 2022-08-01 |
33 | Event Planning | 35000 | 2020-09-01 |
34 | Sales | 45000 | 2021-10-01 | 2024-10-01
35 | Human Resources | 50000 | 2023-01-01 |
36 | Supply Chain Management | 60000 | 2021-02-01 |
Add Employment
Update Employment
Delete Employment
Load Employment


Employer, Employment, and City Management
Employer
Employment
City
Health Facility
City_ID:
City_Name:
State_ID (1-36):
City_ID | City_Name | State_ID
1 | Visakhapatnam | 1
2 | Vijayawada | 1
3 | Itanagar | 2
4 | Guwahati | 3
5 | Patna | 4
6 | Raipur | 5
7 | Panaji | 6
8 | Ahmedabad | 7
9 | Gurugram | 8
10 | Shimla | 9
11 | Ranchi | 10
12 | Bengaluru | 11
13 | Thiruvananthapuram | 12
14 | Bhopal | 13
15 | Mumbai | 14
16 | Imphal | 15
17 | Shillong | 16
18 | Aizawl | 17
19 | Kohima | 18
20 | Bhubaneswar | 19
21 | Chandigarh | 20
22 | Jaipur | 21
23 | Gangtok | 22
24 | Chennai | 23
25 | Hyderabad | 24
26 | Agartala | 25
27 | Lucknow | 26
28 | Dehradun | 27
29 | Kolkata | 28
30 | Port Blair | 29
32 | Diu | 31
33 | Kavaratti | 32
34 | Delhi | 33
35 | Puducherry | 34
36 | Srinagar | 35
37 | Leh | 36
38 | Jodhpur | 21
39 | Ahmednagar | 14
40 | Nashik | 14
41 | Nagpur | 14
Add City
Update City
Delete City
Load City

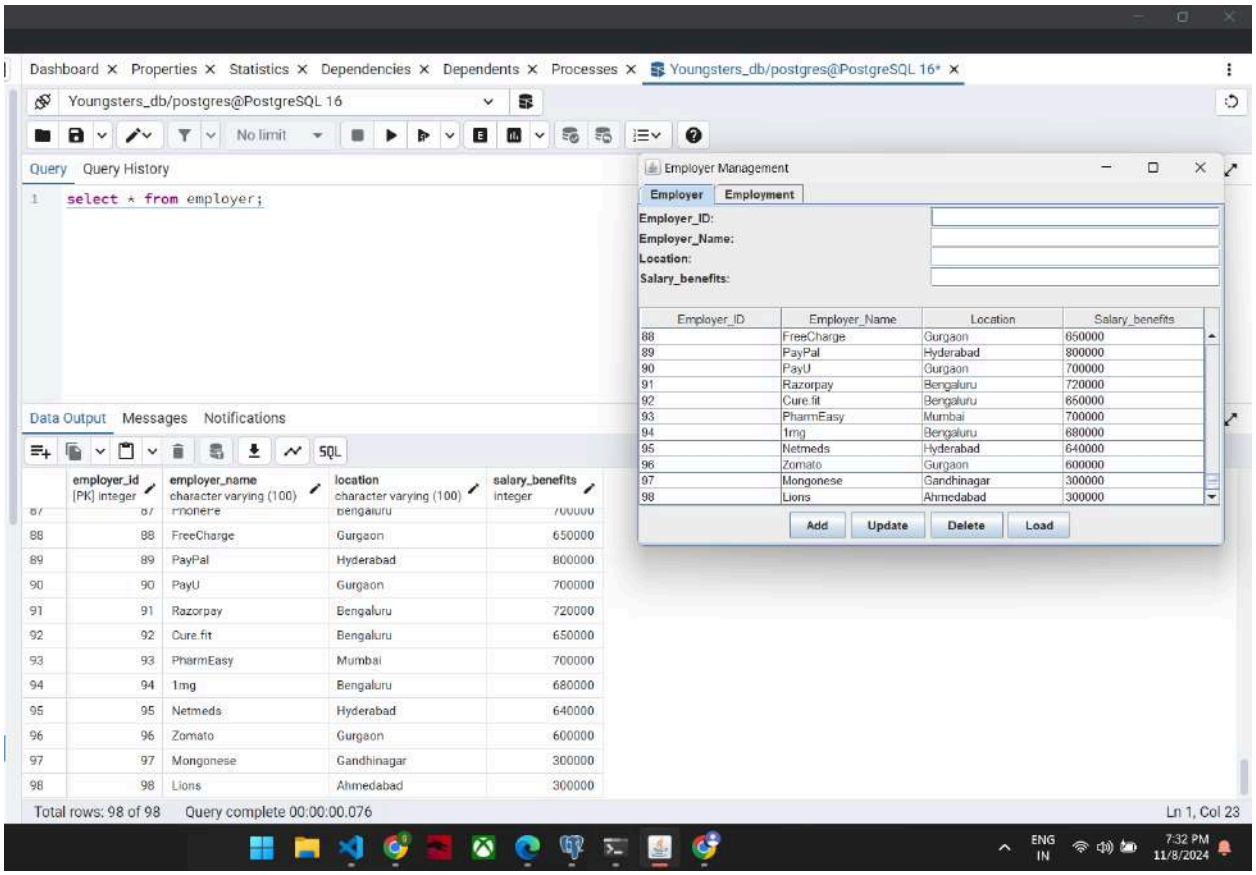

Employer, Employment, and City Management
Employer
Employment
City
Health Facility
Facility_ID:
Facility_Name:
Facility_Type:
Bed_Capacity:
Facility_ID | Facility_Name | Facility_Type | Bed_Capacity
1 | All India Institute of Medical Sciences | Hospital | 800
2 | Post Graduate Institute of Medical Education and Research | Hospital | 1500
3 | Tata Memorial Hospital | Cancer Hospital | 600
4 | Fortis Hospital | Multi-Specialty Hospital | 200
5 | Apollo Hospitals | Multi-Specialty Hospital | 400
6 | Max Super Specialty Hospital | Multi-Specialty Hospital | 300
7 | Narayana Health | Multi-Specialty Hospital | 1000
8 | Medanta – The Medicity | Multi-Specialty Hospital | 800
9 | Kokilaben Dhirubhai Ambani Hospital | Multi-Specialty Hospital | 300
10 | Manipal Hospital | Multi-Specialty Hospital | 500
11 | Lilavati Hospital | Multi-Specialty Hospital | 350
12 | Sri Ramachandra Medical Centre | Hospital | 700
13 | Sankara Nethralaya | Eye Hospital | 250
14 | P.D. Hinduja Hospital | Multi-Specialty Hospital | 300
15 | Care Hospital | Multi-Specialty Hospital | 350
16 | Jaypee Hospital | Multi-Specialty Hospital | 200
17 | Sitaram Bhartia Institute of Science and Research | Hospital | 100
18 | HCG Cancer Centre | Cancer Hospital | 150
19 | Aster CMI Hospital | Multi-Specialty Hospital | 250
20 | Asian Institute of Medical Sciences | Multi-Specialty Hospital | 400
21 | Narayana Institute of Cardiac Sciences | Heart Hospital | 200
22 | Apollo Spectra Hospitals | Surgical Hospital | 150
23 | Sahyadri Hospital | Multi-Specialty Hospital | 300
24 | MGM Healthcare | Multi-Specialty Hospital | 400
25 | MedHope Super Specialty Hospital | Multi-Specialty Hospital | 200
26 | BLK Super Specialty Hospital | Multi-Specialty Hospital | 300
27 | Sri Aurobindo Institute of Medical Sciences | Hospital | 400
28 | Sankalp Hospital | Multi-Specialty Hospital | 150
29 | Jaslok Hospital | Multi-Specialty Hospital | 600
30 | Indraprastha Apollo Hospital | Multi-Specialty Hospital | 500
31 | Hiranandani Hospital | Multi-Specialty Hospital | 300
32 | Vijaya Medical Centre | Hospital | 250
33 | Reddy Hospitals | Multi-Specialty Hospital | 150
34 | Fortis Escorts Heart Institute | Heart Hospital | 250
35 | Yashoda Hospitals | Multi-Specialty Hospital | 400
36 | Zydus Hospitals | Multi-Specialty Hospital | 200
37 | Vivekananda Hospital | Multi-Specialty Hospital | 300
38 | St. John's Medical College Hospital | Hospital | 500
39 | Sanjivani Hospital | Multi-Specialty Hospital | 150
Add Health Facility
Update Health Facility
Delete Health Facility
Load Health Facility


Employer, Employment, and City Management
Employer
Employment
City
Health Facility
Facility_ID:
Facility_Name:
Facility_Type:
Bed_Capacity:
Facility_ID | Facility_Name | Facility_Type | Bed_Capacity
1 | All India Institute of Medical Scie | Hospital | 800
2 | Post Graduate Institute of Medi | Hospital | 1500
3 | Tata Memorial Hospital | Cancer Hospital | 600
4 | Fortis Hospital | Multi-Specialty Hospital | 200
5 | Apollo Hospitals | Multi-Specialty Hospital | 400
6 | Max Super Specialty Hospital | Multi-Specialty Hospital | 300
7 | Narayana Health | Multi-Specialty Hospital | 1000
8 | Medanta – The Medicity | Multi-Specialty Hospital | 800
9 | Kokilaben Dhirubhai Ambani H | Multi-Specialty Hospital | 300
10 | Manipal Hospital | Multi-Specialty Hospital | 500
11 | Lilavati Hospital | Multi-Specialty Hospital | 350
12 | Sri Ramachandra Medical Cen | Hospital | 700
13 | Sankara Nethralaya | Eye Hospital | 250
14 | P.D. Hinduja Hospital | Multi-Specialty Hospital | 300
15 | Care Hospital | Multi-Specialty Hospital | 350
16 | Jaypee Hospital | Multi-Specialty Hospital | 200
17 | Sitaram Bhartia Institute of Sci | Hospital | 100
18 | HCG Cancer Centre | Cancer Hospital | 150
Add Health Facility
Update Health Facility
Delete Health Facility
Load Health Facility

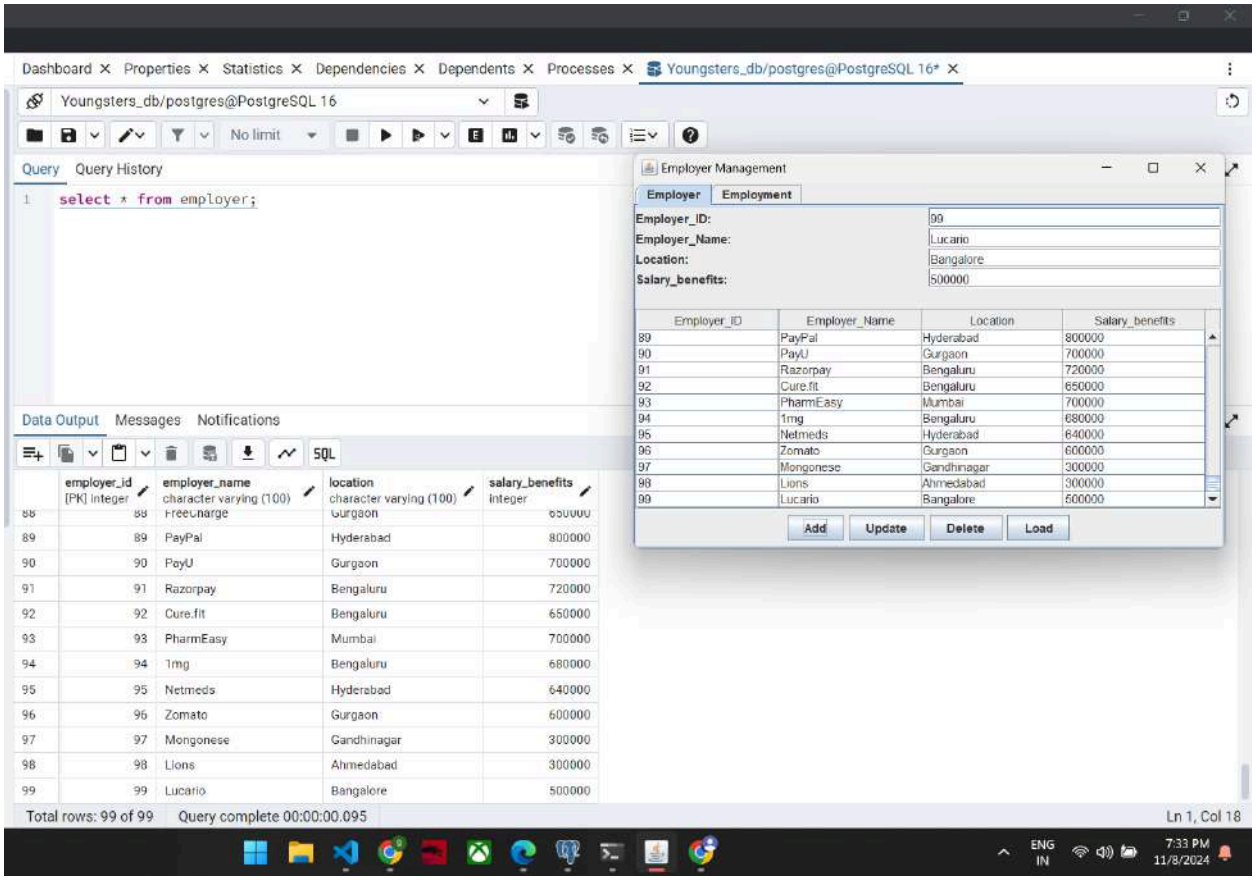
5.2 Perform CRUD operations using GUI

1) Add Employers:

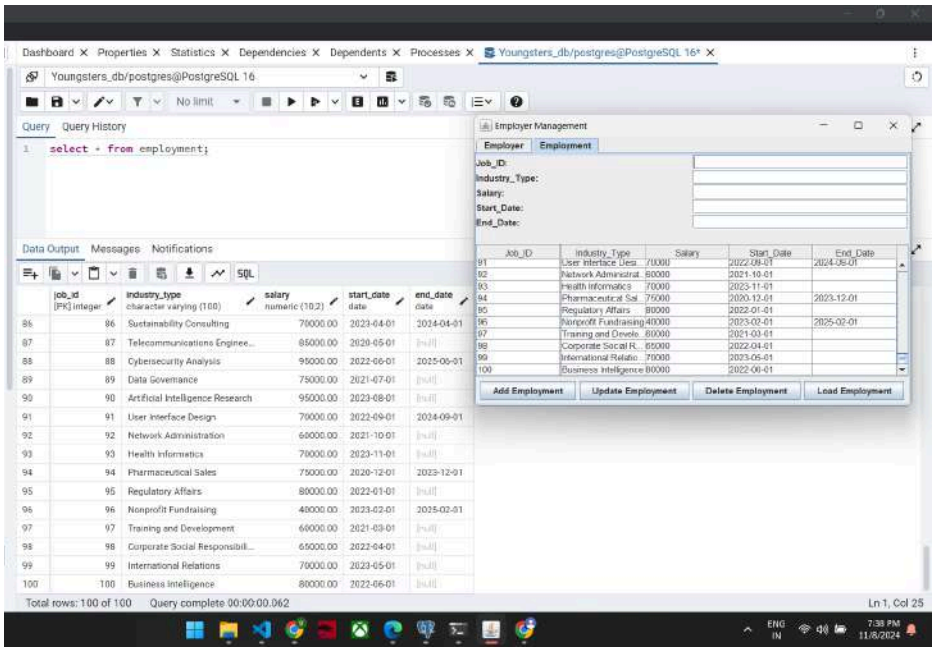
Before adding Employer to the table of employers



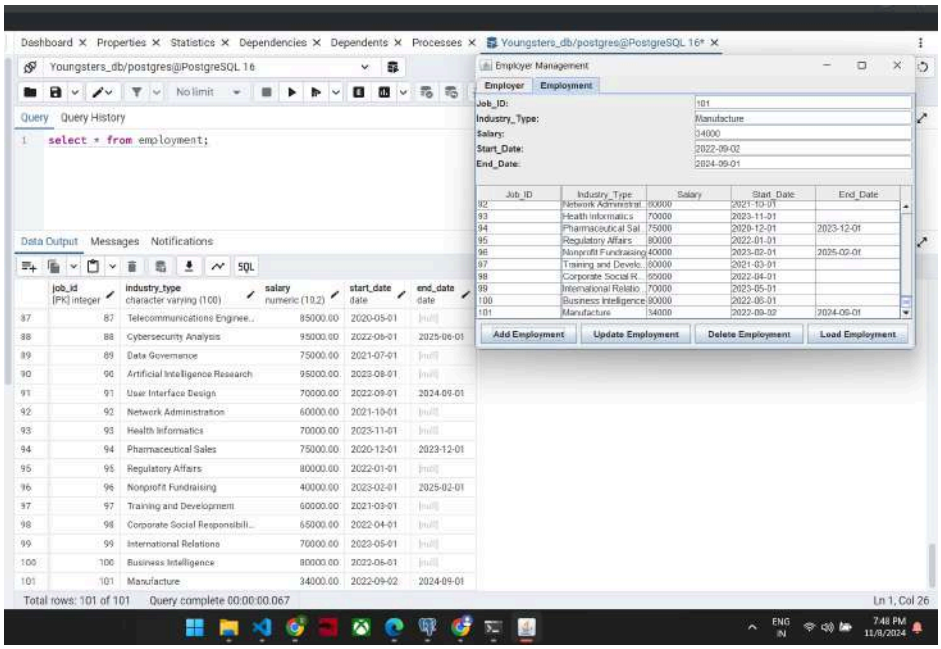
After adding the Employer to Employer table



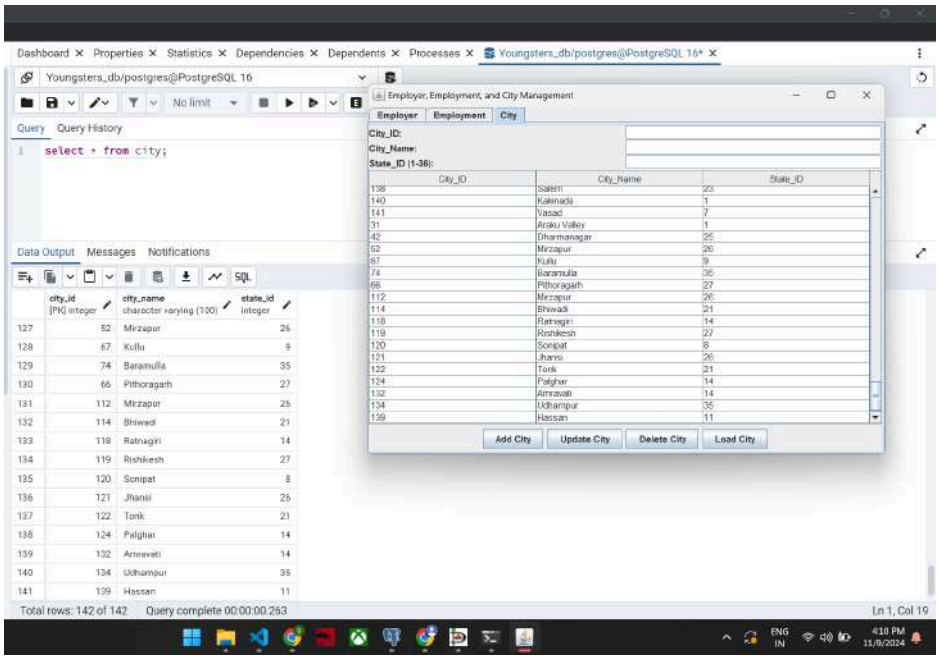
Before adding Employment to the table of employment



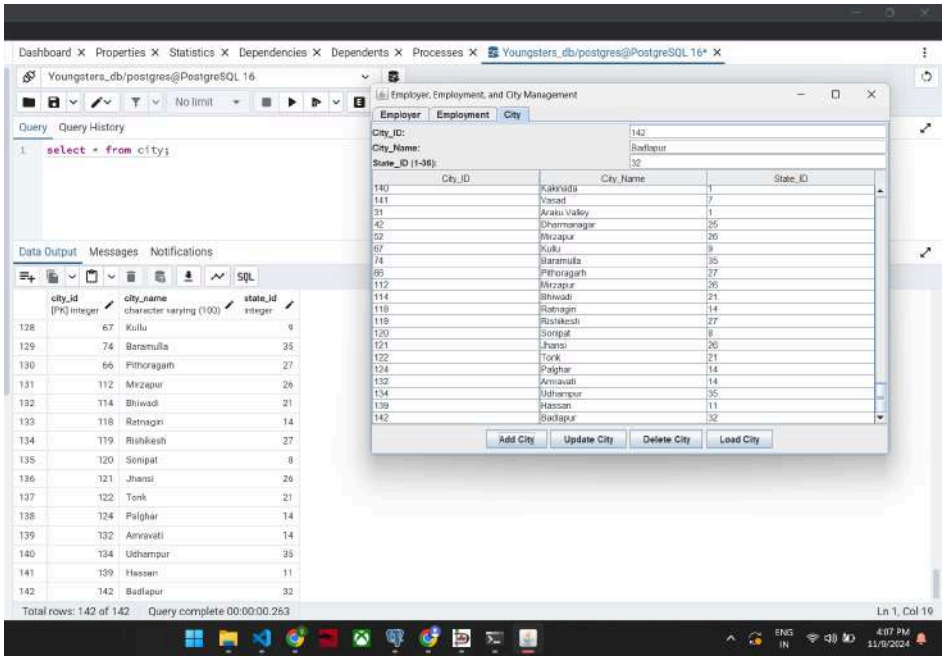
After adding the Employment to the Employment table



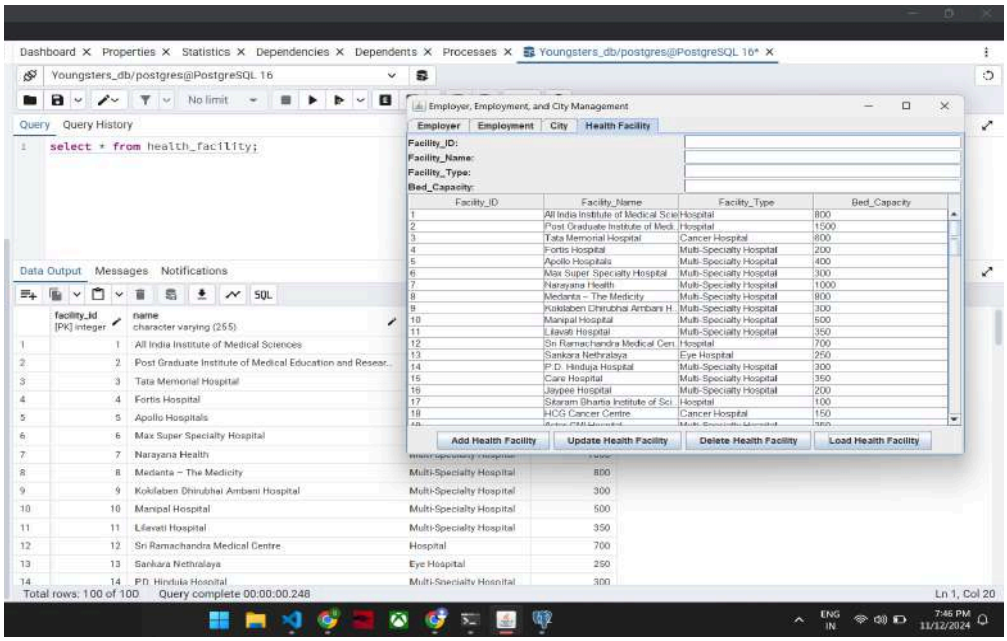
Before adding the city to city table



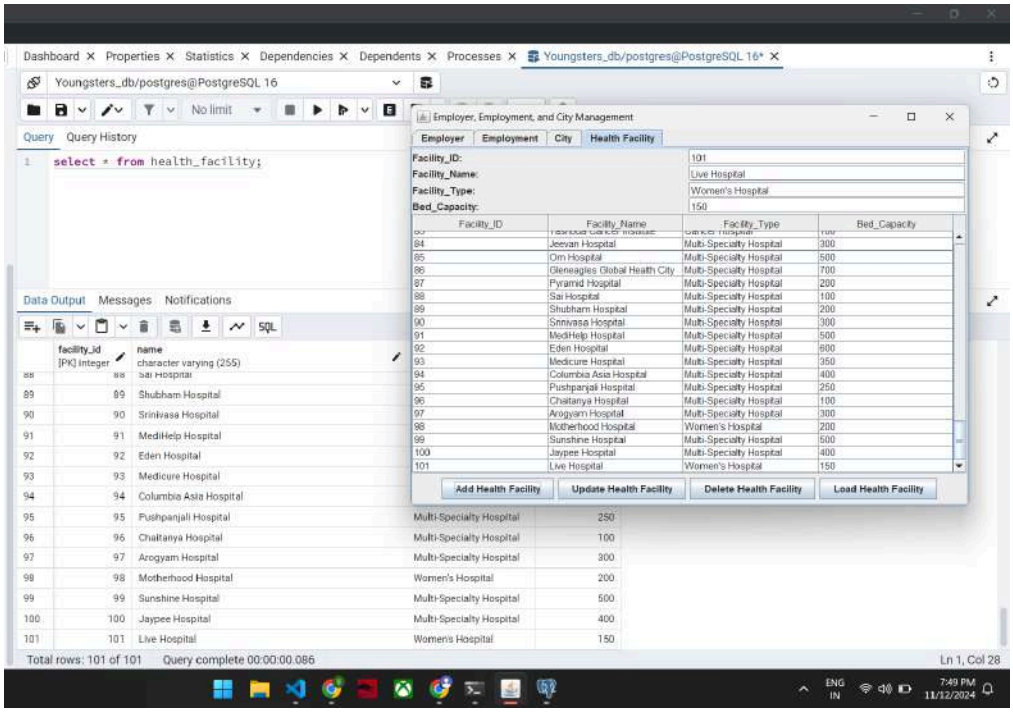
After adding the city in City Table



Before adding the health facility in health_facility table

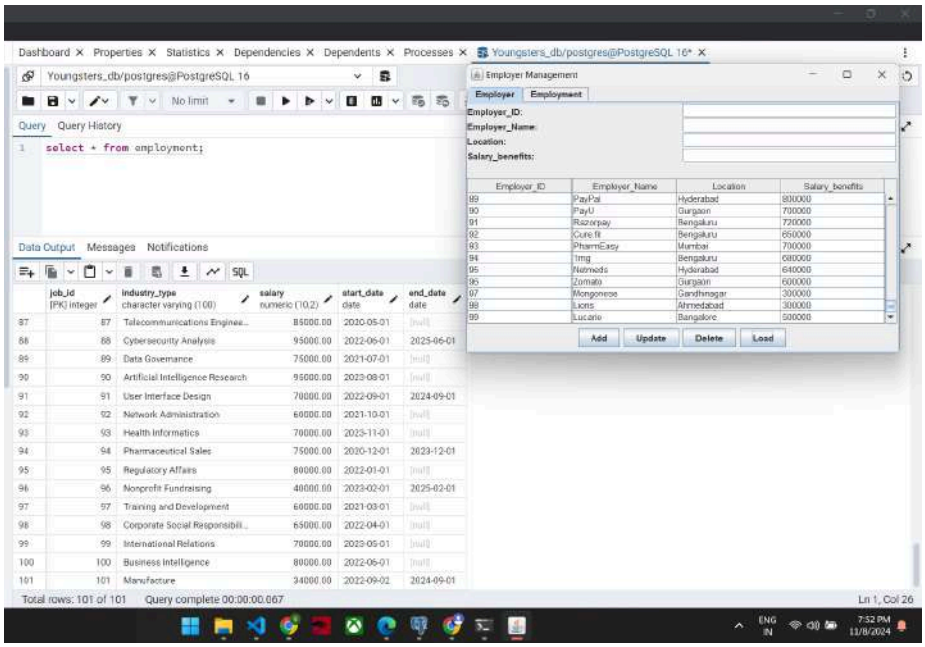


After adding the health facility to the health_facility table

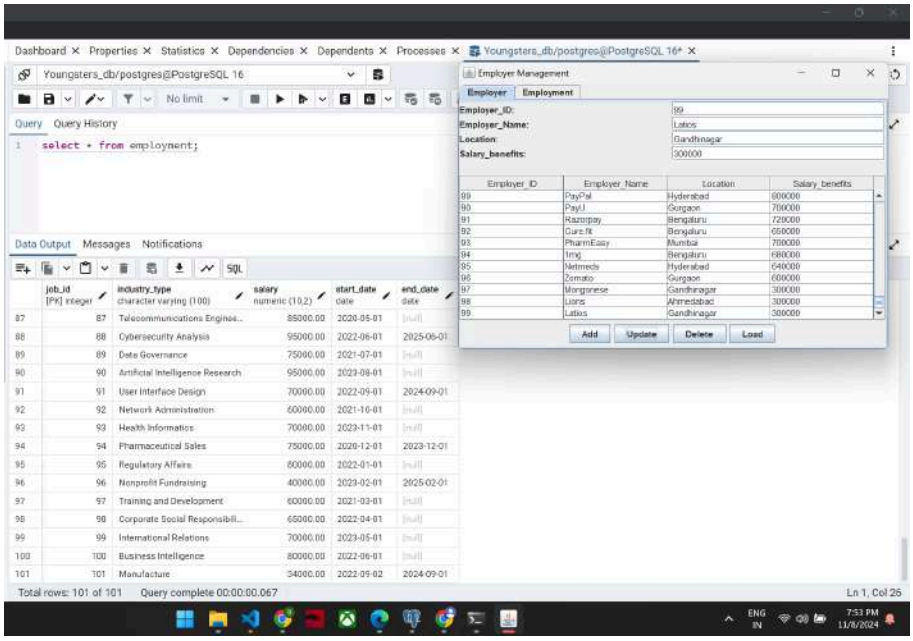


2) Update Students:

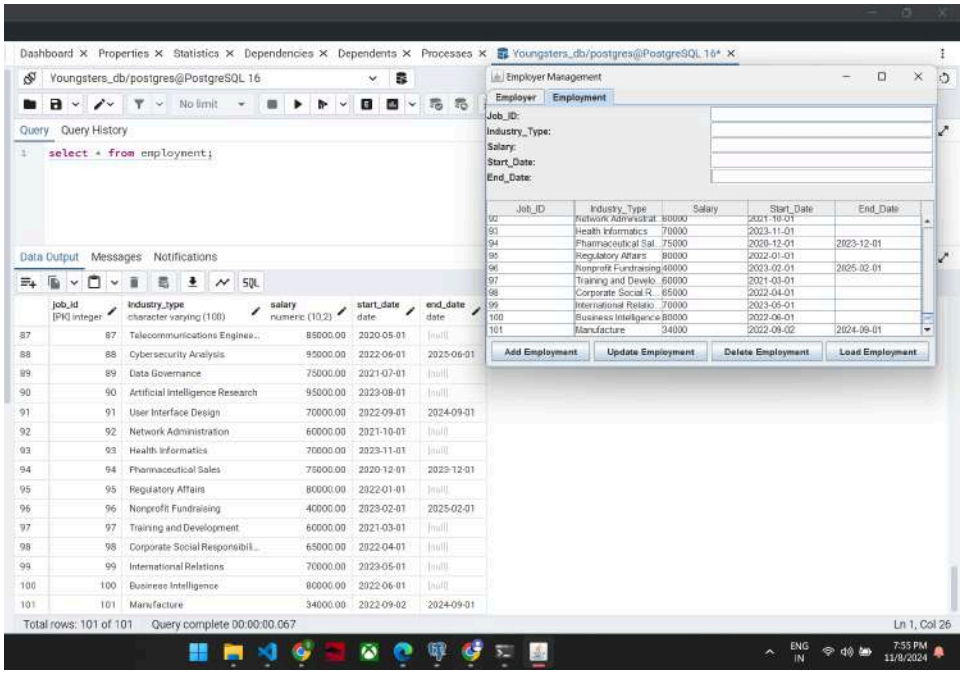
Before updating Employer to the table of employers



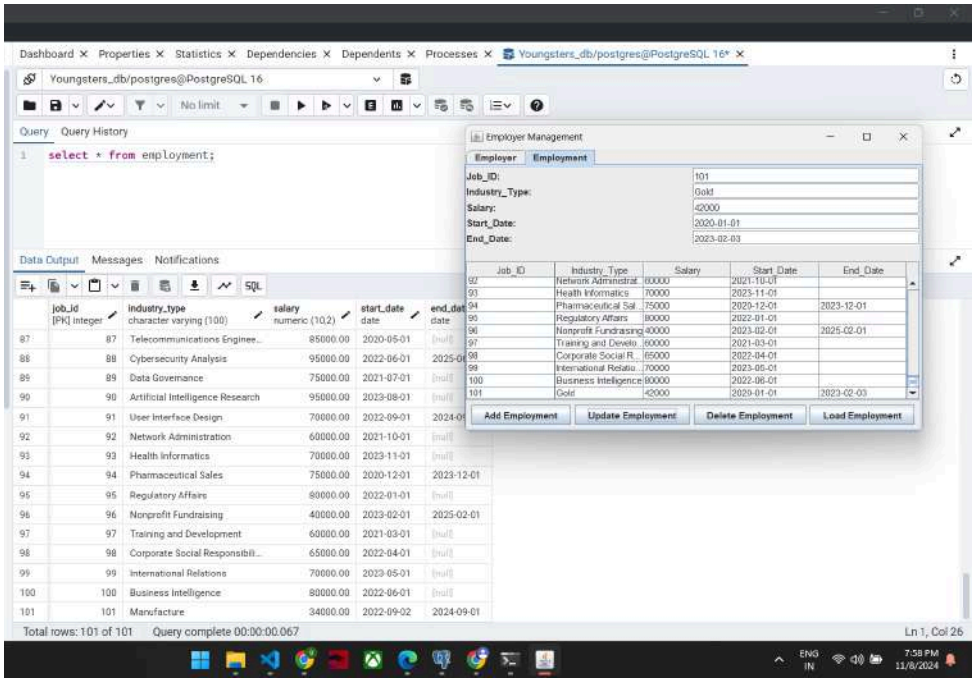
After updating Employer to the table of employers



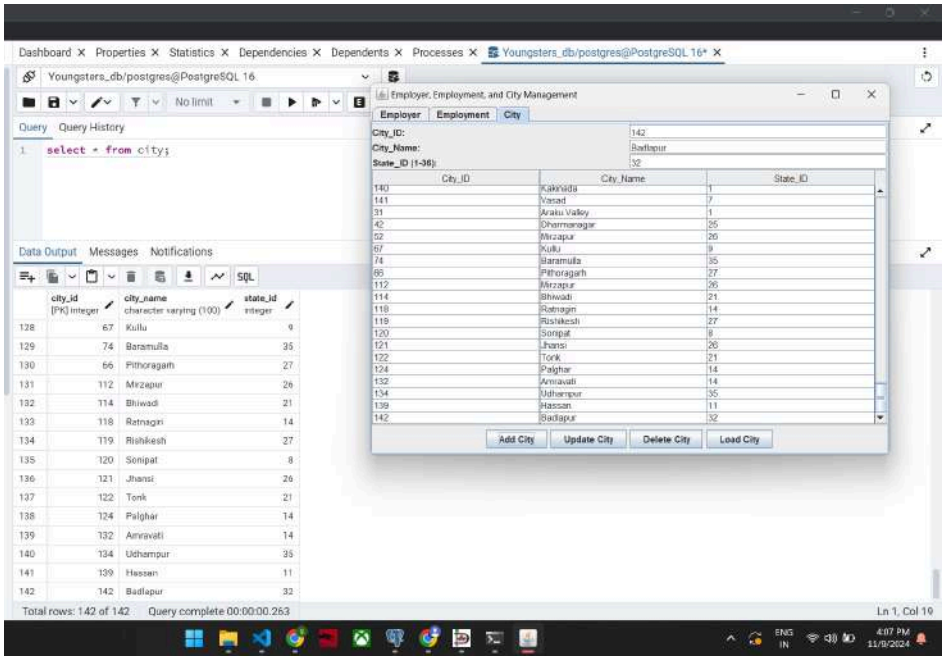
Before updating Employment to the table of employment



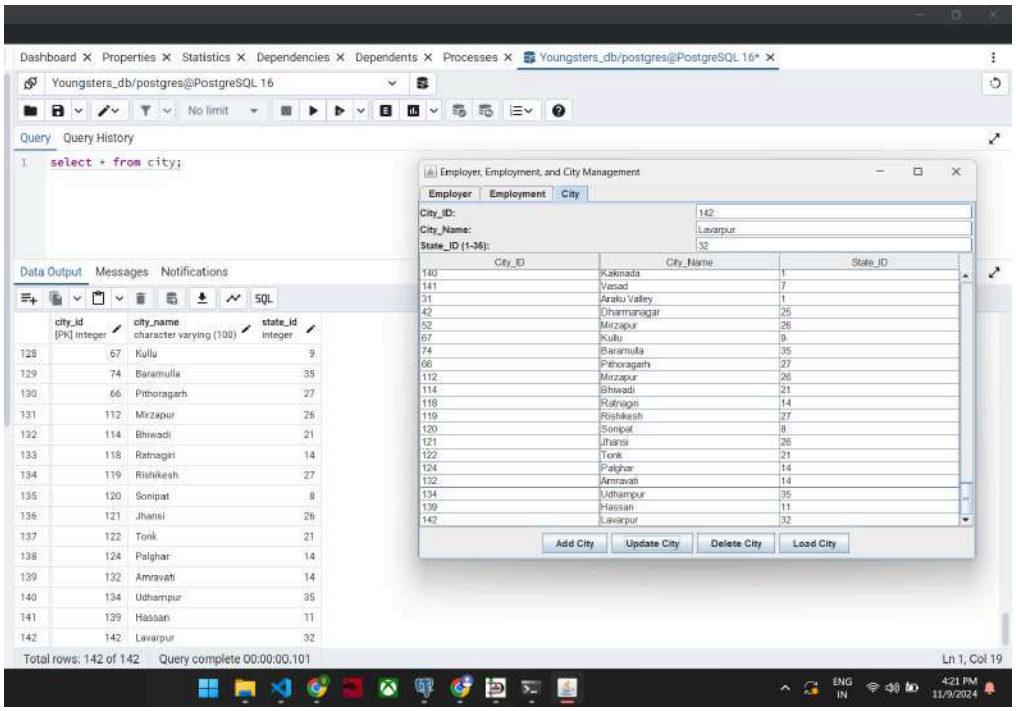
After updating Employment to the table of employment



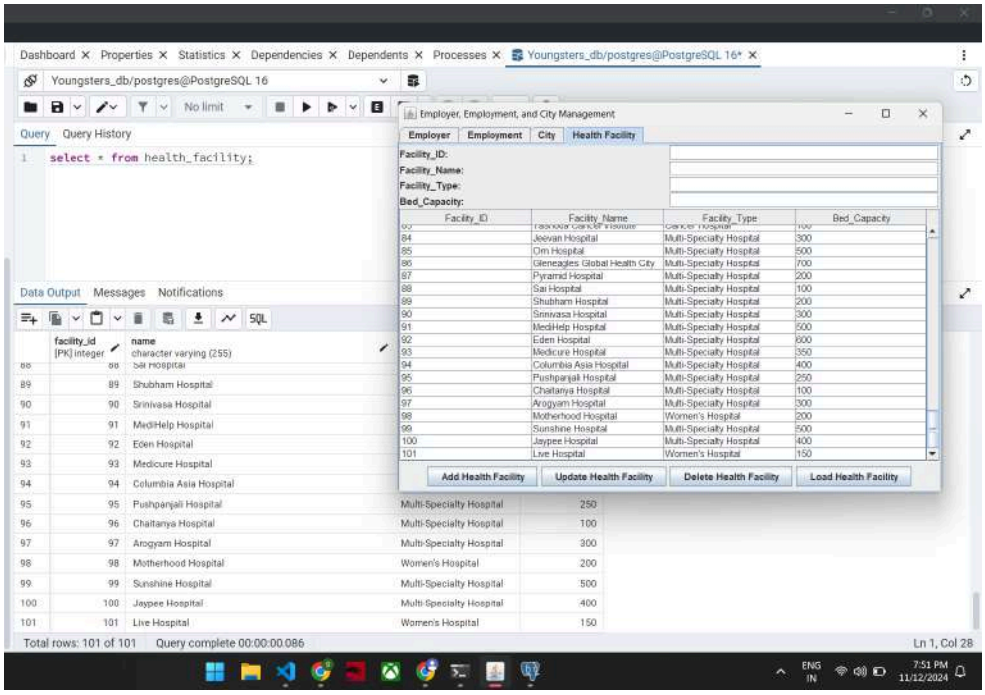
Before updating the city in city



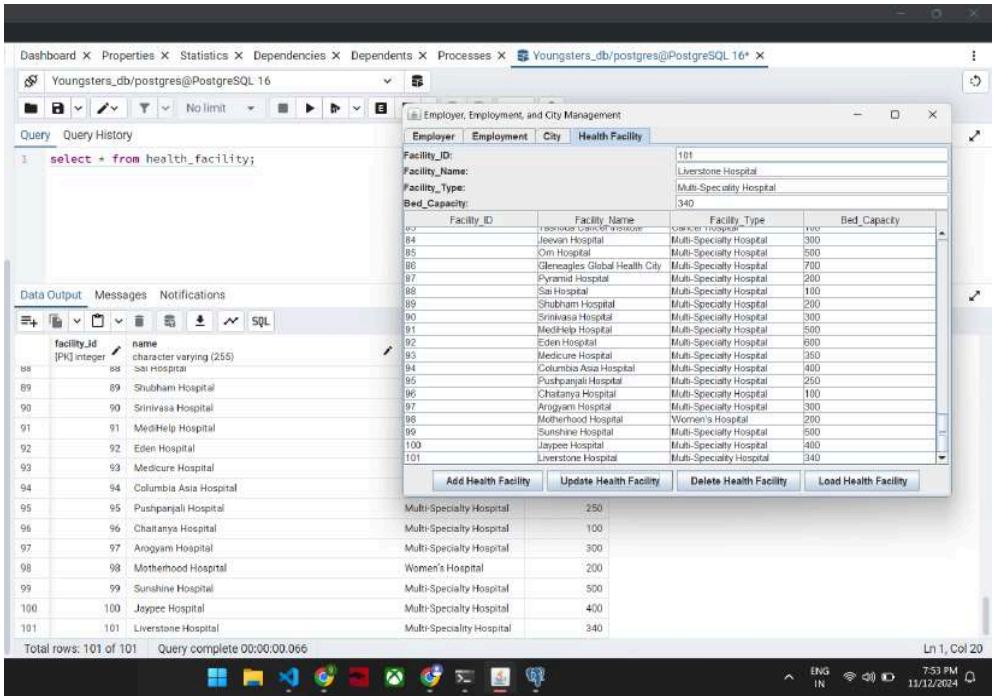
After updating the city in city



Before updating the health_facility of the health_facility table

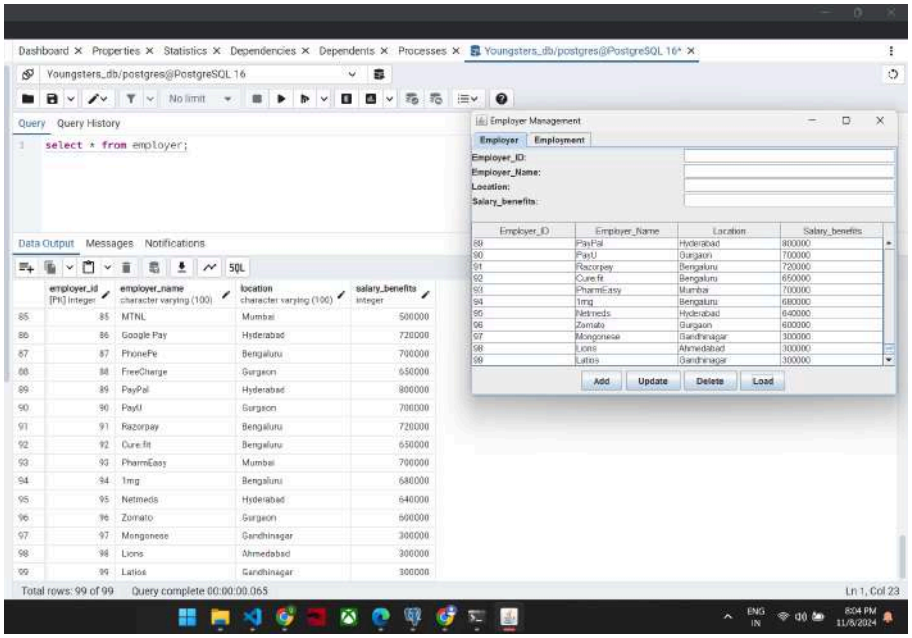


After updating the health facility of the health_facility table

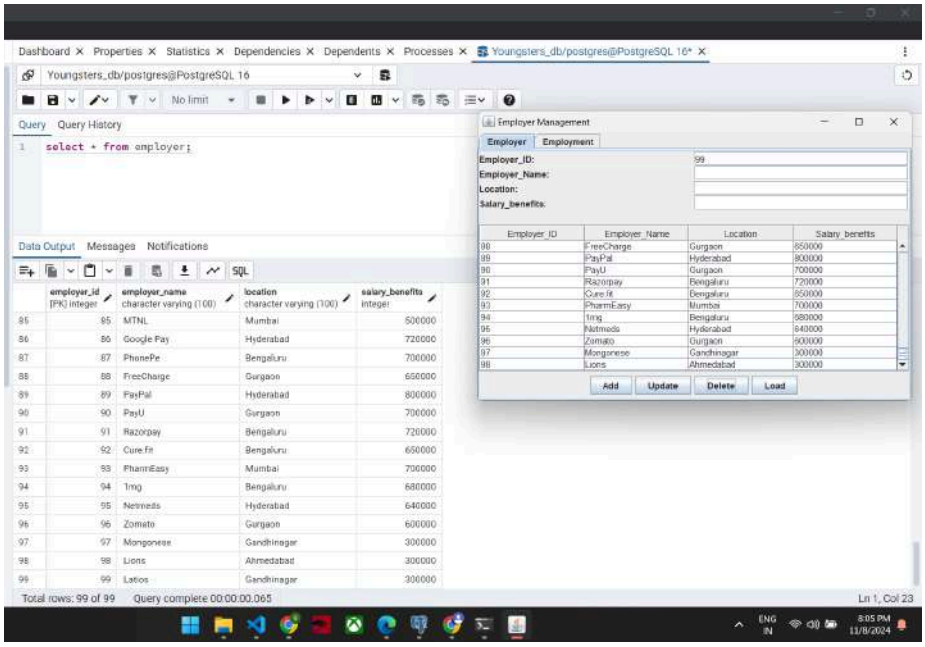


3) Delete Students:

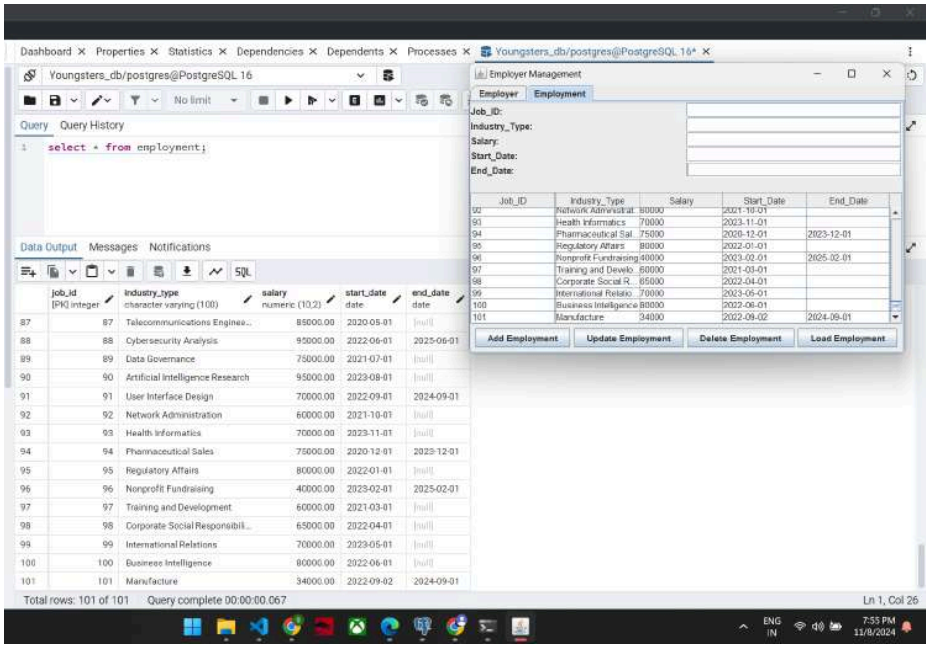
Before deleting employer from employer table



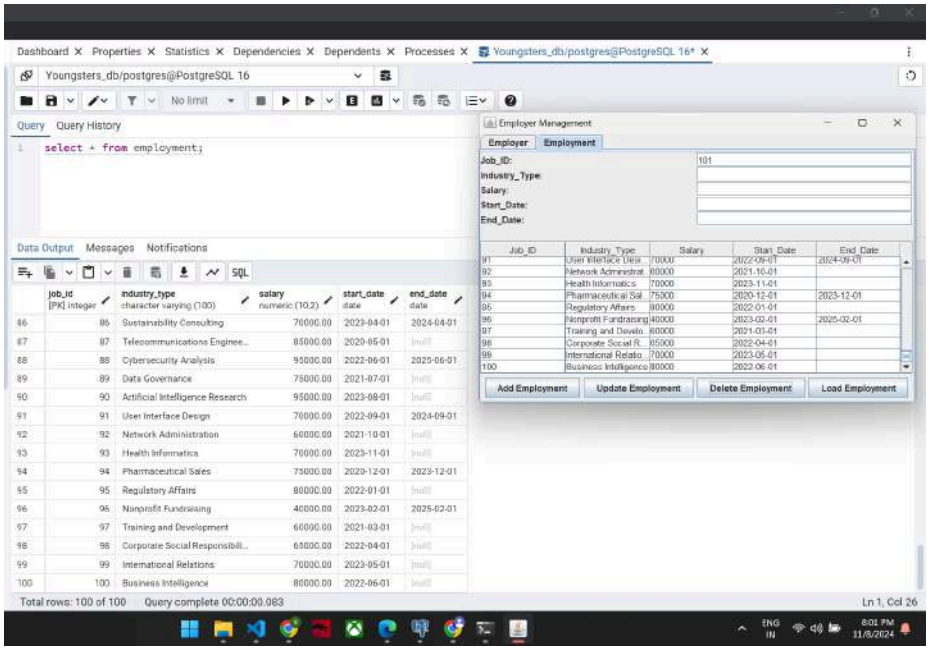
After deleting the employer from employer table



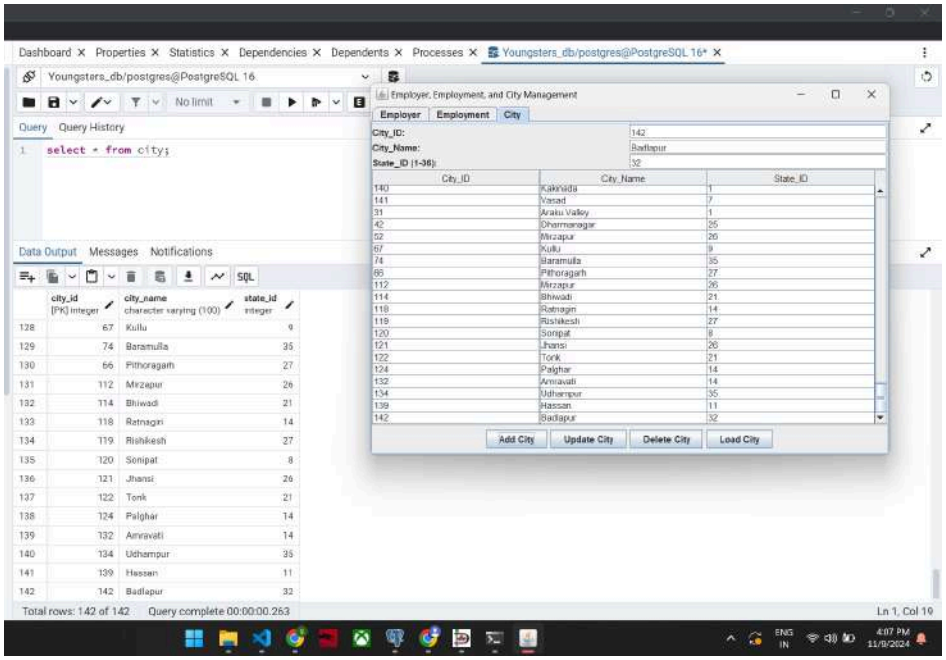
Before deleting Employment to the table of employment



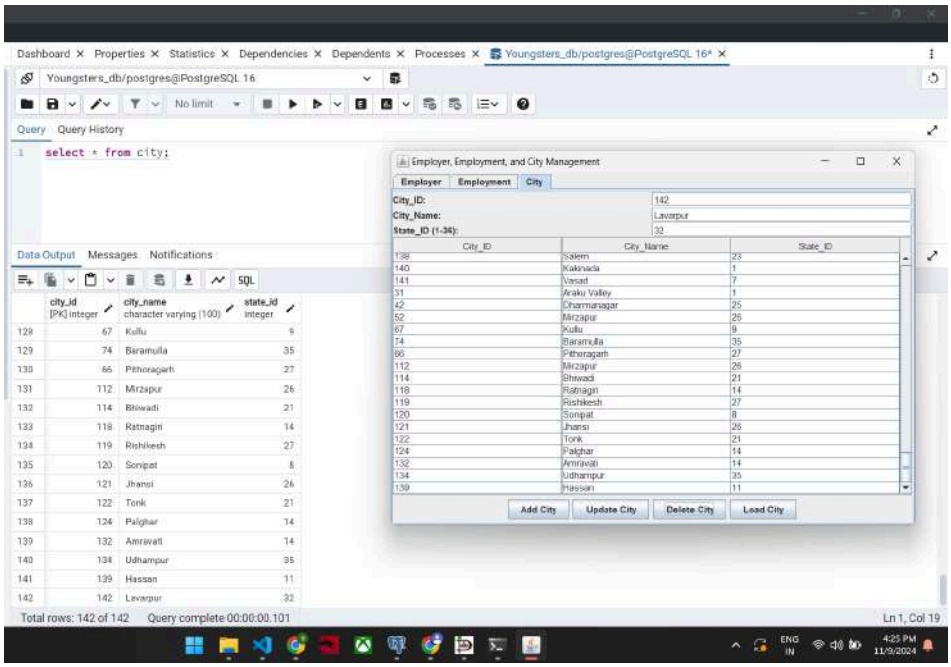
After deleting Employment to the table of employment



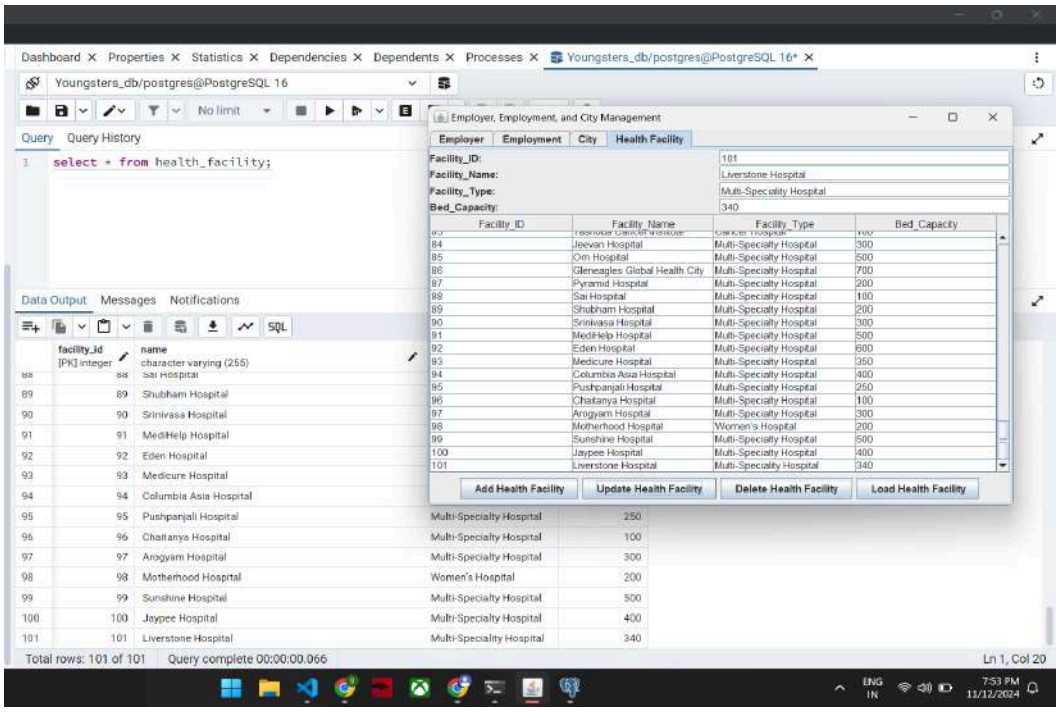
Before deleting the city from city table



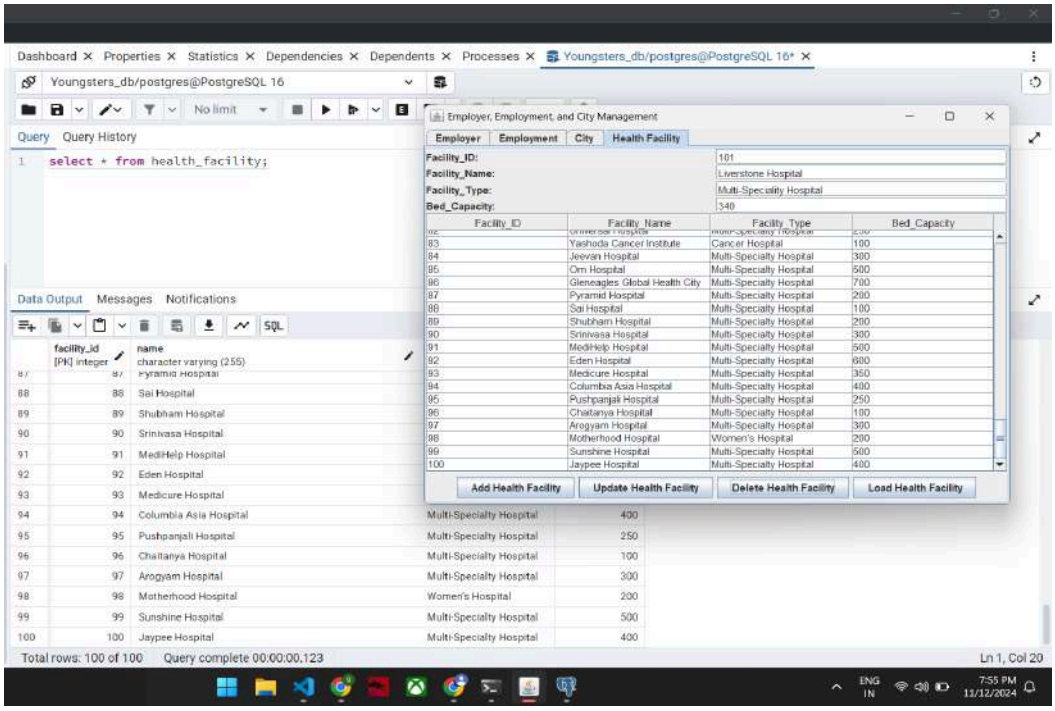
After deleting the city from city table



Before deleting the health_facility of the Health facility table

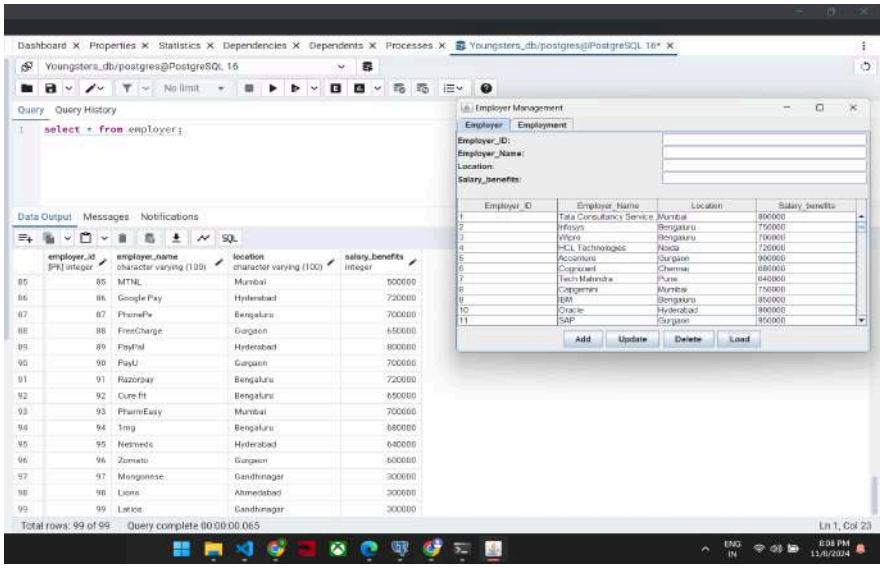


After deleting the health_facility of the Health_Facility table

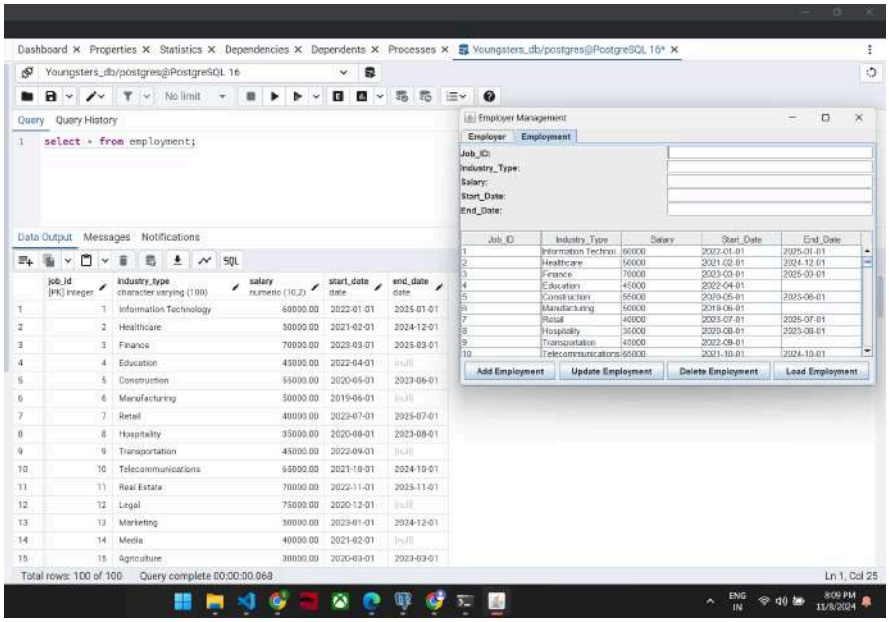


4) Load Students:

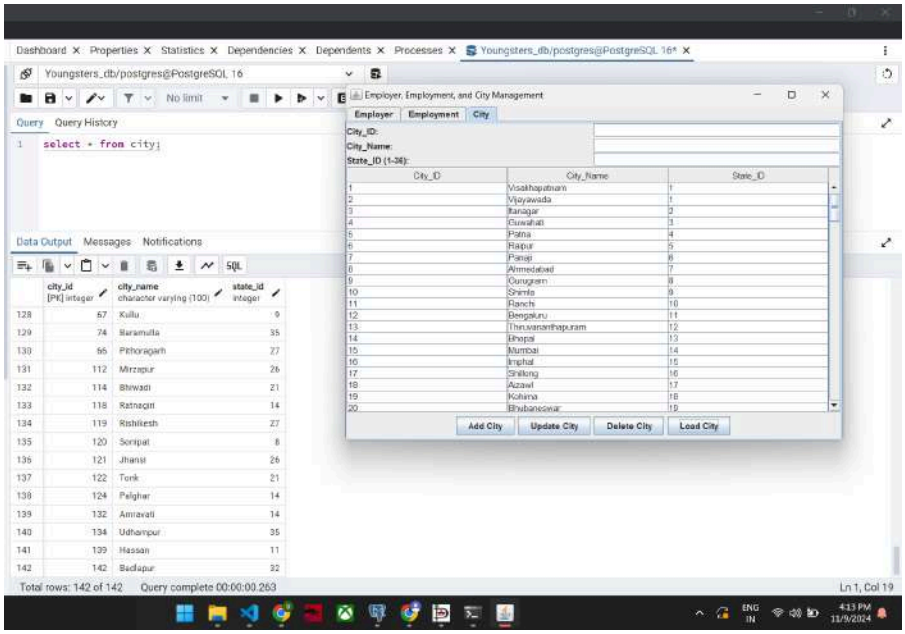
Loading the employers of employer table



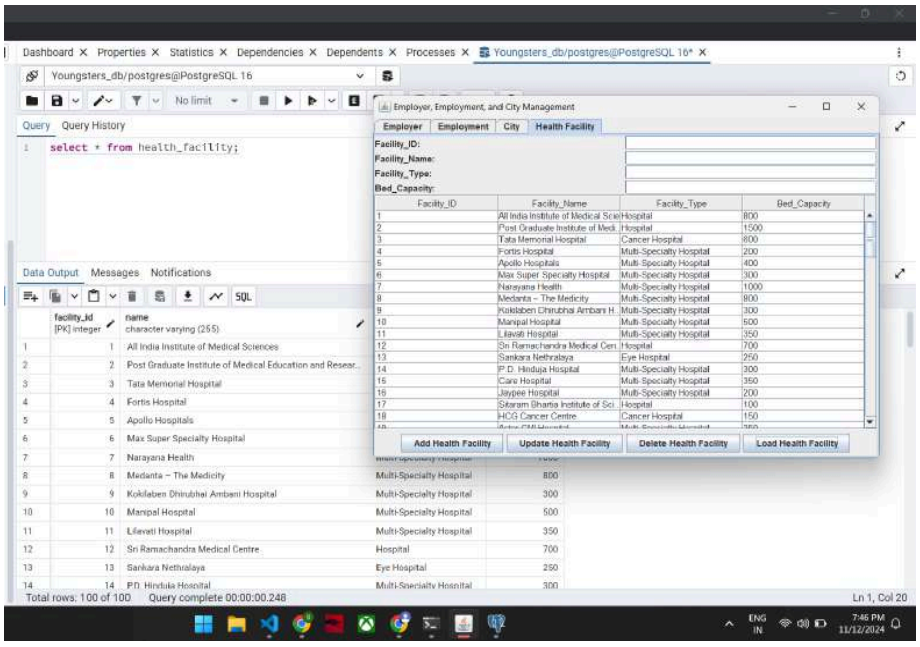
Loading the employment of employment table



Loading the cities of city table



Loading the health facilities of the health_Facility table



With the help of above diagrams we can can visualize how are the CRUD Operations working in the tables of our database however we will document in brief of all the functions in the GUI:

1) The Add button is used in all the four tables of employer, employment, city and health_facility and for all of them we have the attributes of the corresponding table and using the values entered by the user we add (insert) the values in our table.

2) The update button is used in all the four tables of employer, employment, city and health_facility and for all of them we have the attributes of the corresponding table and using the values entered by the user we update the values in our table.

3) The delete button is used in all the four tables of employer, employment, city and health_facility and for all of them we have the attributes of the corresponding table and using the values entered by the user we delete the values in our table.

4) The load button is used in all the four tables of employer, employment, city and health_facility and for all of them we load all the values that are present in the table.

Chapter 6: Technical Issues and Solution

6.1 Technical Issues

1. Database Design Complexity
    - Designing a normalized schema with multiple entities (e.g., Youngster, Migration Event, Employment) and relationships (e.g., one-to-many, many-to-many) required careful consideration to maintain data integrity and avoid redundancy.
    - Normalizing the tables and avoiding the redundancies that occurred during the process was hectic and time consuming, but a new venture.

2. Foreign Key and Referential Integrity
    - Implementing foreign keys correctly for relationships like FromRegion and ToRegion in the Migration_Event table was challenging due to the need to ensure data consistency without circular dependencies.

3. Data Population and Constraints
    - Adding initial data to tables with strict constraints, especially NOT NULL constraints on foreign keys, caused insertion errors due to missing referenced data.

4. Handling Multivalued Attributes
    - Storing multiple phone numbers for each youngster presented a challenge since this is a multivalued attribute.

5. Mapping States and Cities to other tables
    - Mapping 100+ cities to their respective states and ensuring consistency across multiple tables like Climate was time-consuming and prone to errors.

6. Query and View Optimization
    - Complex queries, especially joins and nested subqueries across multiple tables, resulted in slow performance.

7. GUI and Java Integration
    - Building a GUI application in Java for CRUD operations required secure, efficient database handling.

6.2 Solution

1. Database Design Complexity

    Approach Taken:

    - **Step 1**: Began by identifying main entities (Youngster, Migration Event, Employment, Education, etc.) and defining their relationships, aiming for a BCNF-compliant design to reduce redundancy.
    - **Step 2**: Used an Entity-Relationship Diagram (ERD) to visualize the relationships and dependencies among tables, which helped in spotting areas prone to anomalies.

- **Step 3**: Divided complex entities into smaller tables where needed and created linking tables (e.g., Enrolled for many-to-many relationships).

Tools Used: ERD design tool, SQL constraints for enforcing normalization rules.

Alternative Solution: Consider using a denormalized schema to reduce the number of tables and simplify queries. However, the normalized approach was chosen because it maintained data integrity and allowed more flexibility in future extensions.

2. Foreign Key and Referential Integrity

Approach Taken:

- **Step 1**: Identified relationships that required foreign keys, such as FromRegion and ToRegion in Migration_Event.
- **Step 2**: Carefully ordered table creation to avoid circular dependencies and used SQL constraints (FOREIGN KEY, ON DELETE CASCADE) to maintain referential integrity.
- **Step 3**: Performed test insertions and deletions to verify that referential integrity was preserved and that cascading deletions/updates worked as expected.

Tools Used:

PostgreSQL constraints and referential actions (ON DELETE CASCADE, ON UPDATE CASCADE).

Alternative Solution:
Considered a soft delete approach (flagging records instead of deleting) but found it less suitable since cascading deletions helped maintain data cleanliness when related records were removed.

3. Data Population and Constraints

   Approach Taken:

- **Step 1:** To manage NOT NULL foreign key constraints, populated referenced tables (e.g., State, City) first to ensure necessary IDs existed.
- **Step 2:** Inserted data in a sequence that respected dependency hierarchy, inserting records into dependent tables (e.g., Youngster, Migration_Event) only after referenced records existed.
- **Step 3:** Used test cases to confirm that constraints were applied correctly and all required fields were populated without errors.

  Tools Used: Batch insert scripts and SQL transactions to ensure atomicity during data population.

  Alternative Solution: Considered temporarily removing constraints for faster insertion but chose not to, as this could have led to inconsistent data.

4. Handling Multivalued Attributes

Approach Taken:

- **Step 1:** Identified attributes that could have multiple values, such as Phone Numbers for each Youngster.
- **Step 2:** Created a separate table, Youngster_Phone, to store each phone number as a unique row associated with the Youngster's ID. This approach normalized the multivalued attribute.
- **Step 3:** Use a composite key (Youngster_ID and Phone Number) to enforce uniqueness.

Tools Used:

SQL schema design with composite primary keys.

Alternative Solution:

Considered storing phone numbers as a comma-separated list within a single column, but the normalized approach was chosen because it maintained flexibility for querying and indexing.

5. Mapping Regions and Cities

Approach Taken:

- **Step 1:** Collected accurate city-state mappings and inserted data for 100+ cities and 36 states using SQL.
- **Step 2:** Used scripts to automate data entry and ensure each city correctly mapped to a state, double-checking mappings using SELECT queries to validate accuracy.

- **Step 3:** Cross-referenced results by running sample queries to confirm consistency, particularly in Climate and Government_Policy tables.

  Tools Used:
  SQL scripts and verification queries.

  Alternative Solution:
  Manual data entry was considered but was dismissed due to the high chance of errors and time consumption.

6. Query Optimization for Performance

Approach Taken:

- **Step 1:** Identified frequently queried fields and applied indexing to primary and foreign keys, such as Youngster_ID, City_ID, and State_ID.
- **Step 2:** Rewrote subqueries as joins where possible, as joins often perform better in relational databases.

  Tools Used:
  Pgadmin4 for query analysis, indexes on key columns.

Alternative Solution:
Considered creating views for complex queries, but this was skipped due to time constraints and focus on direct optimization of the main queries.

7. GUI and Java Integration

Approach Taken:

- **Step 1**: Developed the dbmsProject class in Java to handle database connections securely with PreparedStatement for each SQL operation, protecting against SQL injection.
- **Step 2**: Modularized CRUD operations (e.g., insertEmployer, updateEmployer) for reusability and consistency across tables.
- **Step 3**: Tested the GUI thoroughly to confirm that each operation performed as expected and handled errors gracefully.

Tools Used:
Java Swing for GUI, PreparedStatement for secure SQL execution

Alternative Solution:
Considered using simple Statement objects but chose PreparedStatement for better security and efficiency.