create database india_census;

use india_census;

select * from data1;

| District | State | Growth | Sex_Ratio | Literacy |
|---|---|---|---|---|
| South Andaman | Andaman And Nicobar Islands | 0.14 | 871 | 89.13 |
| North And Middle Andaman | Andaman And Nicobar Islands | 0 | 925 | 83.91 |
| Nicobars | Andaman And Nicobar Islands | -0.12 | 777 | 78.06 |
| Rangareddy | Andhra Pradesh | 0.48 | 961 | 75.87 |
| East Godavari | Andhra Pradesh | 0.05 | 1006 | 70.99 |
| Guntur | Andhra Pradesh | 0.09 | 1003 | 67.4 |
| Krishna | Andhra Pradesh | 0.08 | 992 | 73.74 |
| Visakhapatnam | Andhra Pradesh | 0.12 | 1006 | 66.91 |
| Chittoor | Andhra Pradesh | 0.11 | 997 | 71.53 |
| Anantapur | Andhra Pradesh | 0.12 | 977 | 63.57 |
| Kurnool | Andhra Pradesh | 0.15 | 988 | 59.97 |
| Mahbubnagar | Andhra Pradesh | 0.15 | 977 | 55.04 |

select * from data2;

| District | State | Population |
|---|---|---|
| Adilabad | Andhra Pradesh | 2741239 |
| Agra | Uttar Pradesh | 4418797 |
| Ahmadabad | Gujarat | 7214225 |
| Ahmadnagar | Maharashtra | 4543159 |
| Aizawl | Mizoram | 400309 |
| Ajmer | Rajasthan | 2583052 |
| Akola | Maharashtra | 1813906 |
| Alappuzha | Kerala | 2127789 |
| Aligarh | Uttar Pradesh | 3673889 |
| Alirajpur | Madhya Pradesh | 728999 |
| Allahabad | Uttar Pradesh | 5954391 |
| Almora | Uttarakhand | 622506 |

## -- no of rows in our dataset--

select count(*) from data1;

-- 640 rows --

select count(*) from data2;

-- 640 rows—

## -- data for only Himachal Pradesh and Uttarakhand--

select * from data1 where State='Himachal Pradesh' or State='Uttarakhand';

| District | State | Growth | Sex_Ratio | Literacy |
|---|---|---|---|---|
| Una | Himachal Pradesh | 0.16 | 976 | 86.53 |
| Chamba | Himachal Pradesh | 0.13 | 986 | 72.17 |
| Hamirpur | Himachal Pradesh | 0.1 | 1095 | 88.15 |
| Kullu | Himachal Pradesh | 0.15 | 942 | 79.4 |
| Bilaspur | Himachal Pradesh | 0.12 | 981 | 84.59 |
| Kinnaur | Himachal Pradesh | 0.07 | 819 | 80 |
| Lahul and Spiti | Himachal Pradesh | -0.05 | 903 | 76.81 |
| Haridwar | Uttarakhand | 0.31 | 880 | 73.43 |
| Dehradun | Uttarakhand | 0.32 | 902 | 84.25 |
| Udham Singh Nagar | Uttarakhand | 0.33 | 920 | 73.1 |
| Nainital | Uttarakhand | 0.25 | 934 | 83.88 |
| Pauri Garhwal | Uttarakhand | -0.01 | 1103 | 82.02 |

## -- Total Population of India--

select sum(Population) from data2;

-- 1210854977—

## -- growth rate by state and district--

select State,district, round(growth*100,2)  as growth_in_percent from data1 order by growth desc;

| State | district | growth_in_percent |
|---|---|---|
| Nagaland | Kohima | 132 |
| Nagaland | Dimapur | 127 |
| Arunachal Pradesh | Kurung Kumey | 117 |
| Nagaland | Phek | 112 |
| Nagaland | Peren | 104 |
| Nagaland | Wokha | 99 |
| Nagaland | Tuensang | 95 |
| Nagaland | Mon | 80 |
| Nagaland | Zunheboto | 78 |
| Puducherry | Yanam | 77 |
| Haryana | Gurgaon | 74 |
| Manipur | Senapati | 69 |

Kohima district of Nagaland has shown max growth rate with 132%

| State | district | growth_in_percent |
|---|---|---|
| West Bengal | Kolkata | -2 |
| Kerala | Pathanamthitta | -3 |
| Tamil Nadu | The Nilgiris | -4 |
| Himachal Pradesh | Lahul and Spiti | -5 |
| Maharashtra | Ratnagiri | -5 |
| Uttar Pradesh | Shrawasti | -5 |
| Mizoram | Saiha | -7 |
| Maharashtra | Mumbai City | -8 |
| Delhi | Central Delhi | -10 |
| Andaman And Nic... | Nicobars | -12 |
| Delhi | New Delhi | -21 |
| Nagaland | Longleng | -22 |

Longleng district of Nagaland has shown negative growth rate of -22%

## -- top 3 districts with highest sex ratio--

select State,district, sex_ratio from data1  order by sex_ratio desc limit 3;

| State | district | sex_ratio |
|---|---|---|
| Puducherry | Mahe | 1184 |
| Uttarakhand | Almora | 1139 |
| Kerala | Kannur | 1136 |

Mahe , Almora and Kannur districts have shown highest sex ratio .

## -- Top 3 districts from each state having highest literacy rate--

with cte as(select state, district, literacy, dense_rank() over (partition by state order by literacy desc)

 as rnk from data1 order by state)

 select state, district, literacy from cte where rnk in(1,2,3);

| state | district | literacy |
|---|---|---|
| Andaman And Nicobar Islands | South Andaman | 89.13 |
| Andaman And Nicobar Islands | North And Middle Andaman | 83.91 |
| Andaman And Nicobar Islands | Nicobars | 78.06 |
| Andhra Pradesh | Hyderabad | 83.25 |
| Andhra Pradesh | Rangareddy | 75.87 |
| Andhra Pradesh | West Godavari | 74.63 |
| Arunachal Pradesh | Papumpare | 79.95 |
| Arunachal Pradesh | Lower Subansiri | 74.35 |
| Arunachal Pradesh | East Siang | 72.54 |
| Assam | Kamrup Metropolitan | 88.71 |
| Assam | Jorhat | 82.15 |
| Assam | Sivasagar | 80.41 |

--97 rows were returned—

## -- top and bottom districts with highest and lowest avg literacy rate--

with cte as(select State,district, literacy

from data1 order by literacy desc),cte2 as

(select state, district , literacy, dense_rank() over (order by literacy desc )as top_rnk,

dense_rank() over (order by literacy asc )as bottom_rnk

from cte)

select state, district , literacy from cte2 where top_rnk=1 or bottom_rnk=1;

| state | district | literacy |
|---|---|---|
| Mizoram | Serchhip | 97.91 |
| Madhya Pradesh | Alirajpur | 36.1 |

## -- joining data1 and data2 tables--

select data1.*, data2.population from data1 join data2 on data1.district=data2.district;

| District | State | Growth | Sex_Ratio | Literacy | population |
|---|---|---|---|---|---|
| South Andaman | Andaman And Nicobar Islands | 0.14 | 871 | 89.13 | 238142 |
| Nicobars | Andaman And Nicobar Islands | -0.12 | 777 | 78.06 | 36842 |
| Rangareddy | Andhra Pradesh | 0.48 | 961 | 75.87 | 5296741 |
| East Godavari | Andhra Pradesh | 0.05 | 1006 | 70.99 | 5154296 |
| Guntur | Andhra Pradesh | 0.09 | 1003 | 67.4 | 4887813 |
| Krishna | Andhra Pradesh | 0.08 | 992 | 73.74 | 4517398 |
| Visakhapatnam | Andhra Pradesh | 0.12 | 1006 | 66.91 | 4290589 |
| Chittoor | Andhra Pradesh | 0.11 | 997 | 71.53 | 4174064 |
| Anantapur | Andhra Pradesh | 0.12 | 977 | 63.57 | 4081148 |
| Kurnool | Andhra Pradesh | 0.15 | 988 | 59.97 | 4053463 |
| Mahbubnagar | Andhra Pradesh | 0.15 | 977 | 55.04 | 4053028 |
| Hyderabad | Andhra Pradesh | 0.03 | 954 | 83.25 | 3943323 |

## -- Derived number of males and females using sex ratio and population--

-- females/males= sex ratio ---1

-- females+males = population---2

-- from equation 2 ----females= population-males (put this in equation 1)

-- population- males = sex ratio * males

-- population = males(sex ratio +1)

-- males = population/(sex ratio +1)----------MALES

-- females = population - population/(sex ratio +1)

--          = population (1-(1/(sex ratio +1))

--          = population * (sex ratio/sex ratio +1)---------FEMALES

with cte as(select data1.district

,data1.state,data1.growth,data1.sex_ratio/1000 as sex_ratio1,  data2.population from data1 join data2

on data1.district=data2.district)

select district, state ,population, round(population/(sex_ratio1 +1),0) as males ,

round((population * sex_ratio1)/(sex_ratio1 +1),0) as females from cte order by state, district;

| district | state | population | males | females |
|---|---|---|---|---|
| Nicobars | Andaman And Nicobar Islands | 36842 | 20733 | 16109 |
| South Andaman | Andaman And Nicobar Islands | 238142 | 127281 | 110861 |
| Adilabad | Andhra Pradesh | 2741239 | 1369935 | 1371304 |
| Anantapur | Andhra Pradesh | 4081148 | 2064314 | 2016834 |
| Chittoor | Andhra Pradesh | 4174064 | 2090167 | 2083897 |
| East Godavari | Andhra Pradesh | 5154296 | 2569440 | 2584856 |
| Guntur | Andhra Pradesh | 4887813 | 2440246 | 2447567 |
| Hyderabad | Andhra Pradesh | 3943323 | 2018077 | 1925246 |
| Karimnagar | Andhra Pradesh | 3776269 | 1880612 | 1895657 |
| Khammam | Andhra Pradesh | 2797370 | 1391034 | 1406336 |
| Krishna | Andhra Pradesh | 4517398 | 2267770 | 2249628 |
| Kurnool | Andhra Pradesh | 4053463 | 2038965 | 2014498 |

## -- state level male and female population--

with cte as(select data1.district

,data1.state,data1.growth,data1.sex_ratio/1000 as sex_ratio1,  data2.population from data1 join data2

on data1.district=data2.district), cte2 as

(select district, state ,population, round(population/(sex_ratio1 +1),0) as males ,

round((population * sex_ratio1)/(sex_ratio1 +1),0) as females from cte order by state, district)

select state, sum(males) as population_male, sum(females) as population_females from cte2 group by state

order by state;

| state | population_male | population_females |
|---|---|---|
| Andaman And Nicobar Islands | 148014 | 126970 |
| Andhra Pradesh | 42439617 | 42141160 |
| Arunachal Pradesh | 624752 | 582402 |
| Assam | 15939857 | 15265719 |
| Bihar | 53518388 | 49182975 |
| Chandigarh | 580556 | 474894 |
| Chhattisgarh | 13659264 | 13518218 |
| Daman and Diu | 150264 | 92983 |
| Delhi | 77939 | 64065 |
| Goa | 739239 | 719306 |
| Gujarat | 30423412 | 27889194 |
| Haryana | 13495175 | 11856287 |

## -- highest population in which state and district?--

select district, state, population from  data2 order by population desc;

| district | state | population |
|---|---|---|
| Thane | Maharashtra | 11060148 |
| North Twenty Four Parganas | West Bengal | 10009781 |
| Bangalore | Karnataka | 9621551 |
| Pune | Maharashtra | 9429408 |
| Mumbai Suburban | Maharashtra | 9356962 |
| South Twenty Four Parganas | West Bengal | 8161961 |
| Barddhaman | West Bengal | 7717563 |
| Ahmadabad | Gujarat | 7214225 |
| Murshidabad | West Bengal | 7103807 |
| Jaipur | Rajasthan | 6626178 |
| Nashik | Maharashtra | 6107187 |
| Surat | Gujarat | 6081322 |

## -- states with respective average literacy rates--

select State, round(avg(literacy),2) as avg_literacy

from data1 group by state order by avg_literacy desc;

| State | avg_literacy |
|---|---|
| Kerala | 93.7 |
| Lakshadweep | 91.85 |
| Mizoram | 89.36 |
| Goa | 88.58 |
| Puducherry | 87.46 |
| Tripura | 86.64 |
| Delhi | 86.56 |
| Chandigarh | 86.05 |
| Daman and Diu | 85.76 |
| Andaman And Nicobar Islands | 83.7 |
| Himachal Pradesh | 81.75 |
| Maharashtra | 80.97 |

# -- Finding number of literate and illeterate people--

-- number of literates/population = literacy rate

-- number of literates= literacy rate * population

select data1.district

,data1.state, round(data1.literacy/100,2) as literacy_,  data2.population,

round(round(data1.literacy/100,2)*data2.population,0) as number_of_literates,

data2.population-(round(round(data1.literacy/100,2)*data2.population,0)) as number_of_illiterates

 from data1 join data2

on data1.district=data2.district order by state;

| district | state | literacy_ | population | number_of_literates | number_of_illiterates |
|---|---|---|---|---|---|
| South Andaman | Andaman And Nicobar Islands | 0.89 | 238142 | 211946 | 26196 |
| Nicobars | Andaman And Nicobar Islands | 0.78 | 36842 | 28737 | 8105 |
| Rangareddy | Andhra Pradesh | 0.76 | 5296741 | 4025523 | 1271218 |
| East Godavari | Andhra Pradesh | 0.71 | 5154296 | 3659550 | 1494746 |
| Guntur | Andhra Pradesh | 0.67 | 4887813 | 3274835 | 1612978 |
| Krishna | Andhra Pradesh | 0.74 | 4517398 | 3342875 | 1174523 |
| Visakhapatnam | Andhra Pradesh | 0.67 | 4290589 | 2874695 | 1415894 |
| Chittoor | Andhra Pradesh | 0.72 | 4174064 | 3005326 | 1168738 |
| Anantapur | Andhra Pradesh | 0.64 | 4081148 | 2611935 | 1469213 |
| Kurnool | Andhra Pradesh | 0.6 | 4053463 | 2432078 | 1621385 |
| Mahbubnagar | Andhra Pradesh | 0.55 | 4053028 | 2229165 | 1823863 |
| Hyderabad | Andhra Pradesh | 0.83 | 3943323 | 3272958 | 670365 |
| West Godavari | Andhra Pradesh | 0.75 | 3936966 | 2952724 | 984242 |

# -- TO FIND POPULATION BEFORE CENSUS 2011--

-- (pop after-pop before)/pop before = growth rate

-- pop after/pop before = growth rate +1

-- pop before = pop after/(growth rate+1)

with cte as(select data1.*,  data2.population from data1 join data2

on data1.district=data2.district)

select district, state, growth , population as population_after,  round(population/(growth+1),0) as

population_before

from cte order by state;

| District | State | Growth | population_after | population_before |
|---|---|---|---|---|
| South Andaman | Andaman And Nicobar Islands | 0.14 | 238142 | 208896 |
| Nicobars | Andaman And Nicobar Islands | -0.12 | 36842 | 41866 |
| Rangareddy | Andhra Pradesh | 0.48 | 5296741 | 3578879 |
| East Godavari | Andhra Pradesh | 0.05 | 5154296 | 4908853 |
| Guntur | Andhra Pradesh | 0.09 | 4887813 | 4484232 |
| Krishna | Andhra Pradesh | 0.08 | 4517398 | 4182776 |
| Visakhapatnam | Andhra Pradesh | 0.12 | 4290589 | 3830883 |
| Chittoor | Andhra Pradesh | 0.11 | 4174064 | 3760418 |
| Anantapur | Andhra Pradesh | 0.12 | 4081148 | 3643882 |
| Kurnool | Andhra Pradesh | 0.15 | 4053463 | 3524750 |
| Mahbubnagar | Andhra Pradesh | 0.15 | 4053028 | 3524372 |
| Hyderabad | Andhra Pradesh | 0.03 | 3943323 | 3828469 |