Data Ingestion from the RDS to HDFS using Sqoop

1. **Sqoop Import command**

   sqoop import --connect jdbc:mysql://upgradawsrds.cpclxrkdvwmz.us-east-1.rds.amazonaws.com:3306/indiaahs2012_13 --username upgraduser --password upgraduser --table Key_indicator_districtwise --warehouse-dir caseStudy_etl

2. **Command to see the list of imported data**.

   hadoop fs -cat /user/root/caseStudy_etl/Key_indicator_districtwise/part-m-*

External table creation in Hive and loading the ingested data into it. Data ingestion verification.

1. **Command to create the external table**

   Create external table if not exists Key_indicator_districtwise_extern1 (ID int,
   State_Name string,
   State_District_Name string,
   AA_Sample_Units_Total double,
   AA_Sample_Units_Rural double,
   AA_Sample_Units_Urban double,
   AA_Households_Total double,
   AA_Households_Rural double,
   AA_Households_Urban double,
   AA_Population_Total double,
   AA_Population_Rural double,
   AA_Population_Urban double,
   AA_Ever_Married_Women_Aged_15_49_Years_Total double,
   AA_Ever_Married_Women_Aged_15_49_Years_Rural double,
   AA_Ever_Married_Women_Aged_15_49_Years_Urban double,
   AA_Currently_Married_Women_Aged_15_49_Years_Total double,
   AA_Currently_Married_Women_Aged_15_49_Years_Rural double,
   AA_Currently_Married_Women_Aged_15_49_Years_Urban double,
   AA_Children_12_23_Months_Total double,
   AA_Children_12_23_Months_Rural double,
   AA_Children_12_23_Months_Urban double,
   BB_Average_Household_Size_Sc_Total double,
   BB_Average_Household_Size_Sc_Rural double,
   BB_Average_Household_Size_Sc_Urban double,
   BB_Average_Household_Size_St_Total double,
   BB_Average_Household_Size_St_Rural double,

BB_Average_Household_Size_St_Urban double,
BB_Average_Household_Size_All_Total double,
BB_Average_Household_Size_All_Rural double,
BB_Average_Household_Size_All_Urban double,
BB_Population_Below_Age_15_Years_Total double,
BB_Population_Below_Age_15_Years_Rural double,
BB_Population_Below_Age_15_Years_Urban double,
BB_Dependency_Ratio_Total double,
BB_Dependency_Ratio_Rural double,
BB_Dependency_Ratio_Urban double,
BB_Currently_Married_Illiterate_Women_Aged_15_49_Years_Total double,
BB_Currently_Married_Illiterate_Women_Aged_15_49_Years_Rural double,
BB_Currently_Married_Illiterate_Women_Aged_15_49_Years_Urban double,
CC_Sex_Ratio_At_Birth_Total double,
CC_Sex_Ratio_At_Birth_Rural double,
CC_Sex_Ratio_At_Birth_Urban double,
CC_Sex_Ratio_0_4_Years_Total double,
CC_Sex_Ratio_0_4_Years_Rural double,
CC_Sex_Ratio_0_4_Years_Urban double,
CC_Sex_Ratio_All_Ages_Total double,
CC_Sex_Ratio_All_Ages_Rural double,
CC_Sex_Ratio_All_Ages_Urban double,
DD_Person_Total double,
DD_Person_Rural double,
DD_Person_Urban double,
DD_Male_Total double,
DD_Male_Rural double,
DD_Male_Urban double,
DD_Female_Total double,
DD_Female_Rural double,
DD_Female_Urban double,
EE_Marriages_Among_Females_Below_Legal_Age_18_Years_Total double,
EE_Marriages_Among_Females_Below_Legal_Age_18_Years_Rural double,
EE_Marriages_Among_Females_Below_Legal_Age_18_Years_Urban double,
EE_Marriages_Among_Males_Below_Legal_Age_21_Years_Total double,
EE_Marriages_Among_Males_Below_Legal_Age_21_Years_Rural double,
EE_Marriages_Among_Males_Below_Legal_Age_21_Years_Urban double,
EE_Married_Women_20_24_Years_Married_Before_18_Years_Total double,
EE_Married_Women_20_24_Years_Married_Before_18_Years_Rural double,
EE_Married_Women_20_24_Years_Married_Before_18_Years_Urban double,
EE_Married_Men_25_29_Years_Married_Before_21_Years_Total double,
EE_Married_Men_25_29_Years_Married_Before_21_Years_Rural double,

EE_Married_Men_25_29_Years_Married_Before_21_Years_Urban double,
EE_Mean_Age_At_Marriage_Male_Total double,
EE_Mean_Age_At_Marriage_Male_Rural double,
EE_Mean_Age_At_Marriage_Male_Urban double,
EE_Mean_Age_At_Marriage_Female_Total double,
EE_Mean_Age_At_Marriage_Female_Rural double,
EE_Mean_Age_At_Marriage_Female_Urban double,
FF_Children_Attending_School_Age_6_17_Years_Person_Total double,
FF_Children_Attending_School_Age_6_17_Years_Person_Rural double,
FF_Children_Attending_School_Age_6_17_Years_Person_Urban double,
FF_Children_Attending_School_Age_6_17_Years_Male_Total double,
FF_Children_Attending_School_Age_6_17_Years_Male_Rural double,
FF_Children_Attending_School_Age_6_17_Years_Male_Urban double,
FF_Children_Attending_School_Age_6_17_Years_Female_Total double,
FF_Children_Attending_School_Age_6_17_Years_Female_Rural double,
FF_Children_Attending_School_Age_6_17_Years_Female_Urban double,
FF_Children_Attended_Before_Drop_Out_Age_6_17_Years_Person_Total double,
FF_Children_Attended_Before_Drop_Out_Age_6_17_Years_Person_Rural double,
FF_Children_Attended_Before_Drop_Out_Age_6_17_Years_Person_Urban double,
FF_Children_Attended_Before_Drop_Out_Age_6_17_Years_Male_Total double,
FF_Children_Attended_Before_Drop_Out_Age_6_17_Years_Male_Rural double,
FF_Children_Attended_Before_Drop_Out_Age_6_17_Years_Male_Urban double,
FF_Children_Attended_Before_Drop_Out_Age_6_17_Years_Female_Total double,
FF_Children_Attended_Before_Drop_Out_Age_6_17_Years_Female_Rural double,
FF_Children_Attended_Before_Drop_Out_Age_6_17_Years_Female_Urban double,
GG_Children_Aged_5_14_Years_Engaged_In_Work_Person_Total double,
GG_Children_Aged_5_14_Years_Engaged_In_Work_Person_Rural double,
GG_Children_Aged_5_14_Years_Engaged_In_Work_Person_Urban double,
GG_Children_Aged_5_14_Years_Engaged_In_Work_Male_Total double,
GG_Children_Aged_5_14_Years_Engaged_In_Work_Male_Rural double,
GG_Children_Aged_5_14_Years_Engaged_In_Work_Male_Urban double,
GG_Children_Aged_5_14_Years_Engaged_In_Work_Female_Total double,
GG_Children_Aged_5_14_Years_Engaged_In_Work_Female_Rural double,
GG_Children_Aged_5_14_Years_Engaged_In_Work_Female_Urban double,
GG_Work_Participation_Rate_15_Years_And_Above_Person_Total double,
GG_Work_Participation_Rate_15_Years_And_Above_Person_Rural double,
GG_Work_Participation_Rate_15_Years_And_Above_Person_Urban double,
GG_Work_Participation_Rate_15_Years_And_Above_Male_Total double,
GG_Work_Participation_Rate_15_Years_And_Above_Male_Rural double,
GG_Work_Participation_Rate_15_Years_And_Above_Male_Urban double,
GG_Work_Participation_Rate_15_Years_And_Above_Female_Total double,
GG_Work_Participation_Rate_15_Years_And_Above_Female_Rural double,

GG_Work_Participation_Rate_15_Years_And_Above_Female_Urban double,
HH_Prevalence_Disability_Per_100000_Population_Person_Total double,
HH_Prevalence_Disability_Per_100000_Population_Person_Rural double,
HH_Prevalence_Disability_Per_100000_Population_Person_Urban double,
HH_Prevalence_Disability_Per_100000_Population_Male_Total double,
HH_Prevalence_Disability_Per_100000_Population_Male_Rural double,
HH_Prevalence_Disability_Per_100000_Population_Male_Urban double,
HH_Prevalence_Disability_Per_100000_Population_Female_Total double,
HH_Prevalence_Disability_Per_100000_Population_Female_Rural double,
HH_Prevalence_Disability_Per_100000_Population_Female_Urban double,
II_Injured_By_Type_Of_Treatment_Per_100000_Severe_Person_Total double,
II_Injured_By_Type_Of_Treatment_Per_100000_Severe_Person_Rural double,
II_Injured_By_Type_Of_Treatment_Per_100000_Severe_Person_Urban double,
II_Injured_By_Type_Of_Treatment_Per_100000_Severe_Male_Total double,
II_Injured_By_Type_Of_Treatment_Per_100000_Severe_Male_Rural double,
II_Injured_By_Type_Of_Treatment_Per_100000_Severe_Male_Urban double,
II_Injured_By_Type_Of_Treatment_Per_100000_Severe_Female_Total double,
II_Injured_By_Type_Of_Treatment_Per_100000_Severe_Female_Rural double,
II_Injured_By_Type_Of_Treatment_Per_100000_Severe_Female_Urban double,
II_Injured_By_Type_Of_Treatment_Per_100000_Major_Person_Total double,
II_Injured_By_Type_Of_Treatment_Per_100000_Major_Person_Rural double,
II_Injured_By_Type_Of_Treatment_Per_100000_Major_Person_Urban double,
II_Injured_By_Type_Of_Treatment_Per_100000_Major_Male_Total double,
II_Injured_By_Type_Of_Treatment_Per_100000_Major_Male_Rural double,
II_Injured_By_Type_Of_Treatment_Per_100000_Major_Male_Urban double,
II_Injured_By_Type_Of_Treatment_Per_100000_Major_Female_Total double,
II_Injured_By_Type_Of_Treatment_Per_100000_Major_Female_Rural double,
II_Injured_By_Type_Of_Treatment_Per_100000_Major_Female_Urban double,
II_Injured_By_Type_Of_Treatment_Per_100000_Minor_Person_Total double,
II_Injured_By_Type_Of_Treatment_Per_100000_Minor_Person_Rural double,
II_Injured_By_Type_Of_Treatment_Per_100000_Minor_Person_Urban double,
II_Injured_By_Type_Of_Treatment_Per_100000_Minor_Male_Total double,
II_Injured_By_Type_Of_Treatment_Per_100000_Minor_Male_Rural double,
II_Injured_By_Type_Of_Treatment_Per_100000_Minor_Male_Urban double,
II_Injured_By_Type_Of_Treatment_Per_100000_Minor_Female_Total double,
II_Injured_By_Type_Of_Treatment_Per_100000_Minor_Female_Rural double,
II_Injured_By_Type_Of_Treatment_Per_100000_Minor_Female_Urban double,
JJ_Acute_Illness_Per_100000_Diarrhoea_Dysentery_Person_Total double,
JJ_Acute_Illness_Per_100000_Diarrhoea_Dysentery_Person_Rural double,
JJ_Acute_Illness_Per_100000_Diarrhoea_Dysentery_Person_Urban double,
JJ_Acute_Illness_Per_100000_Diarrhoea_Dysentery_Male_Total double,
JJ_Acute_Illness_Per_100000_Diarrhoea_Dysentery_Male_Rural double,

JJ_Acute_Illness_Per_100000_Diarrhoea_Dysentery_Male_Urban double,
JJ_Acute_Illness_Per_100000_Diarrhoea_Dysentery_Female_Total double,
JJ_Acute_Illness_Per_100000_Diarrhoea_Dysentery_Female_Rural double,
JJ_Acute_Illness_Per_100000_Diarrhoea_Dysentery_Female_Urban double,
JJ_Acute_Illness_Per_100000_Respiratory_Infection_Person_Total double,
JJ_Acute_Illness_Per_100000_Respiratory_Infection_Person_Rural double,
JJ_Acute_Illness_Per_100000_Respiratory_Infection_Person_Urban double,
JJ_Acute_Illness_Per_100000_Respiratory_Infection_Male_Total double,
JJ_Acute_Illness_Per_100000_Respiratory_Infection_Male_Rural double,
JJ_Acute_Illness_Per_100000_Respiratory_Infection_Male_Urban double,
JJ_Acute_Illness_Per_100000_Respiratory_Infection_Female_Total double,
JJ_Acute_Illness_Per_100000_Respiratory_Infection_Female_Rural double,
JJ_Acute_Illness_Per_100000_Respiratory_Infection_Female_Urban double,
JJ_Acute_Illness_Per_100000_Fever_All_Types_Person_Total double,
JJ_Acute_Illness_Per_100000_Fever_All_Types_Person_Rural double,
JJ_Acute_Illness_Per_100000_Fever_All_Types_Person_Urban double,
JJ_Acute_Illness_Per_100000_Fever_All_Types_Male_Total double,
JJ_Acute_Illness_Per_100000_Fever_All_Types_Male_Rural double,
JJ_Acute_Illness_Per_100000_Fever_All_Types_Male_Urban double,
JJ_Acute_Illness_Per_100000_Fever_All_Types_Female_Total double,
JJ_Acute_Illness_Per_100000_Fever_All_Types_Female_Rural double,
JJ_Acute_Illness_Per_100000_Fever_All_Types_Female_Urban double,
JJ_Acute_Illness_Per_100000_Any_Type_Of_Acute_Person_Total double,
JJ_Acute_Illness_Per_100000_Any_Type_Of_Acute_Person_Rural double,
JJ_Acute_Illness_Per_100000_Any_Type_Of_Acute_Person_Urban double,
JJ_Acute_Illness_Per_100000_Any_Type_Of_Acute_Male_Total double,
JJ_Acute_Illness_Per_100000_Any_Type_Of_Acute_Male_Rural double,
JJ_Acute_Illness_Per_100000_Any_Type_Of_Acute_Male_Urban double,
JJ_Acute_Illness_Per_100000_Any_Type_Of_Acute_Female_Total double,
JJ_Acute_Illness_Per_100000_Any_Type_Of_Acute_Female_Rural double,
JJ_Acute_Illness_Per_100000_Any_Type_Of_Acute_Female_Urban double,
JJ_Acute_Illness_And_Taking_Treatment_Person_Total double,
JJ_Acute_Illness_And_Taking_Treatment_Person_Rural double,
JJ_Acute_Illness_And_Taking_Treatment_Person_Urban double,
JJ_Acute_Illness_And_Taking_Treatment_Male_Total double,
JJ_Acute_Illness_And_Taking_Treatment_Male_Rural double,
JJ_Acute_Illness_And_Taking_Treatment_Male_Urban double,
JJ_Acute_Illness_And_Taking_Treatment_Female_Total double,
JJ_Acute_Illness_And_Taking_Treatment_Female_Rural double,
JJ_Acute_Illness_And_Taking_Treatment_Female_Urban double,
JJ_Acute_Illness_And_Taking_Treatment_Government_Person_Total double,
JJ_Acute_Illness_And_Taking_Treatment_Government_Person_Rural double,

JJ_Acute_Illness_And_Taking_Treatment_Government_Person_Urban double,
JJ_Acute_Illness_And_Taking_Treatment_Government_Male_Total double,
JJ_Acute_Illness_And_Taking_Treatment_Government_Male_Rural double,
JJ_Acute_Illness_And_Taking_Treatment_Government_Male_Urban double,
JJ_Acute_Illness_And_Taking_Treatment_Government_Female_Total double,
JJ_Acute_Illness_And_Taking_Treatment_Government_Female_Rural double,
JJ_Acute_Illness_And_Taking_Treatment_Government_Female_Urban double,
KK_Symptoms_Of_Chronic_Illness_Per_100000_Person_Total double,
KK_Symptoms_Of_Chronic_Illness_Per_100000_Person_Rural double,
KK_Symptoms_Of_Chronic_Illness_Per_100000_Person_Urban double,
KK_Symptoms_Of_Chronic_Illness_Per_100000_Male_Total double,
KK_Symptoms_Of_Chronic_Illness_Per_100000_Male_Rural double,
KK_Symptoms_Of_Chronic_Illness_Per_100000_Male_Urban double,
KK_Symptoms_Of_Chronic_Illness_Per_100000_Female_Total double,
KK_Symptoms_Of_Chronic_Illness_Per_100000_Female_Rural double,
KK_Symptoms_Of_Chronic_Illness_Per_100000_Female_Urban double,
KK_Chronic_Illness_And_Sought_Medical_Care_Person_Total double,
KK_Chronic_Illness_And_Sought_Medical_Care_Person_Rural double,
KK_Chronic_Illness_And_Sought_Medical_Care_Person_Urban double,
KK_Chronic_Illness_And_Sought_Medical_Care_Male_Total double,
KK_Chronic_Illness_And_Sought_Medical_Care_Male_Rural double,
KK_Chronic_Illness_And_Sought_Medical_Care_Male_Urban double,
KK_Chronic_Illness_And_Sought_Medical_Care_Female_Total double,
KK_Chronic_Illness_And_Sought_Medical_Care_Female_Rural double,
KK_Chronic_Illness_And_Sought_Medical_Care_Female_Urban double,
KK_Diag_For_Chronic_Ill_Per_100000_Diabetes_Person_Total double,
KK_Diag_For_Chronic_Ill_Per_100000_Diabetes_Person_Rural double,
KK_Diag_For_Chronic_Ill_Per_100000_Diabetes_Person_Urban double,
KK_Diag_For_Chronic_Ill_Per_100000_Diabetes_Male_Total double,
KK_Diag_For_Chronic_Ill_Per_100000_Diabetes_Male_Rural double,
KK_Diag_For_Chronic_Ill_Per_100000_Diabetes_Male_Urban double,
KK_Diag_For_Chronic_Ill_Per_100000_Diabetes_Female_Total double,
KK_Diag_For_Chronic_Ill_Per_100000_Diabetes_Female_Rural double,
KK_Diag_For_Chronic_Ill_Per_100000_Diabetes_Female_Urban double,
KK_Diag_For_Chronic_Ill_Per_100000_Hypertension_Person_Total double,
KK_Diag_For_Chronic_Ill_Per_100000_Hypertension_Person_Rural double,
KK_Diag_For_Chronic_Ill_Per_100000_Hypertension_Person_Urban double,
KK_Diag_For_Chronic_Ill_Per_100000_Hypertension_Male_Total double,
KK_Diag_For_Chronic_Ill_Per_100000_Hypertension_Male_Rural double,
KK_Diag_For_Chronic_Ill_Per_100000_Hypertension_Male_Urban double,
KK_Diag_For_Chronic_Ill_Per_100000_Hypertension_Female_Total double,
KK_Diag_For_Chronic_Ill_Per_100000_Hypertension_Female_Rural double,

KK_Diag_For_Chronic_Ill_Per_100000_Hypertension_Female_Urban double,
KK_Diag_For_Chronic_Ill_Per_100000_Tb_Person_Total double,
KK_Diag_For_Chronic_Ill_Per_100000_Tb_Person_Rural double,
KK_Diag_For_Chronic_Ill_Per_100000_Tb_Person_Urban double,
KK_Diag_For_Chronic_Ill_Per_100000_Tb_Male_Total double,
KK_Diag_For_Chronic_Ill_Per_100000_Tb_Male_Rural double,
KK_Diag_For_Chronic_Ill_Per_100000_Tb_Male_Urban double,
KK_Diag_For_Chronic_Ill_Per_100000_Tb_Female_Total double,
KK_Diagnosed_For_Chronic_Illness_Per_100000_Tb_Female_Rural double,
KK_Diagnosed_For_Chronic_Illness_Per_100000_Tb_Female_Urban double,
KK_Diagnosed_For_Chronic_Illness_Per_100000_Asthma_Person_Total double,
KK_Diagnosed_For_Chronic_Illness_Per_100000_Asthma_Person_Rural double,
KK_Diagnosed_For_Chronic_Illness_Per_100000_Asthma_Person_Urban double,
KK_Diagnosed_For_Chronic_Illness_Per_100000_Asthma_Male_Total double,
KK_Diagnosed_For_Chronic_Illness_Per_100000_Asthma_Male_Rural double,
KK_Diagnosed_For_Chronic_Illness_Per_100000_Asthma_Male_Urban double,
KK_Diagnosed_For_Chronic_Illness_Per_100000_Asthma_Female_Total double,
KK_Diagnosed_For_Chronic_Illness_Per_100000_Asthma_Female_Rural double,
KK_Diagnosed_For_Chronic_Illness_Per_100000_Asthma_Female_Urban double,
KK_Diag_For_Chronic_Illness_Per_100000_Arthritis_Person_Total double,
KK_Diag_For_Chronic_Illness_Per_100000_Arthritis_Person_Rural double,
KK_Diag_For_Chronic_Illness_Per_100000_Arthritis_Person_Urban double,
KK_Diag_For_Chronic_Illness_Per_100000_Arthritis_Male_Total double,
KK_Diag_For_Chronic_Illness_Per_100000_Arthritis_Male_Rural double,
KK_Diag_For_Chronic_Illness_Per_100000_Arthritis_Male_Urban double,
KK_Diag_For_Chronic_Illness_Per_100000_Arthritis_Female_Total double,
KK_Diag_For_Chronic_Illness_Per_100000_Arthritis_Female_Rural double,
KK_Diag_For_Chronic_Illness_Per_100000_Arthritis_Female_Urban double,
KK_Diag_For_Chronic_Illness_Per_100000_Any_Kind_Person_Total double,
KK_Diag_For_Chronic_Illness_Per_100000_Any_Kind_Person_Rural double,
KK_Diag_For_Chronic_Illness_Per_100000_Any_Kind_Of_Person_Urban double,
KK_Diag_For_Chronic_Illness_Per_100000_Any_Kind_Of_Male_Total double,
KK_Diag_For_Chronic_Illness_Per_100000_Any_Kind_Of_Male_Rural double,
KK_Diag_For_Chronic_Illness_Per_100000_Any_Kind_Of_Male_Urban double,
KK_Diag_For_Chronic_Illness_Per_100000_Any_Kind_Of_Female_Total double,
KK_Diag_For_Chronic_Illness_Per_100000_Any_Kind_Of_Female_Rural double,
KK_Diag_For_Chronic_Illness_Per_100000_Any_Kind_Of_Female_Urban double,
KK_Chronic_Illness_And_Getting_Regular_Treatment_Person_Total double,
KK_Chronic_Illness_And_Getting_Regular_Treatment_Person_Rural double,
KK_Chronic_Illness_And_Getting_Regular_Treatment_Person_Urban double,
KK_Chronic_Illness_And_Getting_Regular_Treatment_Male_Total double,
KK_Chronic_Illness_And_Getting_Regular_Treatment_Male_Rural double,

KK_Chronic_Illness_And_Getting_Regular_Treatment_Male_Urban double,
KK_Chronic_Illness_And_Getting_Regular_Treatment_Female_Total double,
KK_Chronic_Illness_And_Getting_Regular_Treatment_Female_Rural double,
KK_Chronic_Illness_And_Getting_Regular_Treatment_Female_Urban double,
KK_Chronic_Ill_And_Getting_Regular_Treatment_Govt_Person_Total double,
KK_Chronic_Ill_And_Getting_Regular_Treatment_Govt_Person_Rural double,
KK_Chronic_Ill_And_Getting_Regular_Treatment_Govt_Person_Urban double,
KK_Chronic_Ill_And_Getting_Regular_Treatment_Govt_Male_Total double,
KK_Chronic_Ill_And_Getting_Regular_Treatment_Govt_Male_Rural double,
KK_Chronic_Ill_And_Getting_Regular_Treatment_Govt_Male_Urban double,
KK_Chronic_Ill_And_Getting_Regular_Treatment_Govt_Female_Total double,
KK_Chronic_Ill_And_Getting_Regular_Treatment_Govt_Female_Rural double,
KK_Chronic_Ill_And_Getting_Regular_Treatment_Govt_Female_Urban double,
LL_Crude_Birth_Rate_Cbr_Total double,
LL_Crude_Birth_Rate_Cbr_Rural double,
LL_Crude_Birth_Rate_Cbr_Urban double,
LL_Natural_Growth_Rate_Total double,
LL_Natural_Growth_Rate_Rural double,
LL_Natural_Growth_Rate_Urban double,
LL_Total_Fertility_Rate_Total double,
LL_Total_Fertility_Rate_Rural double,
LL_Total_Fertility_Rate_Urban double,
LL_Women_20_24_Reporting_Birth_Of_Order_2__Above_Total double,
LL_Women_20_24_Reporting_Birth_Of_Order_2__Above_Rural double,
LL_Women_20_24_Reporting_Birth_Of_Order_2__Above_Urban double,
LL_Women_Reporting_Birth_Of_Order_3__Above_Total double,
LL_Women_Reporting_Birth_Of_Order_3__Above_Rural double,
LL_Women_Reporting_Birth_Of_Order_3__Above_Urban double,
LL_Women_With_Two_Children_Wanting_No_More_Children_Total double,
LL_Women_With_Two_Children_Wanting_No_More_Children_Rural double,
LL_Women_With_Two_Children_Wanting_No_More_Children_Urban double,
LL_Women_15_19_Years_Who_Were_Already_Mothers_Or_Pregnant_Total double,
LL_Women_15_19_Years_Who_Were_Already_Mothers_Or_Pregnant_Rural double,
LL_Women_15_19_Years_Who_Were_Already_Mothers_Or_Pregnant_Urban double,
LL_Median_Age_At_First_Live_Birth_Of_Women_15_49_Years_Total double,
LL_Median_Age_At_First_Live_Birth_Of_Women_15_49_Years_Rural double,
LL_Median_Age_At_First_Live_Birth_Of_Women_15_49_Years_Urban double,
LL_Median_Age_At_First_Live_Birth_Of_Women_25_49_Years_Total double,
LL_Median_Age_At_First_Live_Birth_Of_Women_25_49_Years_Rural double,
LL_Median_Age_At_First_Live_Birth_Of_Women_25_49_Years_Urban double,
LL_Live_Births_Taking_Place_After_An_Interval_Of_36_Months_Total double,
LL_Live_Births_Taking_Place_After_An_Interval_Of_36_Months_Rural double,

LL_Live_Births_Taking_Place_After_An_Interval_Of_36_Months_Urban double,
LL_Mean_Number_Of_Children_Ever_Born_To_Women_15_49_Years_Total double,
LL_Mean_Number_Of_Children_Ever_Born_To_Women_15_49_Years_Rural double,
LL_Mean_Number_Of_Children_Ever_Born_To_Women_15_49_Years_Urban double,
LL_Mean_Number_Of_Children_Surviving_To_Women_15_49_Years_Total double,
LL_Mean_Number_Of_Children_Surviving_To_Women_15_49_Years_Rural double,
LL_Mean_Number_Of_Children_Surviving_To_Women_15_49_Years_Urban double,
LL_Mean_Number_Of_Children_Ever_Born_To_Women_45_49_Years_Total double,
LL_Mean_Number_Of_Children_Ever_Born_To_Women_45_49_Years_Rural double,
LL_Mean_Number_Of_Children_Ever_Born_To_Women_45_49_Years_Urban double,
MM_Pregnancy_To_Women_15_49_Years_Resulting_In_Abortion_Total double,
MM_Pregnancy_To_Women_15_49_Years_Resulting_In_Abortion_Rural double,
MM_Pregnancy_To_Women_15_49_Years_Resulting_In_Abortion_Urban double,
MM_Women_Who_Received_Any_Anc_Before_Abortion_Total double,
MM_Women_Who_Received_Any_Anc_Before_Abortion_Rural double,
MM_Women_Who_Received_Any_Anc_Before_Abortion_Urban double,
MM_Women_Who_Went_For_Ultrasound_Before_Abortion_Total double,
MM_Women_Who_Went_For_Ultrasound_Before_Abortion_Rural double,
MM_Women_Who_Went_For_Ultrasound_Before_Abortion_Urban double,
MM_Average_Month_Of_Pregnancy_At_The_Time_Of_Abortion_Total double,
MM_Average_Month_Of_Pregnancy_At_The_Time_Of_Abortion_Rural double,
MM_Average_Month_Of_Pregnancy_At_The_Time_Of_Abortion_Urban double,
MM_Abortion_Performed_By_Skilled_Health_Personnel_Total double,
MM_Abortion_Performed_By_Skilled_Health_Personnel_Rural double,
MM_Abortion_Performed_By_Skilled_Health_Personnel_Urban double,
MM_Abortion_Taking_Place_In_Institution_Total double,
MM_Abortion_Taking_Place_In_Institution_Rural double,
MM_Abortion_Taking_Place_In_Institution_Urban double,
NN_Current_Usage_Any_Method_Total double,
NN_Current_Usage_Any_Method_Rural double,
NN_Current_Usage_Any_Method_Urban double,
NN_Current_Usage_Any_Modern_Method_Total double,
NN_Current_Usage_Any_Modern_Method_Rural double,
NN_Current_Usage_Any_Modern_Method_Urban double,
NN_Current_Usage_Female_Sterilization_Total double,
NN_Current_Usage_Female_Sterilization_Rural double,
NN_Current_Usage_Female_Sterilization_Urban double,
NN_Current_Usage_Male_Sterilization_Total double,
NN_Current_Usage_Male_Sterilization_Rural double,
NN_Current_Usage_Male_Sterilization_Urban double,
NN_Current_Usage_Copper_T_Iud_Total double,
NN_Current_Usage_Copper_T_Iud_Rural double,

NN_Current_Usage_Copper_T_Iud_Urban double,
NN_Current_Usage_Pills_Total double,
NN_Current_Usage_Pills_Rural double,
NN_Current_Usage_Pills_Urban double,
NN_Current_Usage_Condom_Nirodh_Total double,
NN_Current_Usage_Condom_Nirodh_Rural double,
NN_Current_Usage_Condom_Nirodh_Urban double,
NN_Current_Usage_Emergency_Contraceptive_Pills_Total double,
NN_Current_Usage_Emergency_Contraceptive_Pills_Rural double,
NN_Current_Usage_Emergency_Contraceptive_Pills_Urban double,
NN_Current_Usage_Any_Traditional_Method_Total double,
NN_Current_Usage_Any_Traditional_Method_Rural double,
NN_Current_Usage_Any_Traditional_Method_Urban double,
NN_Current_Usage_Periodic_Abstinence_Total double,
NN_Current_Usage_Periodic_Abstinence_Rural double,
NN_Current_Usage_Periodic_Abstinence_Urban double,
NN_Current_Usage_Withdrawal_Total double,
NN_Current_Usage_Withdrawal_Rural double,
NN_Current_Usage_Withdrawal_Urban double,
NN_Current_Usage_Lam_Total double,
NN_Current_Usage_Lam_Rural double,
NN_Current_Usage_Lam_Urban double,
OO_Unmet_Need_For_Spacing_Total double,
OO_Unmet_Need_For_Spacing_Rural double,
OO_Unmet_Need_For_Spacing_Urban double,
OO_Unmet_Need_For_Limiting_Total double,
OO_Unmet_Need_For_Limiting_Rural double,
OO_Unmet_Need_For_Limiting_Urban double,
OO_Total_Unmet_Need_Total double,
OO_Total_Unmet_Need_Rural double,
OO_Total_Unmet_Need_Urban double,
PP_Married_Pregnant_Women_15_49_Years_Registered_For_Anc_Total double,
PP_Married_Pregnant_Women_15_49_Years_Registered_For_Anc_Rural double,
PP_Married_Pregnant_Women_15_49_Years_Registered_For_Anc_Urban double,
PP_Mothers_Who_Received_Any_Antenatal_Check_Up_Total double,
PP_Mothers_Who_Received_Any_Antenatal_Check_Up_Rural double,
PP_Mothers_Who_Received_Any_Antenatal_Check_Up_Urban double,
PP_Mothers_Who_Had_Antenatal_Check_Up_In_First_Trimester_Total double,
PP_Mothers_Who_Had_Antenatal_Check_Up_In_First_Trimester_Rural double,
PP_Mothers_Who_Had_Antenatal_Check_Up_In_First_Trimester_Urban double,
PP_Mothers_Who_Received_3_Or_More_Antenatal_Care_Total double,
PP_Mothers_Who_Received_3_Or_More_Antenatal_Care_Rural double,

PP_Mothers_Who_Received_3_Or_More_Antenatal_Care_Urban double,
PP_Mothers_Who_Received_At_Least_One_Tt_Injection_Total double,
PP_Mothers_Who_Received_At_Least_One_Tt_Injection_Rural double,
PP_Mothers_Who_Received_At_Least_One_Tt_Injection_Urban double,
PP_Mothers_Who_Consumed_Ifa_For_100_Days_Or_More_Total double,
PP_Mothers_Who_Consumed_Ifa_For_100_Days_Or_More_Rural double,
PP_Mothers_Who_Consumed_Ifa_For_100_Days_Or_More_Urban double,
PP_Mothers_Who_Had_Full_Antenatal_Check_Up_Total double,
PP_Mothers_Who_Had_Full_Antenatal_Check_Up_Rural double,
PP_Mothers_Who_Had_Full_Antenatal_Check_Up_Urban double,
PP_Mothers_Who_Received_Anc_From_Govt_Source_Total double,
PP_Mothers_Who_Received_Anc_From_Govt_Source_Rural double,
PP_Mothers_Who_Received_Anc_From_Govt_Source_Urban double,
PP_Mothers_Whose_Blood_Pressure_Bp_Taken_Total double,
PP_Mothers_Whose_Blood_Pressure_Bp_Taken_Rural double,
PP_Mothers_Whose_Blood_Pressure_Bp_Taken_Urban double,
PP_Mothers_Whose_Blood_Taken_For_Hb_Total double,
PP_Mothers_Whose_Blood_Taken_For_Hb_Rural double,
PP_Mothers_Whose_Blood_Taken_For_Hb_Urban double,
PP_Mothers_Who_Underwent_Ultrasound_Total double,
PP_Mothers_Who_Underwent_Ultrasound_Rural double,
PP_Mothers_Who_Underwent_Ultrasound_Urban double,
QQ_Institutional_Delivery_Total double,
QQ_Institutional_Delivery_Rural double,
QQ_Institutional_Delivery_Urban double,
QQ_Delivery_At_Government_Institution_Total double,
QQ_Delivery_At_Government_Institution_Rural double,
QQ_Delivery_At_Government_Institution_Urban double,
QQ_Delivery_At_Private_Institution_Total double,
QQ_Delivery_At_Private_Institution_Rural double,
QQ_Delivery_At_Private_Institution_Urban double,
QQ_Delivery_At_Home_Total double,
QQ_Delivery_At_Home_Rural double,
QQ_Delivery_At_Home_Urban double,
QQ_Delivery_At_Home_Conducted_By_Skilled_Health_Personnel_Total double,
QQ_Delivery_At_Home_Conducted_By_Skilled_Health_Personnel_Rural double,
QQ_Delivery_At_Home_Conducted_By_Skilled_Health_Personnel_Urban double,
QQ_Safe_Delivery_Total double,
QQ_Safe_Delivery_Rural double,
QQ_Safe_Delivery_Urban double,
QQ_Caesarean_Out_Of_Total_Delivery_In_Government_Total double,
QQ_Caesarean_Out_Of_Total_Delivery_In_Government_Rural double,

QQ_Caesarean_Out_Of_Total_Delivery_In_Government_Urban double,
QQ_Caesarean_Out_Of_Total_Delivery_In_Private_Total double,
QQ_Caesarean_Out_Of_Total_Delivery_In_Private_Rural double,
QQ_Caesarean_Out_Of_Total_Delivery_In_Private_Urban double,
RR_Less_Than_24_Hrs_Stay_In_Institution_After_Delivery_Total double,
RR_Less_Than_24_Hrs_Stay_In_Institution_After_Delivery_Rural double,
RR_Less_Than_24_Hrs_Stay_In_Institution_After_Delivery_Urban double,
RR_Mothers_Who_Received_Within_48_Hrs_Of_Delivery_Total double,
RR_Mothers_Who_Received_Within_48_Hrs_Of_Delivery_Rural double,
RR_Mothers_Who_Received_Within_48_Hrs_Of_Delivery_Urban double,
RR_Mothers_Who_Received_Within_1_Week_Of_Delivery_Total double,
RR_Mothers_Who_Received_Within_1_Week_Of_Delivery_Rural double,
RR_Mothers_Who_Received_Within_1_Week_Of_Delivery_Urban double,
RR_Mothers_Who_Did_Not_Receive_Any_Post_Natal_Check_Up_Total double,
RR_Mothers_Who_Did_Not_Receive_Any_Post_Natal_Check_Up_Rural double,
RR_Mothers_Who_Did_Not_Receive_Any_Post_Natal_Check_Up_Urban double,
RR_New_Borns_Who_Were_Checked_Up_Within_24_Hrs_Of_Birth_Total double,
RR_New_Borns_Who_Were_Checked_Up_Within_24_Hrs_Of_Birth_Rural double,
RR_New_Borns_Who_Were_Checked_Up_Within_24_Hrs_Of_Birth_Urban double,
SS_Availed_Financial_Assistance_For_Delivery_Under_Jsy_Total double,
SS_Availed_Financial_Assistance_For_Delivery_Under_Jsy_Rural double,
SS_Availed_Financial_Assistance_For_Delivery_Under_Jsy_Urban double,
SS_Availed_Financial_Assis_For_Inst_Delivery_Under_Jsy_Total double,
SS_Availed_Financial_Assis_For_Inst_Delivery_Under_Jsy_Rural double,
SS_Availed_Financial_Assis_For_Inst_Delivery_Under_Jsy_Urban double,
SS_Availed_Financial_Assis_For_Govt_Delivery_Under_Jsy_Total double,
SS_Availed_Financial_Assis_For_Govt_Delivery_Under_Jsy_Rural double,
SS_Availed_Financial_Assis_For_Govt_Delivery_Under_Jsy_Urban double,
TT_Children_Aged_12_23_Months_Having_Immunization_Card_Total double,
TT_Children_Aged_12_23_Months_Having_Immunization_Card_Rural double,
TT_Children_Aged_12_23_Months_Having_Immunization_Card_Urban double,
TT_Children_Aged_12_23_Months_Who_Have_Received_Bcg_Total double,
TT_Children_Aged_12_23_Months_Who_Have_Received_Bcg_Rural double,
TT_Children_Aged_12_23_Months_Who_Have_Received_Bcg_Urban double,
TT_Children_12_23_Months_Received_3_Doses_Of_Polio_Vaccine_Total double,
TT_Children_12_23_Months_Received_3_Doses_Of_Polio_Vaccine_Rural double,
TT_Children_12_23_Months_Received_3_Doses_Of_Polio_Vaccine_Urban double,
TT_Children_12_23_Months_Received_3_Doses_Of_Dpt_Vaccine_Total double,
TT_Children_12_23_Months_Received_3_Doses_Of_Dpt_Vaccine_Rural double,
TT_Children_12_23_Months_Received_3_Doses_Of_Dpt_Vaccine_Urban double,
TT_Children_Aged_12_23_Months_Received_Measles_Vaccine_Total double,
TT_Children_Aged_12_23_Months_Received_Measles_Vaccine_Rural double,

TT_Children_Aged_12_23_Months_Received_Measles_Vaccine_Urban double,
TT_Children_Aged_12_23_Months_Fully_Immunized_Total double,
TT_Children_Aged_12_23_Months_Fully_Immunized_Rural double,
TT_Children_Aged_12_23_Months_Fully_Immunized_Urban double,
TT_Children_Who_Have_Received_Polio_Dose_At_Birth_Total double,
TT_Children_Who_Have_Received_Polio_Dose_At_Birth_Rural double,
TT_Children_Who_Have_Received_Polio_Dose_At_Birth_Urban double,
TT_Children_Who_Did_Not_Receive_Any_Vaccination_Total double,
TT_Children_Who_Did_Not_Receive_Any_Vaccination_Rural double,
TT_Children_Who_Did_Not_Receive_Any_Vaccination_Urban double,
TT_Children_6_35_Mon_At_Least_1_Vit_A_Dose_Last_6_Months_Total double,
TT_Children_6_35_Mon_At_Least_1_Vit_A_Dose_Last_6_Months_Rural double,
TT_Children_6_35_Mon_At_Least_1_Vit_A_Dose_Last_6_Months_Urban double,
TT_Children_6_35_Mon_Ifa_Tablets_Syrup_Last_3_Months_Total double,
TT_Children_6_35_Mon_Ifa_Tablets_Syrup_Last_3_Months_Rural double,
TT_Children_6_35_Mon_Ifa_Tablets_Syrup_Last_3_Months_Urban double,
TT_Children_Whose_Birth_Weight_Was_Taken_Total double,
TT_Children_Whose_Birth_Weight_Was_Taken_Rural double,
TT_Children_Whose_Birth_Weight_Was_Taken_Urban double,
TT_Children_With_Birth_Weight_Less_Than_2_5_Kg_Total double,
TT_Children_With_Birth_Weight_Less_Than_2_5_Kg_Rural double,
TT_Children_With_Birth_Weight_Less_Than_2_5_Kg_Urban double,
UU_Children_Suffering_From_Diarrhoea_Total double,
UU_Children_Suffering_From_Diarrhoea_Rural double,
UU_Children_Suffering_From_Diarrhoea_Urban double,
UU_Children_Diarrhoea_Who_Received_Haf_Ors_Ort_Total double,
UU_Children_Diarrhoea_Who_Received_Haf_Ors_Ort_Rural double,
UU_Children_Diarrhoea_Who_Received_Haf_Ors_Ort_Urban double,
UU_Children_Suffering_From_Acute_Respiratory_Infection_Total double,
UU_Children_Suffering_From_Acute_Respiratory_Infection_Rural double,
UU_Children_Suffering_From_Acute_Respiratory_Infection_Urban double,
UU_Children_Acute_Respiratory_Infection_Sought_Treatment_Total double,
UU_Children_Acute_Respiratory_Infection_Sought_Treatment_Rural double,
UU_Children_Acute_Respiratory_Infection_Sought_Treatment_Urban double,
UU_Children_Suffering_From_Fever_Total double,
UU_Children_Suffering_From_Fever_Rural double,
UU_Children_Suffering_From_Fever_Urban double,
UU_Children_Suffering_From_Fever_Who_Sought_Treatment_Total double,
UU_Children_Suffering_From_Fever_Who_Sought_Treatment_Rural double,
UU_Children_Suffering_From_Fever_Who_Sought_Treatment_Urban double,
VV_Children_Breastfed_Within_One_Hour_Of_Birth_Total double,
VV_Children_Breastfed_Within_One_Hour_Of_Birth_Rural double,

VV_Children_Breastfed_Within_One_Hour_Of_Birth_Urban double,
VV_Children_6_35_Mon_Excl_Breastfed_For_At_Least_6_Mon_Total double,
VV_Children_6_35_Mon_Excl_Breastfed_For_At_Least_6_Mon_Rural double,
VV_Children_6_35_Mon_Excl_Breastfed_For_At_Least_6_Mon_Urban double,
VV_Other_Than_Breast_Milk_During_First_6_Months_Water_Total double,
VV_Other_Than_Breast_Milk_During_First_6_Months_Water_Rural double,
VV_Other_Than_Breast_Milk_During_First_6_Months_Water_Urban double,
VV_1st_6_Months_Animal_Formula_Milk_Total double,
VV_1st_6_Months_Animal_Formula_Milk_Rural double,
VV_1st_6_Months_Animal_Formula_Milk_Urban double,
VV_1st_6_Months_Semi_Solid_Mashed_Food_Total double,
VV_1st_6_Months_Semi_Solid_Mashed_Food_Rural double,
VV_1st_6_Months_Semi_Solid_Mashed_Food_Urban double,
VV_1st_6_Months_Solid_Adult_Food_Total double,
VV_1st_6_Months_Solid_Adult_Food_Rural double,
VV_1st_6_Months_Solid_Adult_Food_Urban double,
VV_1st_6_Months_Vegetables_Fruits_Total double,
VV_1st_6_Months_Vegetables_Fruits_Rural double,
VV_1st_6_Months_Vegetables_Fruits_Urban double,
VV_Avg_Month_Other_Than_Breast_Milk_Water_Total double,
VV_Avg_Month_Other_Than_Breast_Milk_Water_Rural double,
VV_Avg_Month_Other_Than_Breast_Milk_Water_Urban double,
VV_Avg_Month_Other_Than_Breast_Milk_Animal_Formula_Milk_Total double,
VV_Avg_Month_Other_Than_Breast_Milk_Animal_Formula_Milk_Rural double,
VV_Avg_Month_Other_Than_Breast_Milk_Animal_Formula_Milk_Urban double,
VV_Avg_Month_Other_Than_Breast_Milk_Semi_Solid_Mashed_Food_Total double,
VV_Avg_Month_Other_Than_Breast_Milk_Semi_Solid_Mashed_Food_Rural double,
VV_Avg_Month_Other_Than_Breast_Milk_Semi_Solid_Mashed_Food_Urban double,
VV_Avg_Month_Other_Than_Breast_Milk_Solid_Adult_Food_Total double,
VV_Avg_Month_Other_Than_Breast_Milk_Solid_Adult_Food_Rural double,
VV_Avg_Month_Other_Than_Breast_Milk_Solid_Adult_Food_Urban double,
VV_Avg_Month_Other_Than_Breast_Milk_Vegetables_Fruits_Total double,
VV_Avg_Month_Other_Than_Breast_Milk_Vegetables_Fruits_Rural double,
VV_Avg_Month_Other_Than_Breast_Milk_Vegetables_Fruits_Urban double,
WW_Birth_Registered_Total double,
WW_Birth_Registered_Rural double,
WW_Birth_Registered_Urban double,
WW_Children_Registered_And_Received_Birth_Certificate_Total double,
WW_Children_Registered_And_Received_Birth_Certificate_Rural double,
WW_Children_Registered_And_Received_Birth_Certificate_Urban double,
XX_Women_Who_Are_Aware_Of_Hiv_Aids_Total double,
XX_Women_Who_Are_Aware_Of_Hiv_Aids_Rural double,

XX_Women_Who_Are_Aware_Of_Hiv_Aids_Urban double,
XX_Women_Who_Are_Aware_Of_Rti_Sti_Total double,
XX_Women_Who_Are_Aware_Of_Rti_Sti_Rural double,
XX_Women_Who_Are_Aware_Of_Rti_Sti_Urban double,
XX_Women_Who_Are_Aware_Of_Haf_Ors_Ort_Zinc_Total double,
XX_Women_Who_Are_Aware_Of_Haf_Ors_Ort_Zinc_Rural double,
XX_Women_Who_Are_Aware_Of_Haf_Ors_Ort_Zinc_Urban double,
XX_Women_Who_Are_Aware_Of_Danger_Signs_Of_Ari_Pneumonia_Total double,
XX_Women_Who_Are_Aware_Of_Danger_Signs_Of_Ari_Pneumonia_Rural double,
XX_Women_Who_Are_Aware_Of_Danger_Signs_Of_Ari_Pneumonia_Urban double,
YY_Crude_Death_Rate_Cdr_Total_Person double,
YY_Crude_Death_Rate_Cdr_Total_Male double,
YY_Crude_Death_Rate_Cdr_Total_Female double,
YY_Crude_Death_Rate_Cdr_Rural_Person double,
YY_Crude_Death_Rate_Cdr_Rural_Male double,
YY_Crude_Death_Rate_Cdr_Rural_Female double,
YY_Crude_Death_Rate_Cdr_Urban_Person double,
YY_Crude_Death_Rate_Cdr_Urban_Male double,
YY_Crude_Death_Rate_Cdr_Urban_Female double,
YY_Infant_Mortality_Rate_Imr_Total_Person double,
YY_Infant_Mortality_Rate_Imr_Total_Male double,
YY_Infant_Mortality_Rate_Imr_Total_Female double,
YY_Infant_Mortality_Rate_Imr_Rural_Person double,
YY_Infant_Mortality_Rate_Imr_Rural_Male double,
YY_Infant_Mortality_Rate_Imr_Rural_Female double,
YY_Infant_Mortality_Rate_Imr_Urban_Person double,
YY_Infant_Mortality_Rate_Imr_Urban_Male double,
YY_Infant_Mortality_Rate_Imr_Urban_Female double,
YY_Neo_Natal_Mortality_Rate_Total double,
YY_Neo_Natal_Mortality_Rate_Rural double,
YY_Neo_Natal_Mortality_Rate_Urban double,
YY_Post_Neo_Natal_Mortality_Rate_Total double,
YY_Post_Neo_Natal_Mortality_Rate_Rural double,
YY_Post_Neo_Natal_Mortality_Rate_Urban double,
YY_Under_Five_Mortality_Rate_U5MR_Total_Person double,
YY_Under_Five_Mortality_Rate_U5MR_Total_Male double,
YY_Under_Five_Mortality_Rate_U5MR_Total_Female double,
YY_Under_Five_Mortality_Rate_U5MR_Rural_Person double,
YY_Under_Five_Mortality_Rate_U5MR_Rural_Male double,
YY_Under_Five_Mortality_Rate_U5MR_Rural_Female double,
YY_Under_Five_Mortality_Rate_U5MR_Urban_Person double,
YY_Under_Five_Mortality_Rate_U5MR_Urban_Male double,

```
YY_Under_Five_Mortality_Rate_U5MR_Urban_Female double,
ZZ_Crude_Birth_Rate_Total_Lower_Limit double,
ZZ_Crude_Birth_Rate_Total_Upper_Limit double,
ZZ_Crude_Birth_Rate_Rural_Lower_Limit double,
ZZ_Crude_Birth_Rate_Rural_Upper_Limit double,
ZZ_Crude_Birth_Rate_Urban_Lower_Limit double,
ZZ_Crude_Birth_Rate_Urban_Upper_Limit double,
ZZ_Crude_Death_Rate_Total_Lower_Limit double,
ZZ_Crude_Death_Rate_Total_Upper_Limit double,
ZZ_Crude_Death_Rate_Rural_Lower_Limit double,
ZZ_Crude_Death_Rate_Rural_Upper_Limit double,
ZZ_Crude_Death_Rate_Urban_Lower_Limit double,
ZZ_Crude_Death_Rate_Urban_Upper_Limit double,
ZZ_Infant_Mortality_Rate_Total_Lower_Limit double,
ZZ_Infant_Mortality_Rate_Total_Upper_Limit double,
ZZ_Infant_Mortality_Rate_Rural_Lower_Limit double,
ZZ_Infant_Mortality_Rate_Rural_Upper_Limit double,
ZZ_Infant_Mortality_Rate_Urban_Lower_Limit double,
ZZ_Infant_Mortality_Rate_Urban_Upper_Limit double,
ZZ_Under_Five_Mortality_Rate_U5MR_Total_Lower_Limit double,
ZZ_Under_Five_Mortality_Rate_U5MR_Total_Upper_Limit double,
ZZ_Under_Five_Mortality_Rate_U5MR_Rural_Lower_Limit double,
ZZ_Under_Five_Mortality_Rate_U5MR_Rural_Upper_Limit double,
ZZ_Under_Five_Mortality_Rate_U5MR_Urban_Lower_Limit double,
ZZ_Under_Five_Mortality_Rate_U5MR_Urban_Upper_Limit double,
ZZ_Sex_Ratio_At_Birth_Total_Lower_Limit double,
ZZ_Sex_Ratio_At_Birth_Total_Upper_Limit double,
ZZ_Sex_Ratio_At_Birth_Rural_Lower_Limit double,
ZZ_Sex_Ratio_At_Birth_Rural_Upper_Limit double,
ZZ_Sex_Ratio_At_Birth_Urban_Lower_Limit double,
ZZ_Sex_Ratio_At_Birth_Urban_Upper_Limit double) row format delimited fields terminated
by ','
location 's3a://utk-hive/data';
```

2. **Command to load the ingested data into the external table**

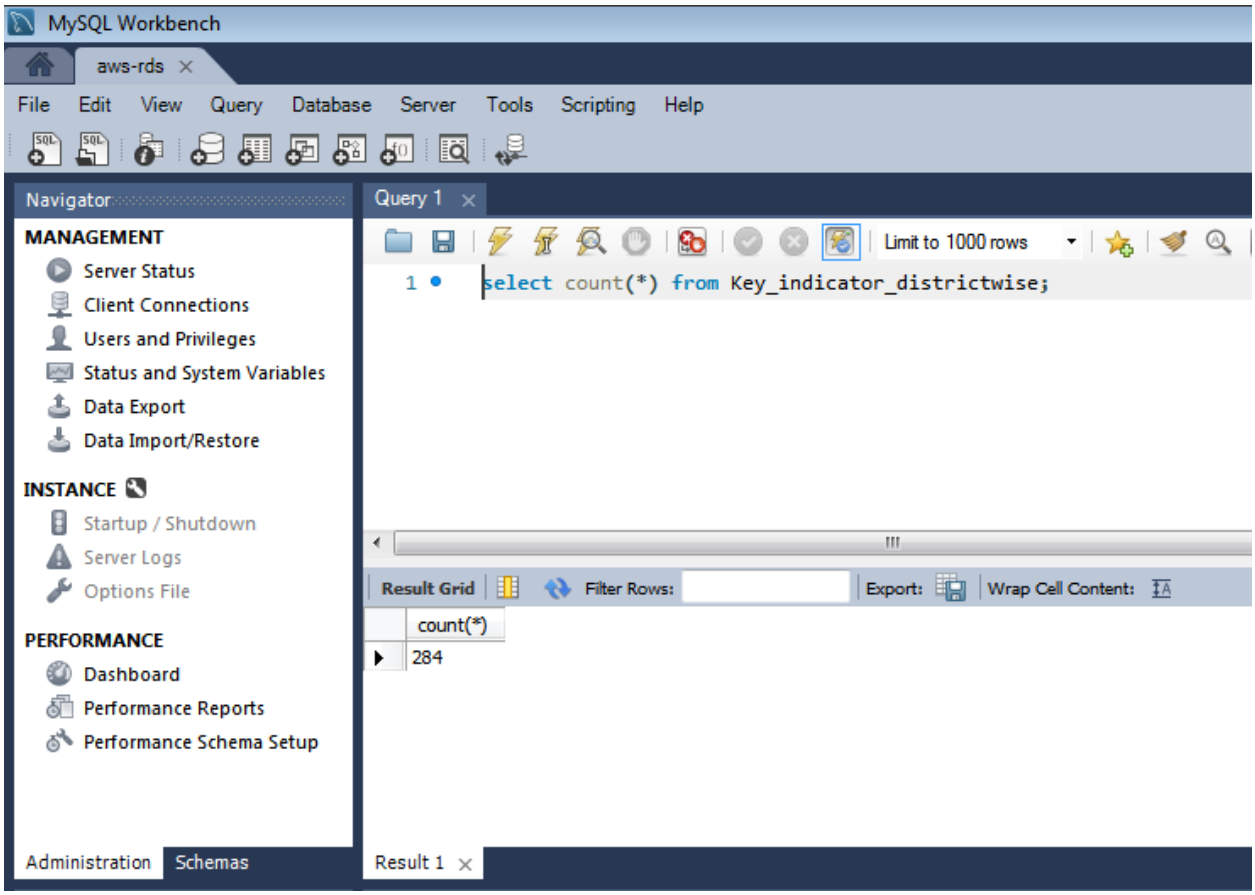
```
load data inpath '/user/root/caseStudy_etl/Key_indicator_districtwise' overwrite into table
Key_indicator_districtwise_extern1;
```

3. Queries to verify that the ingestion is correctly accomplished

a. Query to count the total number of rows along with the screenshots of the data fetched by the query on MySQL Workbench and Hue

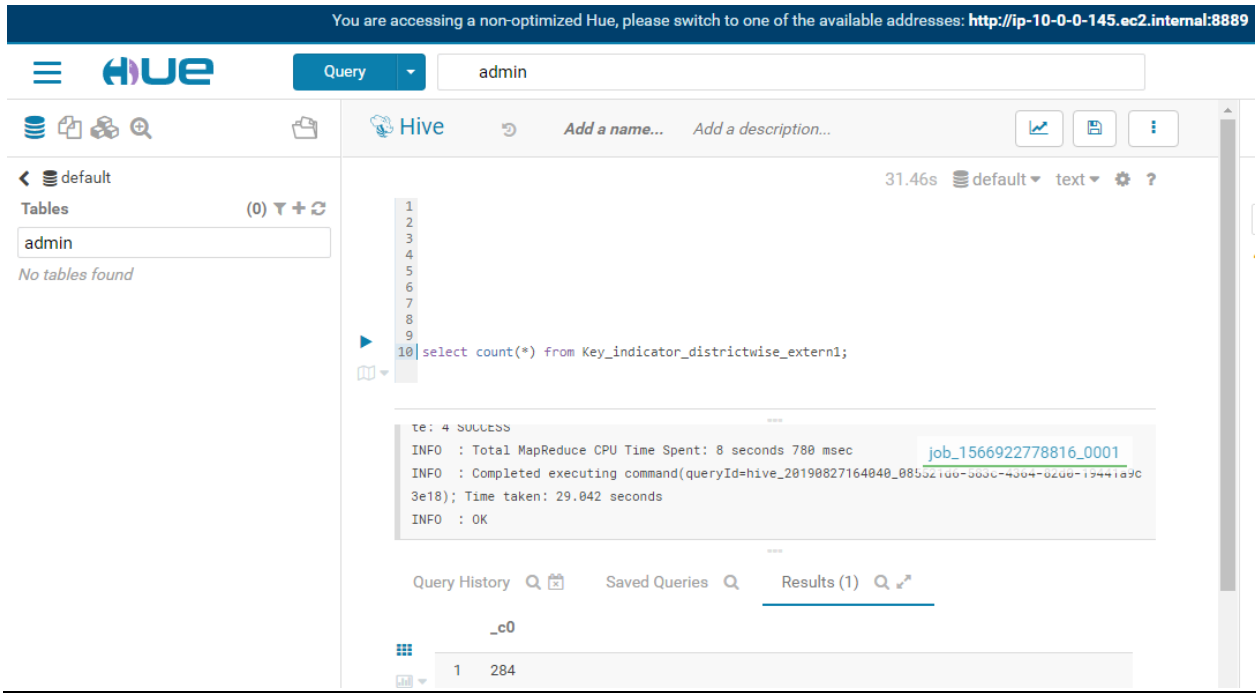
<u>MySQL Workbench:-</u>

select count(*) from Key_indicator_districtwise;



Hue:-

select count(*) from Key_indicator_districtwise_extern1;



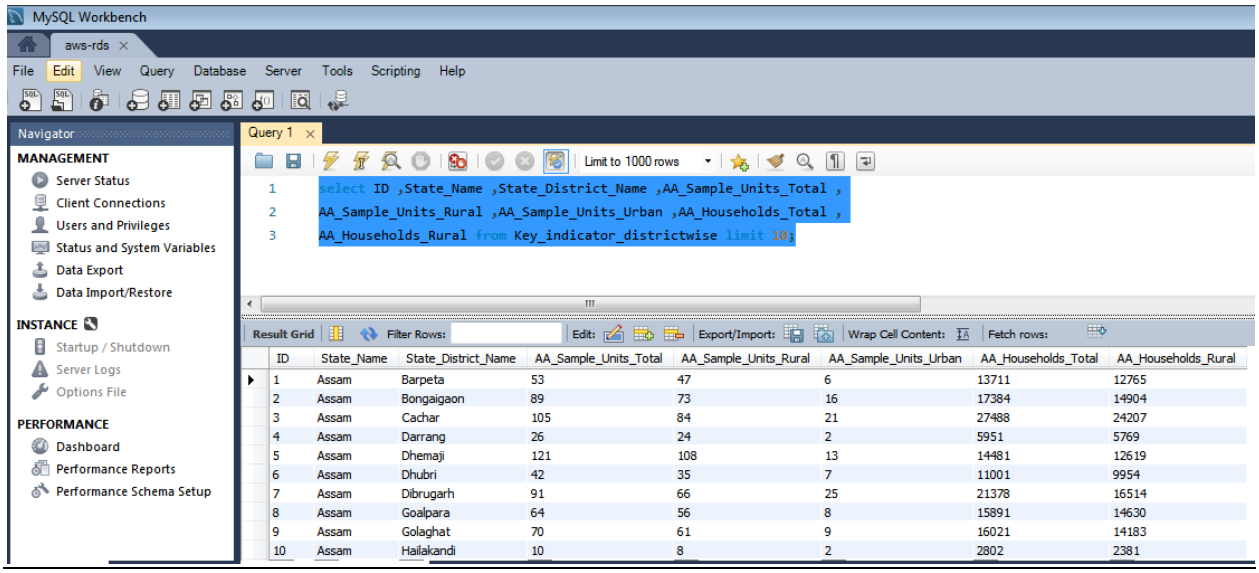
b. Query to select the top 10 rows and first 8 columns along with the screenshots of the data fetched by the query on MySQL Workbench and Hue

Query for MySQL Workbench:

select ID ,State_Name ,State_District_Name ,AA_Sample_Units_Total ,

AA_Sample_Units_Rural ,AA_Sample_Units_Urban ,AA_Households_Total ,

AA_Households_Rural from Key_indicator_districtwise limit 10;

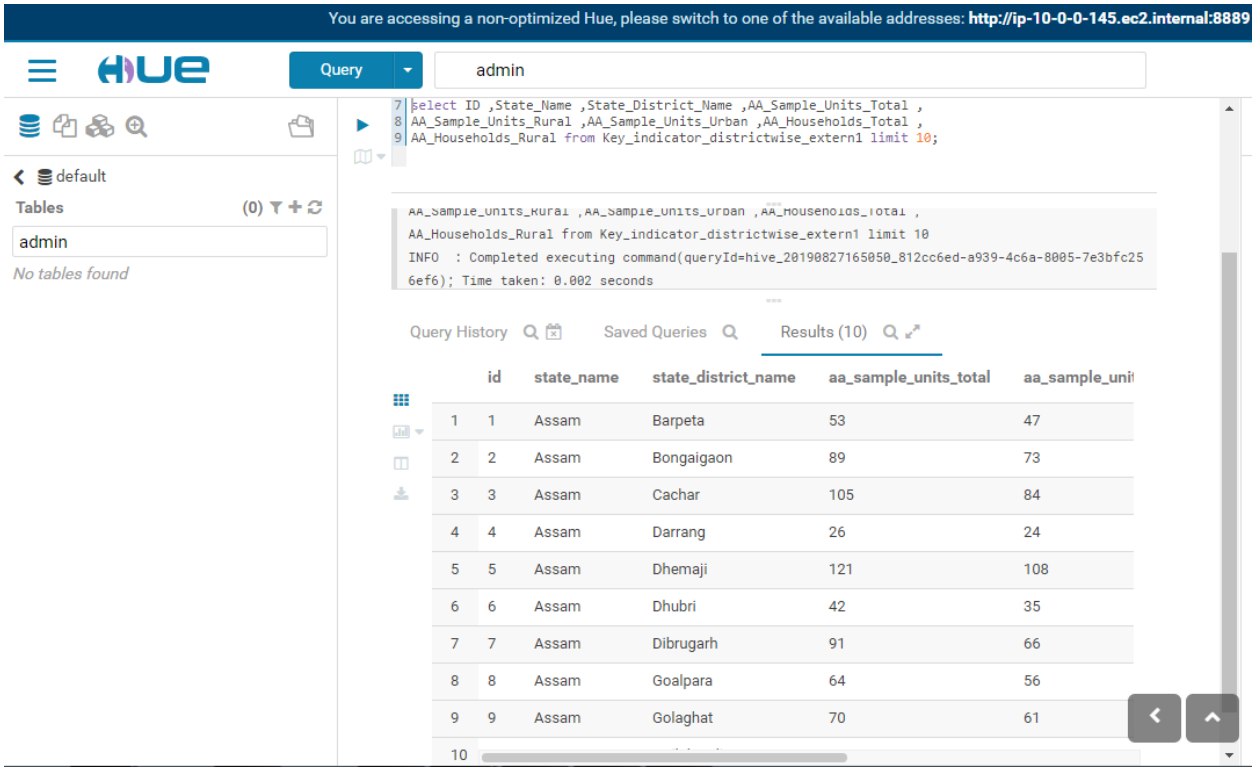


Query for Hue:

select ID ,State_Name ,State_District_Name ,AA_Sample_Units_Total ,

AA_Sample_Units_Rural ,AA_Sample_Units_Urban ,AA_Households_Total ,

AA_Households_Rural from Key_indicator_districtwise_extern1 limit 10;



Subset schema creation in Hive to support the analyses

1. **Columns used in the subset schema**

   YY_Under_Five_Mortality_Rate_U5MR_Total_Person
   State_Name
   LL_Total_Fertility_Rate_Total
   State_District_Name
   AA_Population_Total
   AA_Households_Total
   CC_Sex_Ratio_All_Ages_Total
   BB_Average_Household_Size_All_Total

2. Storage format used

ORC format

3. You are also expected to benchmark the performance of Hive-Hbase integrated table. Compare the runtimes of the queries in step 2 for the integrated table and the storage format chosen in step 2.

Query	Integrated table	Orc table
select count(*) from <Table Name>;	29.676	26.006 sec
select State_Name, count(*) from <Table Name> group by State_Name;	31.386	27.574 sec
select * from <Table Name> where State_Name = 'Uttar Pradesh';]	24.939	18.685 sec

4. Create and insert command for the default format

```
CREATE TABLE Key_indicator_districtwise_txt(
YY_Under_Five_Mortality_Rate_U5MR_Total_Person double,
LL_Total_Fertility_Rate_Total double,
BB_Average_Household_Size_All_Total double,
CC_Sex_Ratio_All_Ages_Total double,
State_Name string,
State_District_Name string,
AA_Population_Total double,
AA_Households_Total double
) STORED AS TEXTFILE;

INSERT INTO Key_indicator_districtwise_txt select
YY_Under_Five_Mortality_Rate_U5MR_Total_Person,LL_Total_Fertility_Rate_Total,BB_Average
```

_Household_Size_All_Total,CC_Sex_Ratio_All_Ages_Total,State_Name,State_District_Name,AA_Population_Total,AA_Households_Total from Key_indicator_districtwise_extern1;

5) Create and insert command for the formats such as ORC

```
CREATE TABLE Key_indicator_districtwise_orc(
YY_Under_Five_Mortality_Rate_U5MR_Total_Person double,
LL_Total_Fertility_Rate_Total double,
BB_Average_Household_Size_All_Total double,
CC_Sex_Ratio_All_Ages_Total double,
State_Name string,
State_District_Name string,
AA_Population_Total double,
AA_Households_Total double
) STORED AS ORC;

INSERT INTO Key_indicator_districtwise_orc select
YY_Under_Five_Mortality_Rate_U5MR_Total_Person,LL_Total_Fertility_Rate_Total,BB_Average_Household_Size_All_Total,CC_Sex_Ratio_All_Ages_Total,State_Name,State_District_Name,AA_Population_Total,AA_Households_Total from Key_indicator_districtwise_extern1;
```

6) Create and insert command for the Hive-HBase integrated table

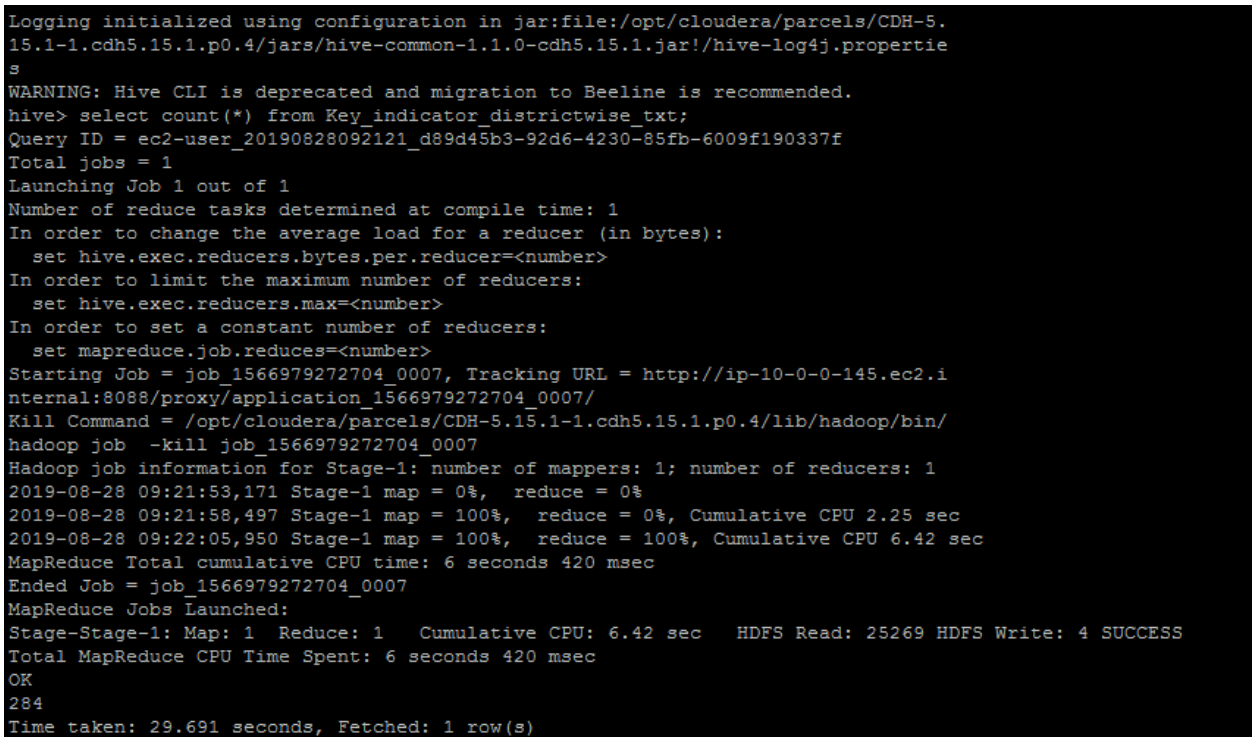
```
create table Key_indicator_districtwise_hbase(`ID` int,
`YY_Under_Five_Mortality_Rate_U5MR_Total_Person` double,
`LL_Total_Fertility_Rate_Total` double,
`BB_Average_Household_Size_All_Total` double,
`CC_Sex_Ratio_All_Ages_Total` double,
`State_Name` string,
`State_District_Name` string,
`AA_Population_Total` double,
`AA_Households_Total` double
)
STORED BY 'org.apache.hadoop.hive.hbase.HBaseStorageHandler'
WITH SERDEPROPERTIES ("hbase.columns.mapping" =
":key,cf1:YY_Under_Five_Mortality_Rate_U5MR_Total_Person,cf1:LL_Total_Fertility_Rate_Total,
cf1:BB_Average_Household_Size_All_Total,cf1:CC_Sex_Ratio_All_Ages_Total,cf1:State_Name,cf1:State_District_Name,cf1:AA_Population_Total,cf1:AA_Households_Total")
TBLPROPERTIES ("hbase.table.name" = "Key_indicator_districtwise_hive_hbase_intgrated");

Insert overwrite table Key_indicator_districtwise_hbase
select Key_indicator_districtwise_extern1.ID,
Key_indicator_districtwise_extern1.YY_Under_Five_Mortality_Rate_U5MR_Total_Person,
```

Key_indicator_districtwise_extern1.LL_Total_Fertility_Rate_Total,
Key_indicator_districtwise_extern1.BB_Average_Household_Size_All_Total,
Key_indicator_districtwise_extern1.CC_Sex_Ratio_All_Ages_Total,
Key_indicator_districtwise_extern1.State_Name,
Key_indicator_districtwise_extern1.State_District_Name,Key_indicator_districtwise_extern1.AA_Population_Total,Key_indicator_districtwise_extern1.AA_Households_Total from Key_indicator_districtwise_extern1;

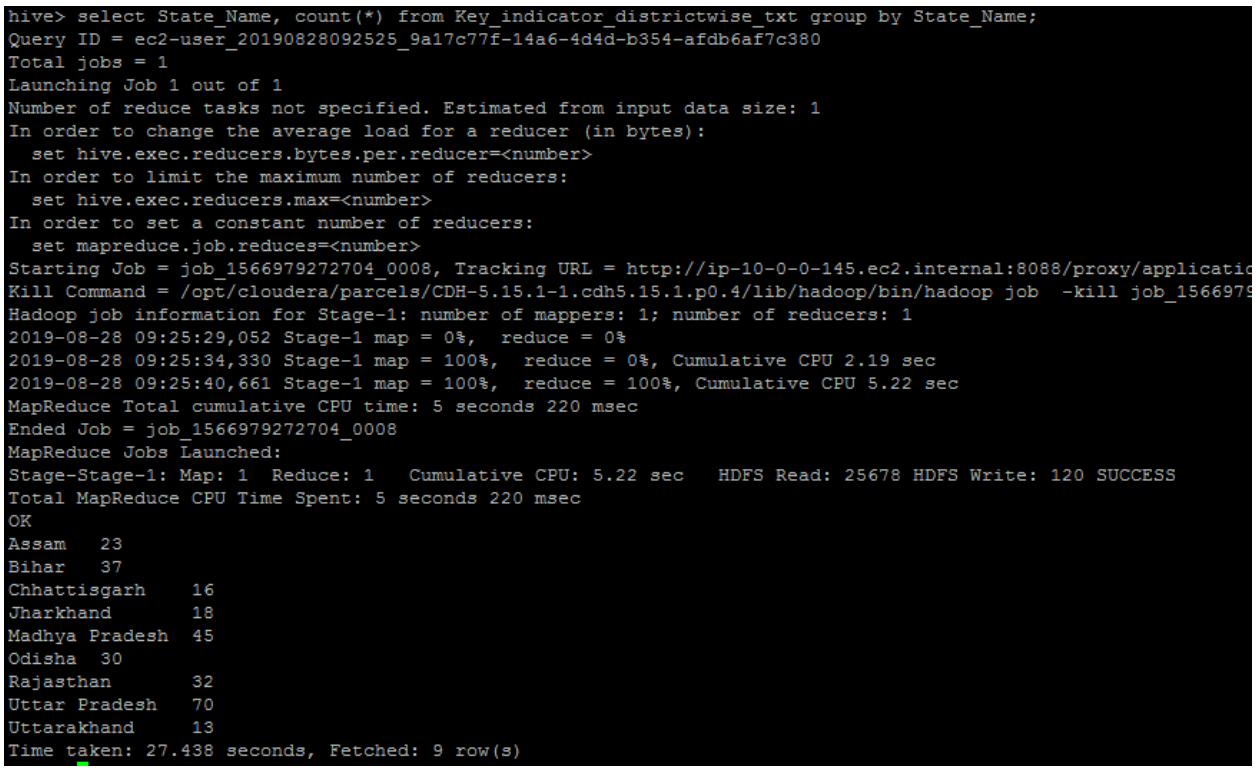
7. Screenshot of runtimes against each query given above for the default format, formats such as ORC format as well as Hive-Hbase integration

select count(*) from Key_indicator_districtwise_txt; -- 29.691 sec

For default format:



select State_Name, count(*) from Key_indicator_districtwise_txt group by State_Name; -- 27.438sec



```
hive> select State_Name, count(*) from Key_indicator_districtwise_txt group by State_Name;
Query ID = ec2-user_20190828092525_9a17c77f-14a6-4d4d-b354-afdb6af7c380
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapreduce.job.reduces=<number>
Starting Job = job_1566979272704_0008, Tracking URL = http://ip-10-0-0-145.ec2.internal:8088/proxy/applicatio
Kill Command = /opt/cloudera/parcels/CDH-5.15.1-1.cdh5.15.1.p0.4/lib/hadoop/bin/hadoop job  -kill job_156697
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2019-08-28 09:25:29,052 Stage-1 map = 0%,  reduce = 0%
2019-08-28 09:25:34,330 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 2.19 sec
2019-08-28 09:25:40,661 Stage-1 map = 100%,  reduce = 100%, Cumulative CPU 5.22 sec
MapReduce Total cumulative CPU time: 5 seconds 220 msec
Ended Job = job_1566979272704_0008
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1  Reduce: 1   Cumulative CPU: 5.22 sec   HDFS Read: 25678 HDFS Write: 120 SUCCESS
Total MapReduce CPU Time Spent: 5 seconds 220 msec
OK
Assam   23
Bihar   37
Chhattisgarh    16
Jharkhand       18
Madhya Pradesh  45
Odisha  30
Rajasthan       32
Uttar Pradesh   70
Uttarakhand     13
Time taken: 27.438 seconds, Fetched: 9 row(s)
```

select * from Key_indicator_districtwise_txt where State_Name = "Uttar Pradesh"; -- 20.899 sec

```
hive> select * from Key_indicator_districtwise_txt where State_Name = "Uttar Pradesh";
Query ID = ec2-user_20190828092727_2769f101-4b13-4136-972d-a6da4ce75eb1
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks is set to 0 since there's no reduce operator
Starting Job = job_1566979272704_0009, Tracking URL = http://ip-10-0-0-145.ec2.internal:8088/proxy/applic
Kill Command = /opt/cloudera/parcels/CDH-5.15.1-1.cdh5.15.1.p0.4/lib/hadoop/bin/hadoop job  -kill job_156
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 0
2019-08-28 09:27:36,572 Stage-1 map = 0%,  reduce = 0%
2019-08-28 09:27:44,084 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 3.32 sec
MapReduce Total cumulative CPU time: 3 seconds 320 msec
Ended Job = job_1566979272704_0009
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1   Cumulative CPU: 3.32 sec   HDFS Read: 22044 HDFS Write: 4329 SUCCESS
Total MapReduce CPU Time Spent: 3 seconds 320 msec
OK
69.0    3.02    5.97    873.47  Uttar Pradesh   Agra    125614.0        20911.0
90.0    3.53    5.96    910.76  Uttar Pradesh   Aligarh 52583.0 8844.0
104.0   3.16    5.27    1016.34 Uttar Pradesh   Allahabad       61029.0 11563.0
78.0    3.03    5.62    1114.48 Uttar Pradesh   Ambedkar Nagar  44698.0 7923.0
84.0    3.47    4.99    875.68  Uttar Pradesh   Auraiya 107619.0        21590.0
89.0    3.15    6.1     1104.91 Uttar Pradesh   Azamgarh        103165.0        16962.0
70.0    3.03    6.13    859.29  Uttar Pradesh   Baghpat 95759.0 15648.0
105.0   4.87    5.29    896.37  Uttar Pradesh   Bahraich        121402.0        22906.0
82.0    2.97    5.63    992.82  Uttar Pradesh   Ballia  87623.0 15606.0
117.0   4.94    5.74    1040.09 Uttar Pradesh   Balrampur       42016.0 7315.0
96.0    4.13    4.95    925.05  Uttar Pradesh   Banda   59266.0 11915.0
97.0    3.85    5.23    895.18  Uttar Pradesh   Barabanki       58722.0 11232.0
104.0   3.64    5.75    887.13  Uttar Pradesh   Bareilly        78492.0 13678.0
106.0   3.47    5.74    1067.67 Uttar Pradesh   Basti   48055.0 8393.0
79.0    3.23    5.62    963.34  Uttar Pradesh   Bijnor  49416.0 8748.0
108.0   4.48    5.77    915.88  Uttar Pradesh   Budaun  51993.0 8999.0
89.0    3.44    5.65    912.0   Uttar Pradesh   Bulandshahar    59473.0 10578.0
98.0    3.29    5.77    993.76  Uttar Pradesh   Chandauli       92389.0 15936.0
119.0   3.6     5.24    910.69  Uttar Pradesh   Chitrakoot      88832.0 16937.0
```

```
58.0    2.23    4.98    898.35  Uttar Pradesh   Lucknow 105538.0        21138.0
96.0    3.23    5.29    1133.13 Uttar Pradesh   Maharajganj     68263.0 12950.0
73.0    3.55    4.75    887.27  Uttar Pradesh   Mahoba  63537.0 13461.0
78.0    3.37    5.69    885.2   Uttar Pradesh   Mainpuri        60823.0 10727.0
58.0    2.98    5.77    876.42  Uttar Pradesh   Mathura 59930.0 10406.0
86.0    2.86    5.95    1038.26 Uttar Pradesh   Mau     74750.0 12606.0
59.0    3.07    6.01    900.55  Uttar Pradesh   Meerut  77688.0 12884.0
105.0   2.57    5.72    962.7   Uttar Pradesh   Mirzapur        38180.0 6709.0
80.0    3.61    6.01    902.28  Uttar Pradesh   Moradabad       66632.0 11054.0
71.0    3.22    5.89    888.14  Uttar Pradesh   Muzaffarnagar   75749.0 12812.0
91.0    3.56    5.54    880.49  Uttar Pradesh   Pilibhit        43038.0 7773.0
104.0   2.9     5.54    1142.93 Uttar Pradesh   Pratapgarh      86770.0 15695.0
80.0    3.29    5.17    946.64  Uttar Pradesh   Rae Bareli      66935.0 12981.0
86.0    3.48    5.8     904.74  Uttar Pradesh   Rampur  66460.0 11435.0
99.0    3.31    5.71    919.02  Uttar Pradesh   Saharanpur      58510.0 10259.0
91.0    3.84    5.43    1174.95 Uttar Pradesh   Sant Kabir Nagar        43549.0 8028.0
106.0   2.88    6.21    998.61  Uttar Pradesh   Sant Ravidas Nagar (Bhadohi)    55736.0
100.0   4.17    5.63    853.67  Uttar Pradesh   Shahjahanpur    55307.0 9822.0
130.0   5.52    5.09    983.63  Uttar Pradesh   Shrawasti       38131.0 7483.0
116.0   4.82    5.63    1178.11 Uttar Pradesh   Siddharthnagar  56238.0 9919.0
114.0   4.42    5.38    882.49  Uttar Pradesh   Sitapur 50237.0 9323.0
99.0    3.78    4.92    952.06  Uttar Pradesh   Sonbhadra       33562.0 6838.0
66.0    3.03    5.5     984.1   Uttar Pradesh   Sultanpur       61923.0 11251.0
83.0    3.08    4.92    887.85  Uttar Pradesh   Unnao   69686.0 14128.0
90.0    2.32    5.68    921.53  Uttar Pradesh   Varanasi        86266.0 14974.0
Time taken: 20.889 seconds, Fetched: 70 row(s)
```

For ORC format:-

select count(*) from Key_indicator_districtwise_orc; **-- 26.006 sec**

```
hive> select count(*) from Key_indicator_districtwise_orc;
Query ID = ec2-user_20190828093333_6ea2c965-62f1-4982-8eff-a4ff57ca1871
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks determined at compile time: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapreduce.job.reduces=<number>
Starting Job = job_1566979272704_0010, Tracking URL = http://ip-10-0-0-145
Kill Command = /opt/cloudera/parcels/CDH-5.15.1-1.cdh5.15.1.p0.4/lib/hadoo
Hadoop job information for Stage-1: number of mappers: 1; number of reduce
2019-08-28 09:33:13,293 Stage-1 map = 0%,  reduce = 0%
2019-08-28 09:33:20,685 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 2
2019-08-28 09:33:26,932 Stage-1 map = 100%,  reduce = 100%, Cumulative CPU
MapReduce Total cumulative CPU time: 5 seconds 840 msec
Ended Job = job_1566979272704_0010
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1  Reduce: 1   Cumulative CPU: 5.84 sec   HDFS Read: 2
Total MapReduce CPU Time Spent: 5 seconds 840 msec
OK
284
Time taken: 26.006 seconds, Fetched: 1 row(s)
```

select State_Name, count(*) from Key_indicator_districtwise_orc group by State_Name; --27.574

```
hive> select State_Name, count(*) from Key_indicator_districtwise_orc group by State_Name;
Query ID = ec2-user_20190828093434_2a08ac71-19a6-4d87-bea3-e67b347b31f2
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapreduce.job.reduces=<number>
Starting Job = job_1566979272704_0011, Tracking URL = http://ip-10-0-0-145.ec2.internal:8088/proxy/a
Kill Command = /opt/cloudera/parcels/CDH-5.15.1-1.cdh5.15.1.p0.4/lib/hadoop/bin/hadoop job  -kill jo
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2019-08-28 09:34:41,164 Stage-1 map = 0%,  reduce = 0%
2019-08-28 09:34:46,389 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 2.77 sec
2019-08-28 09:34:53,780 Stage-1 map = 100%,  reduce = 100%, Cumulative CPU 5.91 sec
MapReduce Total cumulative CPU time: 5 seconds 910 msec
Ended Job = job_1566979272704_0011
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1  Reduce: 1   Cumulative CPU: 5.91 sec   HDFS Read: 24511 HDFS Write: 120 SUCCE
Total MapReduce CPU Time Spent: 5 seconds 910 msec
OK
Assam   23
Bihar   37
Chhattisgarh    16
Jharkhand       18
Madhya Pradesh  45
Odisha  30
Rajasthan       32
Uttar Pradesh   70
Uttarakhand     13
Time taken: 27.574 seconds, Fetched: 9 row(s)
hive>
```

select * from Key_indicator_districtwise_orc where State_Name = "Uttar Pradesh"; --18.685 sec

```
hive> select * from Key_indicator_districtwise_orc where State_Name = "Uttar Pradesh";
Query ID = ec2-user_20190828093737_2511c7f5-dbc0-4820-85c6-1d7d7915b515
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks is set to 0 since there's no reduce operator
Starting Job = job_1566979272704_0012, Tracking URL = http://ip-10-0-0-145.ec2.internal:8
Kill Command = /opt/cloudera/parcels/CDH-5.15.1-1.cdh5.15.1.p0.4/lib/hadoop/bin/hadoop jo
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 0
2019-08-28 09:37:50,097 Stage-1 map = 0%,  reduce = 0%
2019-08-28 09:37:56,274 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 3.75 sec
MapReduce Total cumulative CPU time: 3 seconds 750 msec
Ended Job = job_1566979272704_0012
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1   Cumulative CPU: 3.75 sec   HDFS Read: 21777 HDFS Write: 4329 SUCC
Total MapReduce CPU Time Spent: 3 seconds 750 msec
OK
69.0    3.02    5.97    873.47  Uttar Pradesh   Agra    125614.0        20911.0
90.0    3.53    5.96    910.76  Uttar Pradesh   Aligarh 52583.0 8844.0
104.0   3.16    5.27    1016.34 Uttar Pradesh   Allahabad       61029.0 11563.0
78.0    3.03    5.62    1114.48 Uttar Pradesh   Ambedkar Nagar  44698.0 7923.0
84.0    3.47    4.99    875.68  Uttar Pradesh   Auraiya 107619.0        21590.0
89.0    3.15    6.1     1104.91 Uttar Pradesh   Azamgarh        103165.0        16962.0
70.0    3.03    6.13    859.29  Uttar Pradesh   Baghpat 95759.0 15648.0
105.0   4.87    5.29    896.37  Uttar Pradesh   Bahraich        121402.0        22906.0
82.0    2.97    5.63    992.82  Uttar Pradesh   Ballia  87623.0 15606.0
117.0   4.94    5.74    1040.09 Uttar Pradesh   Balrampur       42016.0 7315.0
96.0    4.13    4.95    925.05  Uttar Pradesh   Banda   59266.0 11915.0
97.0    3.85    5.23    895.18  Uttar Pradesh   Barabanki       58722.0 11232.0
104.0   3.64    5.75    887.13  Uttar Pradesh   Bareilly        78492.0 13678.0
106.0   3.47    5.74    1067.67 Uttar Pradesh   Basti   48055.0 8393.0
79.0    3.23    5.62    963.34  Uttar Pradesh   Bijnor  49416.0 8748.0
108.0   4.48    5.77    915.88  Uttar Pradesh   Budaun  51993.0 8999.0
89.0    3.44    5.65    912.0   Uttar Pradesh   Bulandshahar    59473.0 10578.0
98.0    3.29    5.77    993.76  Uttar Pradesh   Chandauli       92389.0 15936.0
119.0   3.6     5.24    910.69  Uttar Pradesh   Chitrakoot      88832.0 16937.0
83.0    3.12    5.66    1171.6  Uttar Pradesh   Deoria  65914.0 11641.0
86.0    4.16    5.85    884.45  Uttar Pradesh   Etah    52944.0 9054.0
```

```
94.0    2.97    6.06    1064.96 Uttar Pradesh   Ghazipur        62521.0 10337.0
97.0    4.01    5.27    906.07  Uttar Pradesh   Gonda   74324.0 14169.0
76.0    2.72    5.38    1073.8  Uttar Pradesh   Gorakhpur       96497.0 17975.0
66.0    3.57    4.81    862.22  Uttar Pradesh   Hamirpur        62783.0 13042.0
118.0   4.23    5.24    877.61  Uttar Pradesh   Hardoi  52567.0 10040.0
78.0    3.2     5.63    868.83  Uttar Pradesh   Hathras 55062.0 9779.0
97.0    3.1     5.0     880.57  Uttar Pradesh   Jalaun  53505.0 10675.0
91.0    2.87    5.99    1037.06 Uttar Pradesh   Jaunpur 43285.0 7272.0
59.0    2.3     4.52    875.12  Uttar Pradesh   Jhansi  73590.0 16295.0
92.0    3.51    5.79    930.23  Uttar Pradesh   Jyotiba Phule Nagar     37927.0 6546
102.0   3.28    5.71    893.92  Uttar Pradesh   Kannauj 156432.0        27431.0
94.0    2.84    4.81    873.47  Uttar Pradesh   Kanpur Dehat    50626.0 10543.0
50.0    2.11    4.89    875.09  Uttar Pradesh   Kanpur Nagar    144182.0        2952
113.0   3.89    5.12    1032.4  Uttar Pradesh   Kaushambi       67572.0 13179.0
117.0   3.88    5.08    888.43  Uttar Pradesh   Kheri   60900.0 12004.0
99.0    3.33    5.61    1136.58 Uttar Pradesh   Kushinagar      48371.0 8608.0
114.0   3.4     4.87    889.05  Uttar Pradesh   Lalitpur        39529.0 8108.0
58.0    2.23    4.98    898.35  Uttar Pradesh   Lucknow 105538.0        21138.0
96.0    3.23    5.29    1133.13 Uttar Pradesh   Maharajganj     68263.0 12950.0
73.0    3.55    4.75    887.27  Uttar Pradesh   Mahoba  63537.0 13461.0
78.0    3.37    5.69    885.2   Uttar Pradesh   Mainpuri        60823.0 10727.0
58.0    2.98    5.77    876.42  Uttar Pradesh   Mathura 59930.0 10406.0
86.0    2.86    5.95    1038.26 Uttar Pradesh   Mau     74750.0 12606.0
59.0    3.07    6.01    900.55  Uttar Pradesh   Meerut  77688.0 12884.0
105.0   2.57    5.72    962.7   Uttar Pradesh   Mirzapur        38180.0 6709.0
80.0    3.61    6.01    902.28  Uttar Pradesh   Moradabad       66632.0 11054.0
71.0    3.22    5.89    888.14  Uttar Pradesh   Muzaffarnagar   75749.0 12812.0
91.0    3.56    5.54    880.49  Uttar Pradesh   Pilibhit        43038.0 7773.0
104.0   2.9     5.54    1142.93 Uttar Pradesh   Pratapgarh      86770.0 15695.0
80.0    3.29    5.17    946.64  Uttar Pradesh   Rae Bareli      66935.0 12981.0
86.0    3.48    5.8     904.74  Uttar Pradesh   Rampur  66460.0 11435.0
99.0    3.31    5.71    919.02  Uttar Pradesh   Saharanpur      58510.0 10259.0
91.0    3.84    5.43    1174.95 Uttar Pradesh   Sant Kabir Nagar        43549.0 8028
106.0   2.88    6.21    998.61  Uttar Pradesh   Sant Ravidas Nagar (Bhadohi)    5573
100.0   4.17    5.63    853.67  Uttar Pradesh   Shahjahanpur    55307.0 9822.0
130.0   5.52    5.09    983.63  Uttar Pradesh   Shrawasti       38131.0 7483.0
116.0   4.82    5.63    1178.11 Uttar Pradesh   Siddharthnagar  56238.0 9919.0
114.0   4.42    5.38    882.49  Uttar Pradesh   Sitapur 50237.0 9323.0
99.0    3.78    4.92    952.06  Uttar Pradesh   Sonbhadra       33562.0 6838.0
66.0    3.03    5.5     984.1   Uttar Pradesh   Sultanpur       61923.0 11251.0
83.0    3.08    4.92    887.85  Uttar Pradesh   Unnao   69686.0 14128.0
90.0    2.32    5.68    921.53  Uttar Pradesh   Varanasi        86266.0 14974.0
Time taken: 18.685 seconds, Fetched: 70 row(s)
```

For Hive-Hbase table:-

select count(*) from Key_indicator_districtwise_hbase; --29.676

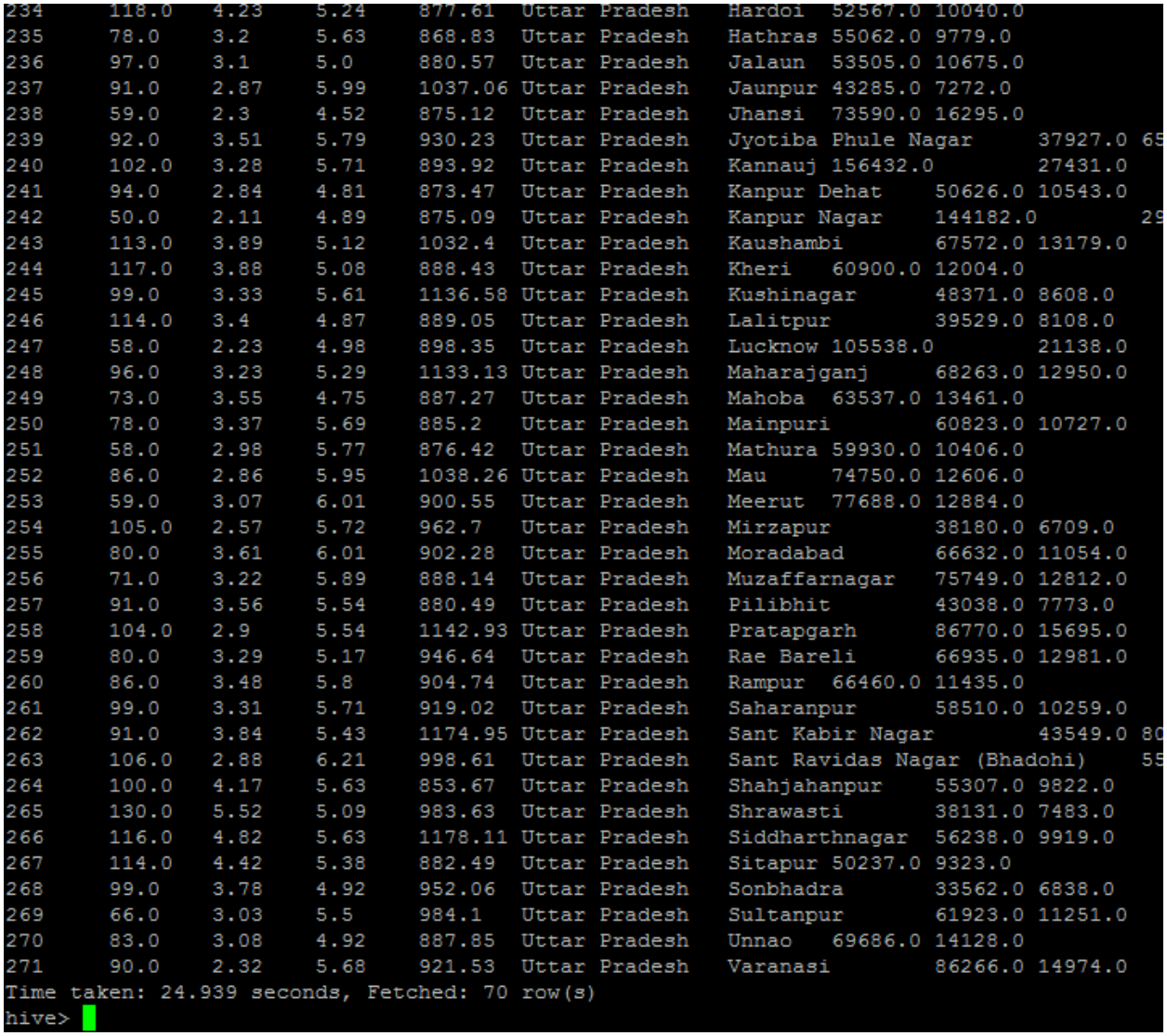
```
hive> select count(*) from Key_indicator_districtwise_hbase;
Query ID = ec2-user_20190828094141_7482c9d6-a670-4d9a-8360-1b22990382
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks determined at compile time: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapreduce.job.reduces=<number>
Starting Job = job_1566979272704_0013, Tracking URL = http://ip-10-0-
Kill Command = /opt/cloudera/parcels/CDH-5.15.1-1.cdh5.15.1.p0.4/lib/
Hadoop job information for Stage-1: number of mappers: 1; number of r
2019-08-28 09:41:16,394 Stage-1 map = 0%,  reduce = 0%
2019-08-28 09:41:23,686 Stage-1 map = 100%,  reduce = 0%, Cumulative
2019-08-28 09:41:29,915 Stage-1 map = 100%,  reduce = 100%, Cumulativ
MapReduce Total cumulative CPU time: 6 seconds 830 msec
Ended Job = job_1566979272704_0013
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1  Reduce: 1   Cumulative CPU: 6.83 sec   HDFS Re
Total MapReduce CPU Time Spent: 6 seconds 830 msec
OK
284
Time taken: 29.676 seconds, Fetched: 1 row(s)
```

select State_Name, count(*) from Key_indicator_districtwise_hbase group by State_Name; -- 31.386

```
hive> select State_Name, count(*) from Key_indicator_districtwise_hbase group by State_Name;
Query ID = ec2-user_20190828094242_13870e7f-8903-4be3-b09a-dd8b7ffd067e
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapreduce.job.reduces=<number>
Starting Job = job_1566979272704_0014, Tracking URL = http://ip-10-0-0-145.ec2.internal:8088/proxy/ap
Kill Command = /opt/cloudera/parcels/CDH-5.15.1-1.cdh5.15.1.p0.4/lib/hadoop/bin/hadoop job  -kill job
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2019-08-28 09:42:24,347 Stage-1 map = 0%,  reduce = 0%
2019-08-28 09:42:30,589 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 3.88 sec
2019-08-28 09:42:37,850 Stage-1 map = 100%,  reduce = 100%, Cumulative CPU 6.68 sec
MapReduce Total cumulative CPU time: 6 seconds 680 msec
Ended Job = job_1566979272704_0014
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1  Reduce: 1   Cumulative CPU: 6.68 sec   HDFS Read: 10702 HDFS Write: 120 SUCCES
Total MapReduce CPU Time Spent: 6 seconds 680 msec
OK
Assam   23
Bihar   37
Chhattisgarh    16
Jharkhand       18
Madhya Pradesh  45
Odisha  30
Rajasthan       32
Uttar Pradesh   70
Uttarakhand     13
Time taken: 31.386 seconds, Fetched: 9 row(s)
```

select * from Key_indicator_districtwise_hbase where State_Name = "Uttar Pradesh"; -- 24.939

```
Time taken: 31.386 seconds, Fetched: 9 row(s)
hive> select * from Key_indicator_districtwise_hbase where State_Name = "Uttar Pradesh";
Query ID = ec2-user_20190828094343_ce9b246b-9e1d-4e87-a262-8fa2fe315f98
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks is set to 0 since there's no reduce operator
Starting Job = job_1566979272704_0015, Tracking URL = http://ip-10-0-0-145.ec2.internal:8088/proxy/applicati
Kill Command = /opt/cloudera/parcels/CDH-5.15.1-1.cdh5.15.1.p0.4/lib/hadoop/bin/hadoop job  -kill job_156697
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 0
2019-08-28 09:44:05,567 Stage-1 map = 0%,  reduce = 0%
2019-08-28 09:44:12,880 Stage-1 map = 100%,  reduce = 0%, Cumulative CPU 5.43 sec
MapReduce Total cumulative CPU time: 5 seconds 430 msec
Ended Job = job_1566979272704_0015
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1   Cumulative CPU: 5.43 sec   HDFS Read: 7179 HDFS Write: 4609 SUCCESS
Total MapReduce CPU Time Spent: 5 seconds 430 msec
OK
202     69.0    3.02    5.97    873.47  Uttar Pradesh   Agra    125614.0        20911.0
203     90.0    3.53    5.96    910.76  Uttar Pradesh   Aligarh 52583.0 8844.0
204     104.0   3.16    5.27    1016.34 Uttar Pradesh   Allahabad       61029.0 11563.0
205     78.0    3.03    5.62    1114.48 Uttar Pradesh   Ambedkar Nagar  44698.0 7923.0
206     84.0    3.47    4.99    875.68  Uttar Pradesh   Auraiya 107619.0        21590.0
207     89.0    3.15    6.1     1104.91 Uttar Pradesh   Azamgarh        103165.0        16962.0
208     70.0    3.03    6.13    859.29  Uttar Pradesh   Baghpat 95759.0 15648.0
209     105.0   4.87    5.29    896.37  Uttar Pradesh   Bahraich        121402.0        22906.0
210     82.0    2.97    5.63    992.82  Uttar Pradesh   Ballia  87623.0 15606.0
211     117.0   4.94    5.74    1040.09 Uttar Pradesh   Balrampur       42016.0 7315.0
212     96.0    4.13    4.95    925.05  Uttar Pradesh   Banda   59266.0 11915.0
213     97.0    3.85    5.23    895.18  Uttar Pradesh   Barabanki       58722.0 11232.0
```



```
234     118.0   4.23    5.24    877.61  Uttar Pradesh   Hardoi  52567.0 10040.0
235     78.0    3.2     5.63    868.83  Uttar Pradesh   Hathras 55062.0 9779.0
236     97.0    3.1     5.0     880.57  Uttar Pradesh   Jalaun  53505.0 10675.0
237     91.0    2.87    5.99    1037.06 Uttar Pradesh   Jaunpur 43285.0 7272.0
238     59.0    2.3     4.52    875.12  Uttar Pradesh   Jhansi  73590.0 16295.0
239     92.0    3.51    5.79    930.23  Uttar Pradesh   Jyotiba Phule Nagar     37927.0 65
240     102.0   3.28    5.71    893.92  Uttar Pradesh   Kannauj 156432.0        27431.0
241     94.0    2.84    4.81    873.47  Uttar Pradesh   Kanpur Dehat    50626.0 10543.0
242     50.0    2.11    4.89    875.09  Uttar Pradesh   Kanpur Nagar    144182.0        29
243     113.0   3.89    5.12    1032.4  Uttar Pradesh   Kaushambi       67572.0 13179.0
244     117.0   3.88    5.08    888.43  Uttar Pradesh   Kheri   60900.0 12004.0
245     99.0    3.33    5.61    1136.58 Uttar Pradesh   Kushinagar      48371.0 8608.0
246     114.0   3.4     4.87    889.05  Uttar Pradesh   Lalitpur        39529.0 8108.0
247     58.0    2.23    4.98    898.35  Uttar Pradesh   Lucknow 105538.0        21138.0
248     96.0    3.23    5.29    1133.13 Uttar Pradesh   Maharajganj     68263.0 12950.0
249     73.0    3.55    4.75    887.27  Uttar Pradesh   Mahoba  63537.0 13461.0
250     78.0    3.37    5.69    885.2   Uttar Pradesh   Mainpuri        60823.0 10727.0
251     58.0    2.98    5.77    876.42  Uttar Pradesh   Mathura 59930.0 10406.0
252     86.0    2.86    5.95    1038.26 Uttar Pradesh   Mau     74750.0 12606.0
253     59.0    3.07    6.01    900.55  Uttar Pradesh   Meerut  77688.0 12884.0
254     105.0   2.57    5.72    962.7   Uttar Pradesh   Mirzapur        38180.0 6709.0
255     80.0    3.61    6.01    902.28  Uttar Pradesh   Moradabad       66632.0 11054.0
256     71.0    3.22    5.89    888.14  Uttar Pradesh   Muzaffarnagar   75749.0 12812.0
257     91.0    3.56    5.54    880.49  Uttar Pradesh   Pilibhit        43038.0 7773.0
258     104.0   2.9     5.54    1142.93 Uttar Pradesh   Pratapgarh      86770.0 15695.0
259     80.0    3.29    5.17    946.64  Uttar Pradesh   Rae Bareli      66935.0 12981.0
260     86.0    3.48    5.8     904.74  Uttar Pradesh   Rampur  66460.0 11435.0
261     99.0    3.31    5.71    919.02  Uttar Pradesh   Saharanpur      58510.0 10259.0
262     91.0    3.84    5.43    1174.95 Uttar Pradesh   Sant Kabir Nagar        43549.0 80
263     106.0   2.88    6.21    998.61  Uttar Pradesh   Sant Ravidas Nagar (Bhadohi)    55
264     100.0   4.17    5.63    853.67  Uttar Pradesh   Shahjahanpur    55307.0 9822.0
265     130.0   5.52    5.09    983.63  Uttar Pradesh   Shrawasti       38131.0 7483.0
266     116.0   4.82    5.63    1178.11 Uttar Pradesh   Siddharthnagar  56238.0 9919.0
267     114.0   4.42    5.38    882.49  Uttar Pradesh   Sitapur 50237.0 9323.0
268     99.0    3.78    4.92    952.06  Uttar Pradesh   Sonbhadra       33562.0 6838.0
269     66.0    3.03    5.5     984.1   Uttar Pradesh   Sultanpur       61923.0 11251.0
270     83.0    3.08    4.92    887.85  Uttar Pradesh   Unnao   69686.0 14128.0
271     90.0    2.32    5.68    921.53  Uttar Pradesh   Varanasi        86266.0 14974.0
Time taken: 24.939 seconds, Fetched: 70 row(s)
hive>
```

8. Create and insert command for the partition table for analyses 1 & 2.

CREATE TABLE IF NOT EXISTS Key_indicator_districtwise_partitioned
(YY_Under_Five_Mortality_Rate_U5MR_Total_Person double,
LL_Total_Fertility_Rate_Total double
)PARTITIONED BY (State_Name string) STORED AS ORC;

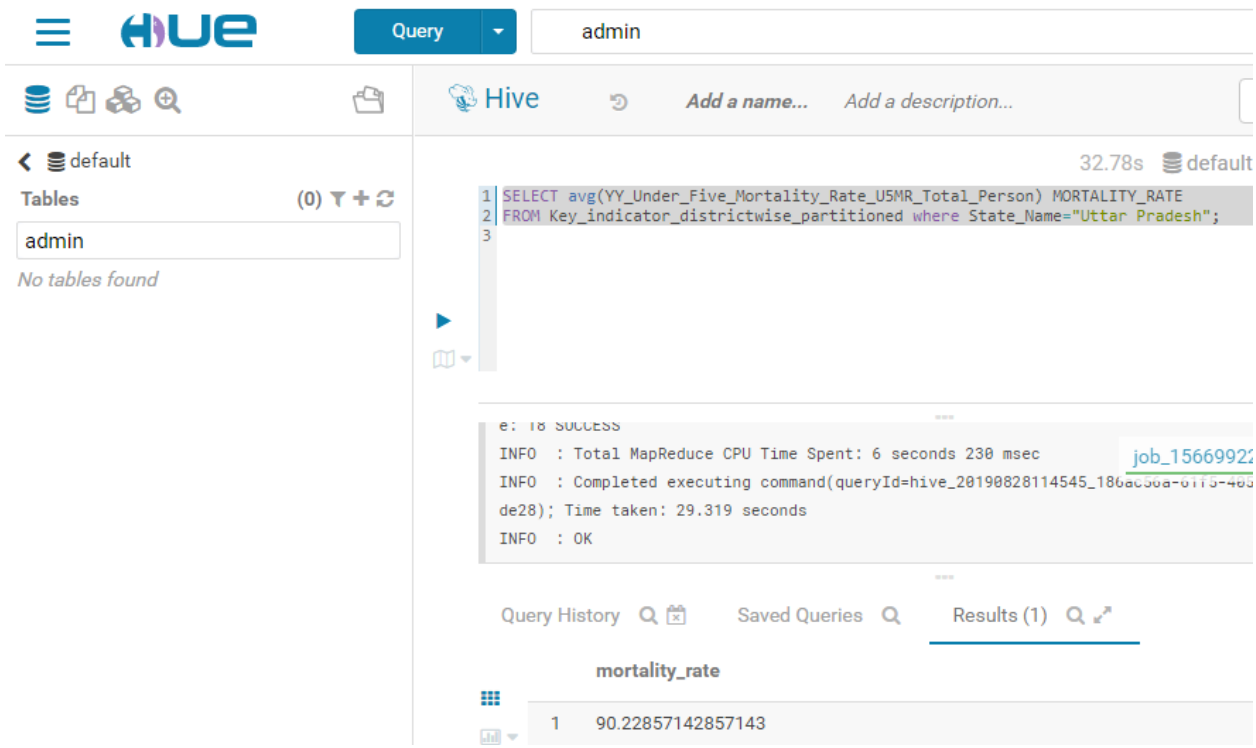
INSERT INTO TABLE Key_indicator_districtwise_partitioned PARTITION(State_Name)
SELECT YY_Under_Five_Mortality_Rate_U5MR_Total_Person,LL_Total_Fertility_Rate_Total,State_Name
FROM key_indicator_districtwise_orc;

The result of each analysis along with the query and the corresponding chart generated in Hue. Keep optimizations in mind

1. **The child mortality rate of Uttar Pradesh**

SELECT avg(YY_Under_Five_Mortality_Rate_U5MR_Total_Person) MORTALITY_RATE
FROM Key_indicator_districtwise_partitioned where State_Name="Uttar Pradesh";

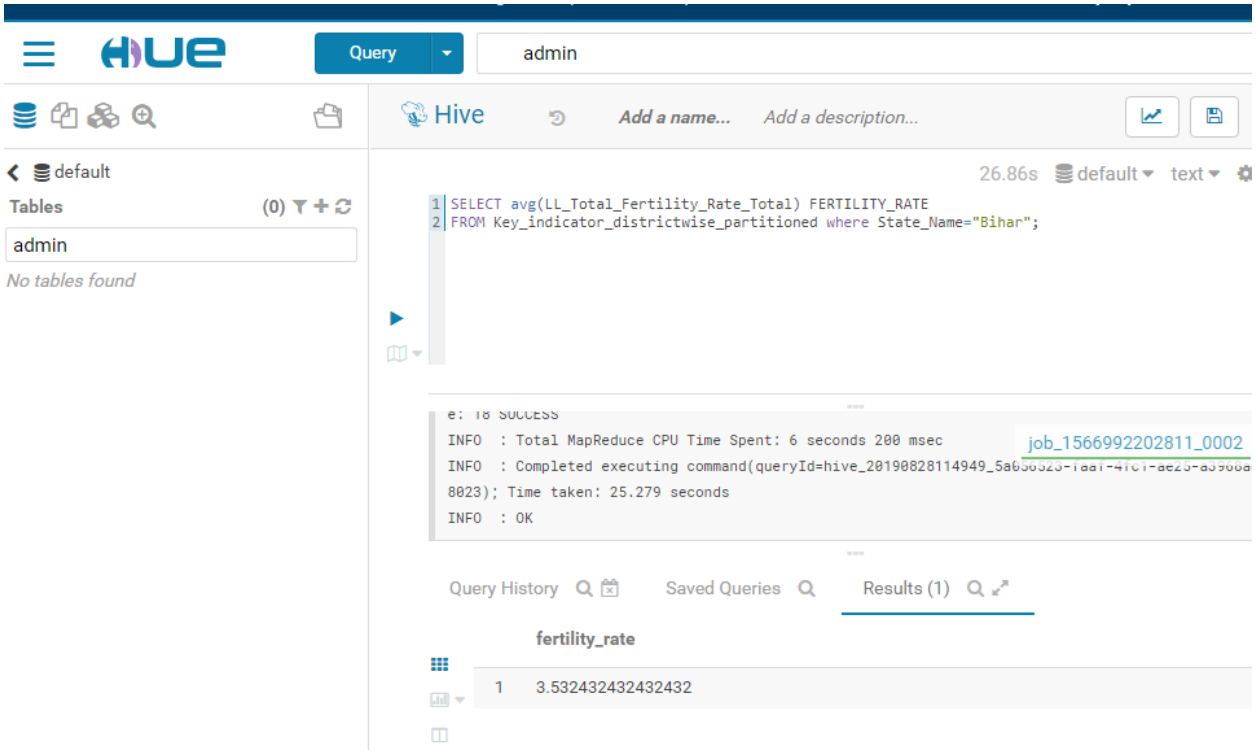
Result:- 90.22857142857143



2. The fertility rate of Bihar

SELECT avg(LL_Total_Fertility_Rate_Total) FERTILITY_RATE
FROM Key_indicator_districtwise_partitioned where State_Name="Bihar";

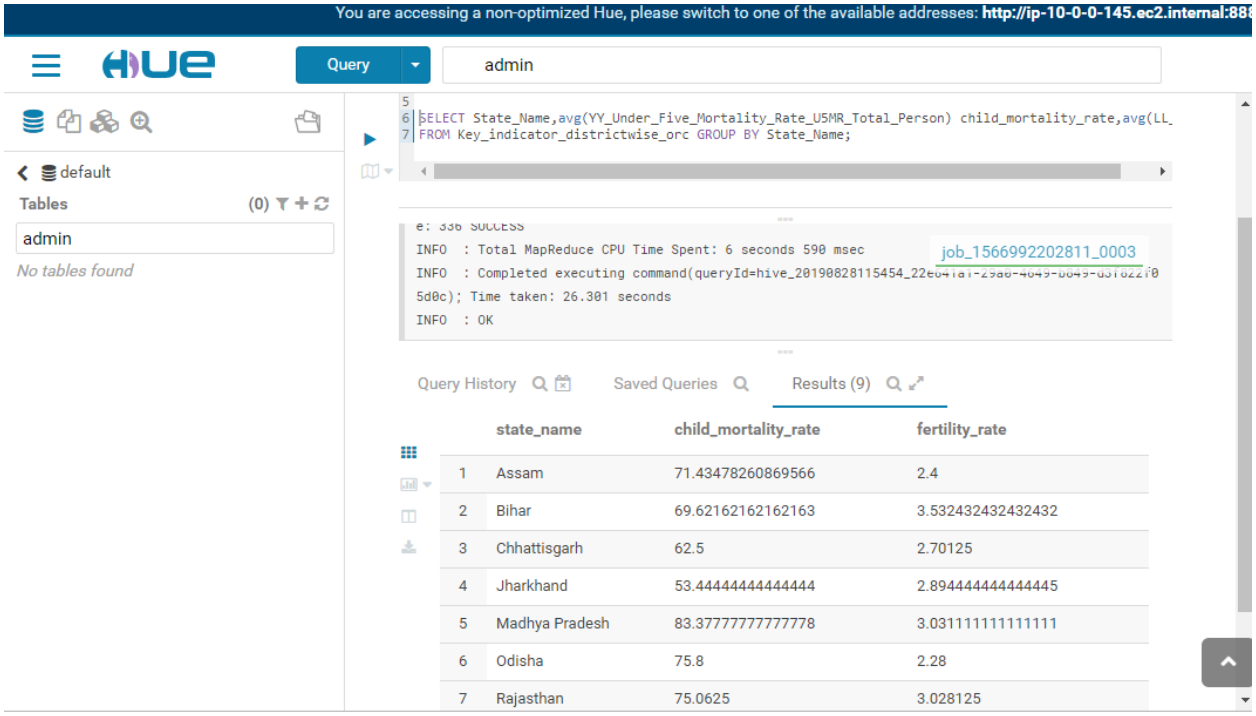
Result: 3.532432432432432



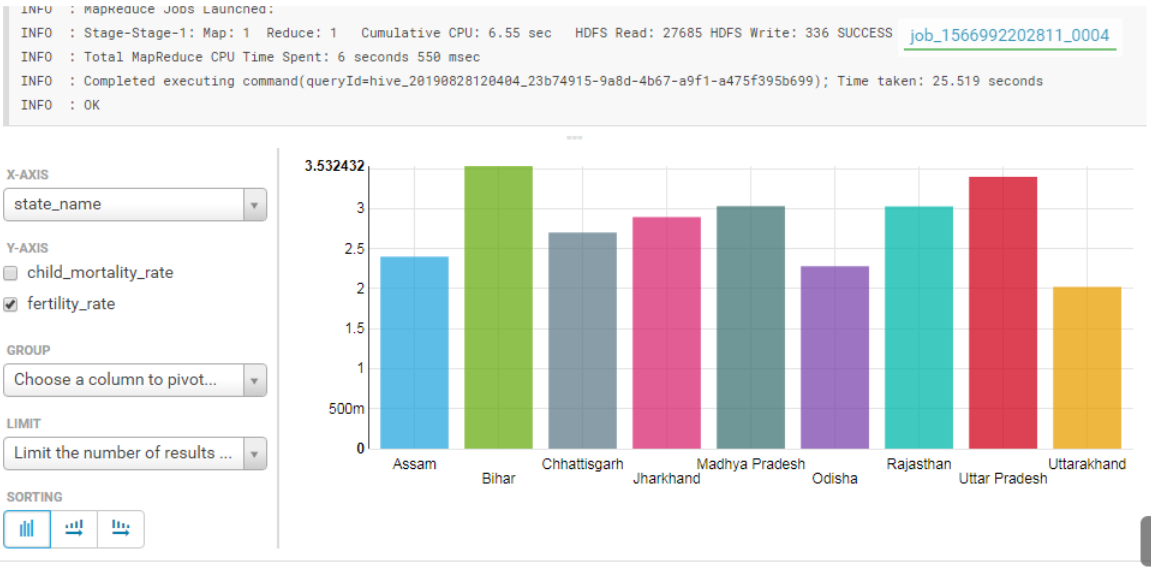
3. State wise child mortality rate and state wise fertility rate and does high fertility correlate with high child mortality?

Query on the table with the chosen format such as orc

SELECT State_Name,avg(YY_Under_Five_Mortality_Rate_U5MR_Total_Person) child_mortality_rate,avg(LL_Total_Fertility_Rate_Total) fertility_rate
FROM Key_indicator_districtwise_orc GROUP BY State_Name;

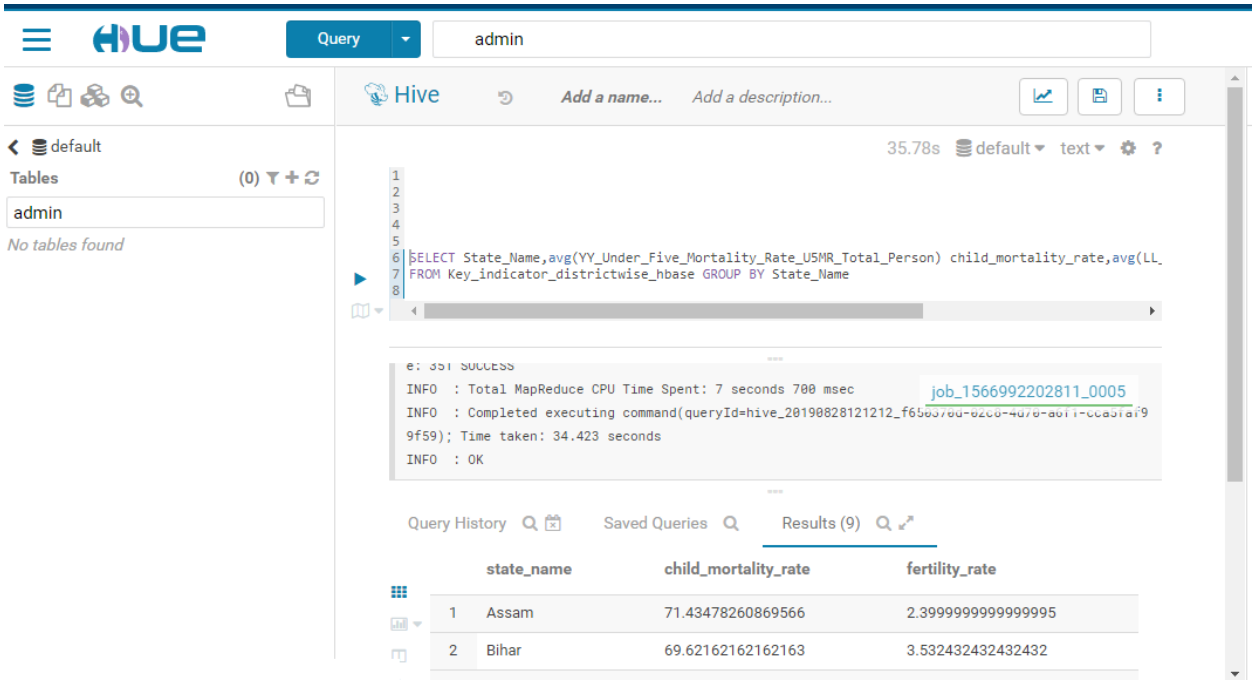


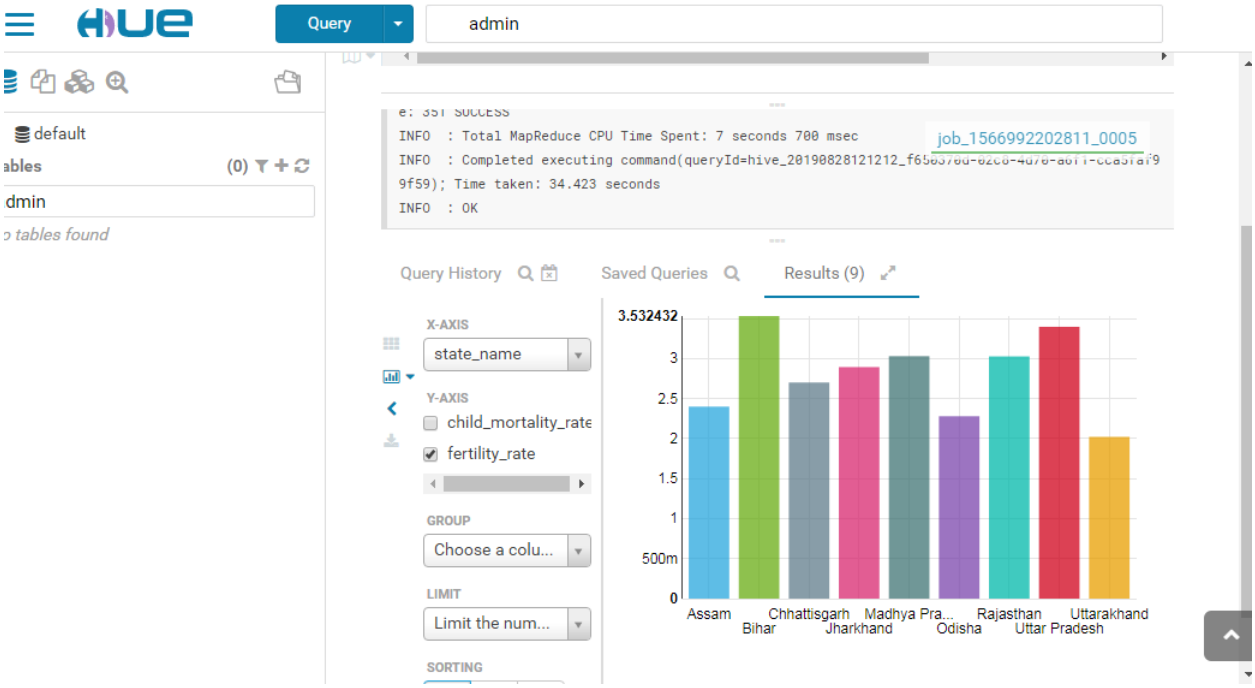
	state_name	child_mortality_rate	fertility_rate
1	Assam	71.43478260869566	2.4
2	Bihar	69.62162162162163	3.532432432432432
3	Chhattisgarh	62.5	2.70125
4	Jharkhand	53.44444444444444	2.894444444444445
5	Madhya Pradesh	83.37777777777778	3.031111111111111
6	Odisha	75.8	2.28
7	Rajasthan	75.0625	3.028125



Query on the Hive-Hbase integrated table

SELECT State_Name,avg(YY_Under_Five_Mortality_Rate_U5MR_Total_Person) child_mortality_rate,avg(LL_Total_Fertility_Rate_Total) fertility_rate
FROM Key_indicator_districtwise_hbase GROUP BY State_Name

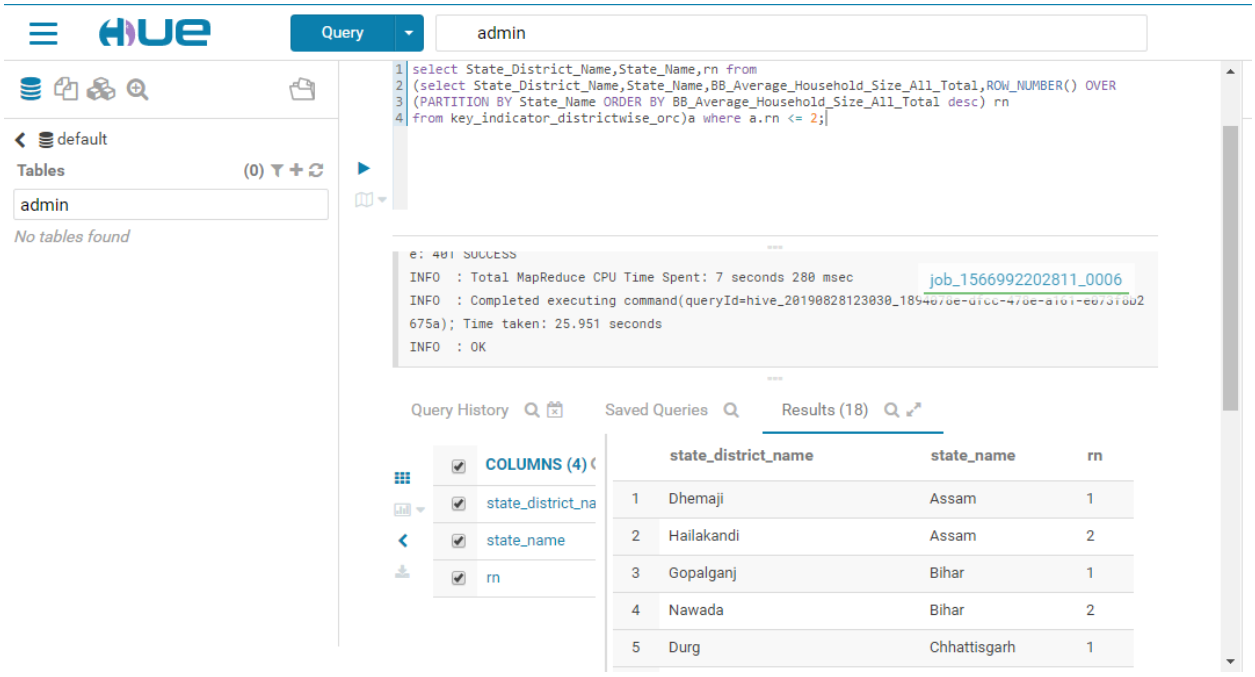


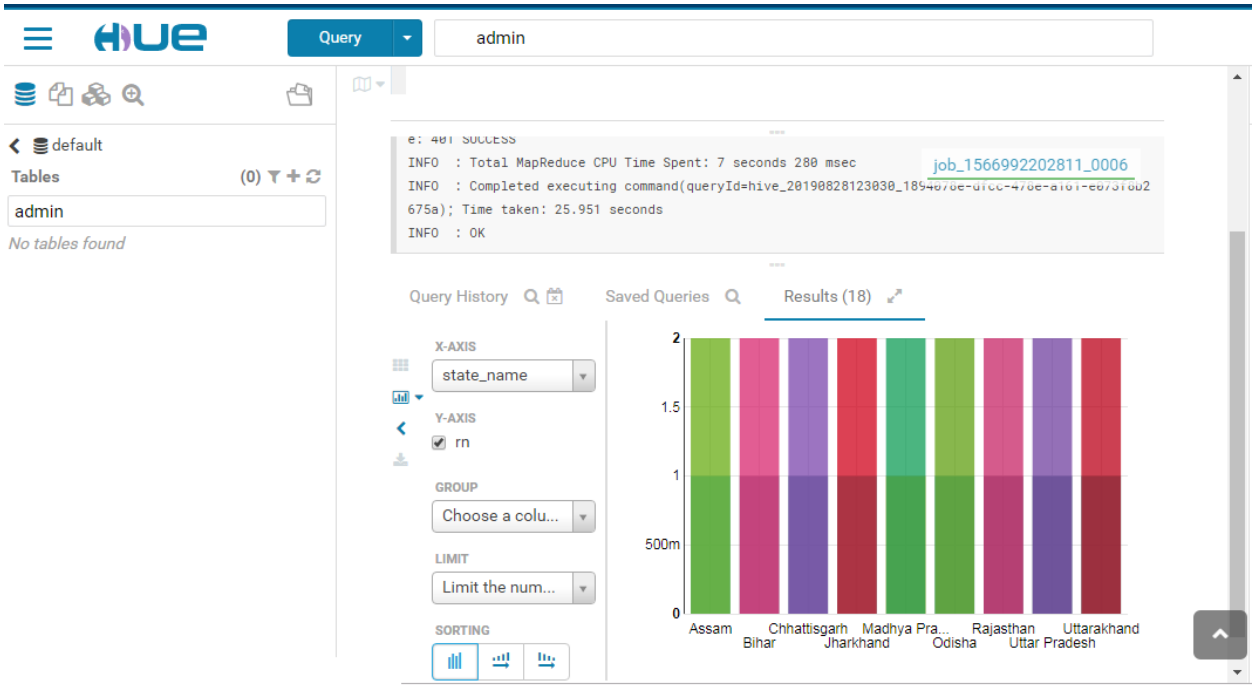


4. Find top 2 districts per state with the highest population per household

Query on the table with the chosen format such as orc

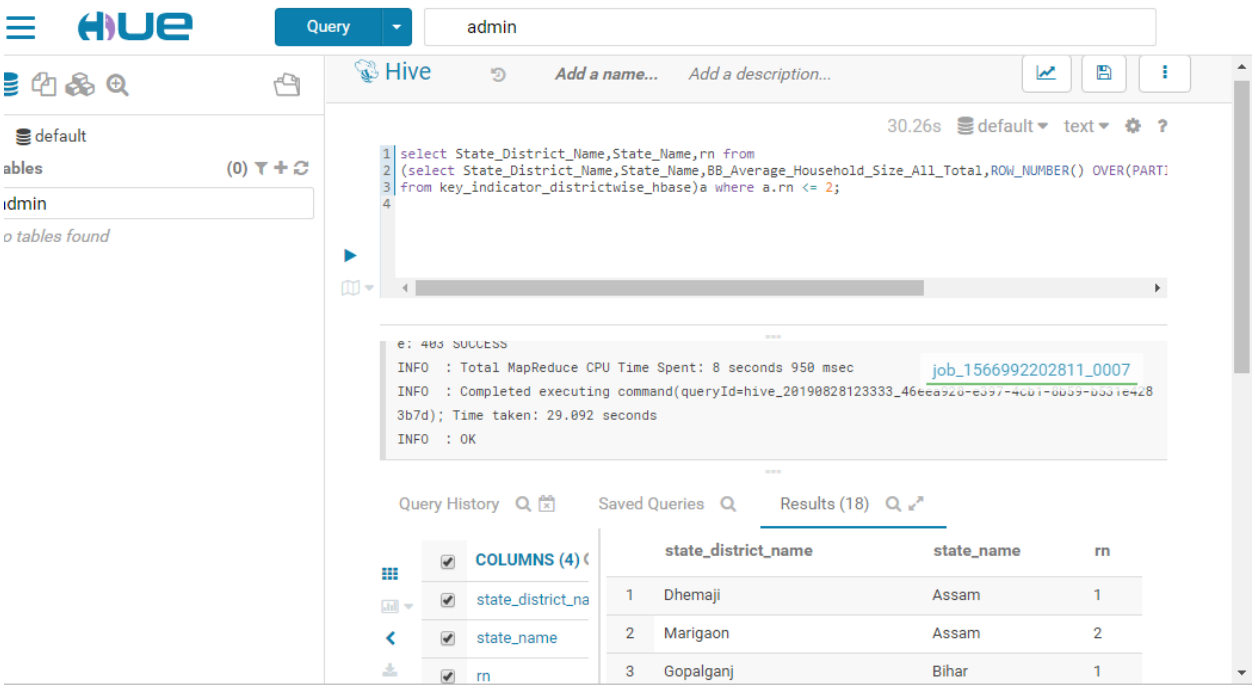
```
select State_District_Name,State_Name,rn from
(select State_District_Name,State_Name,BB_Average_Household_Size_All_Total,ROW_NUMBER() OVER
(PARTITION BY State_Name ORDER BY BB_Average_Household_Size_All_Total desc) rn
        from key_indicator_districtwise_orc)a where a.rn <= 2;
```

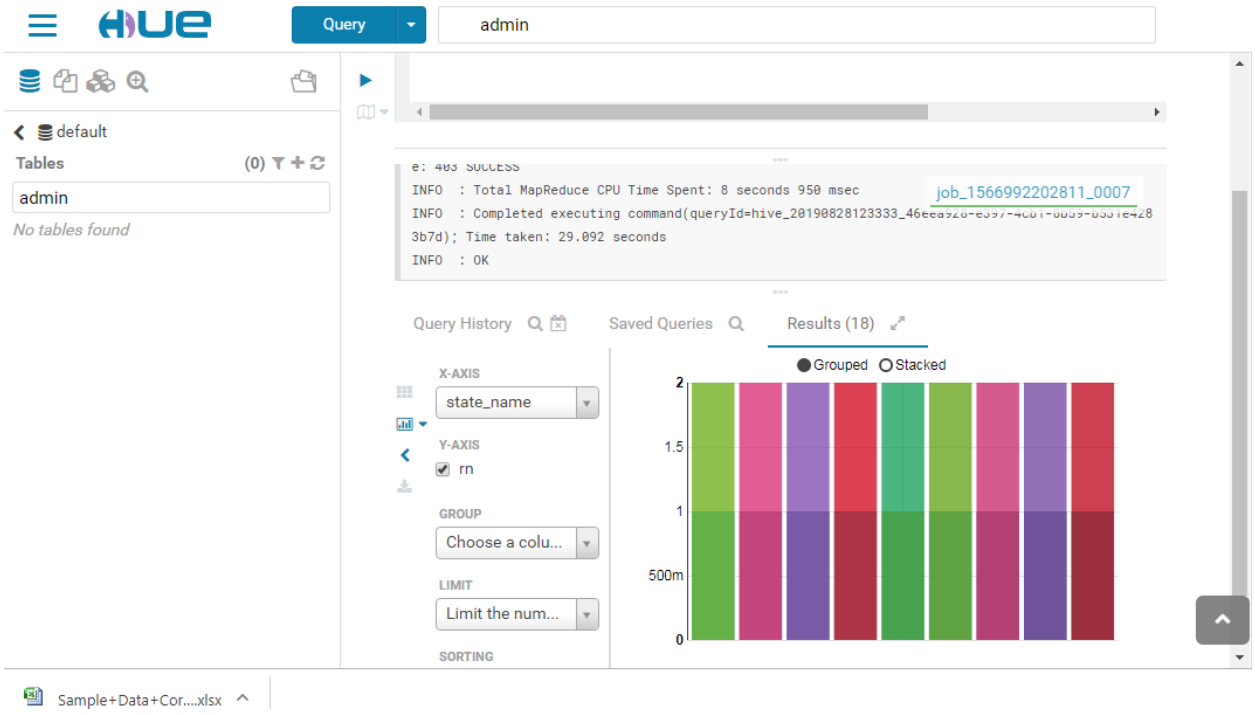




Query on the Hive-Hbase integrated table

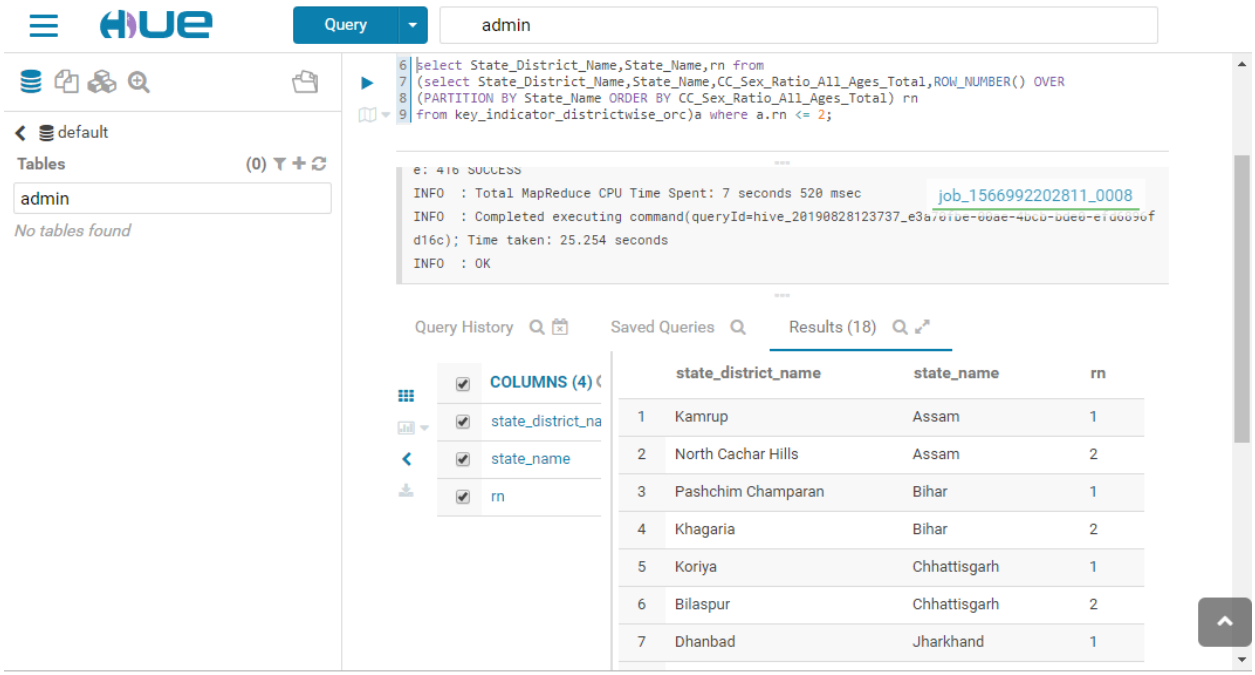
```
select State_District_Name,State_Name,rn from
(select State_District_Name,State_Name,BB_Average_Household_Size_All_Total,ROW_NUMBER()
OVER(PARTITION BY State_Name ORDER BY BB_Average_Household_Size_All_Total desc) rn
        from key_indicator_districtwise_hbase)a where a.rn <= 2;
```

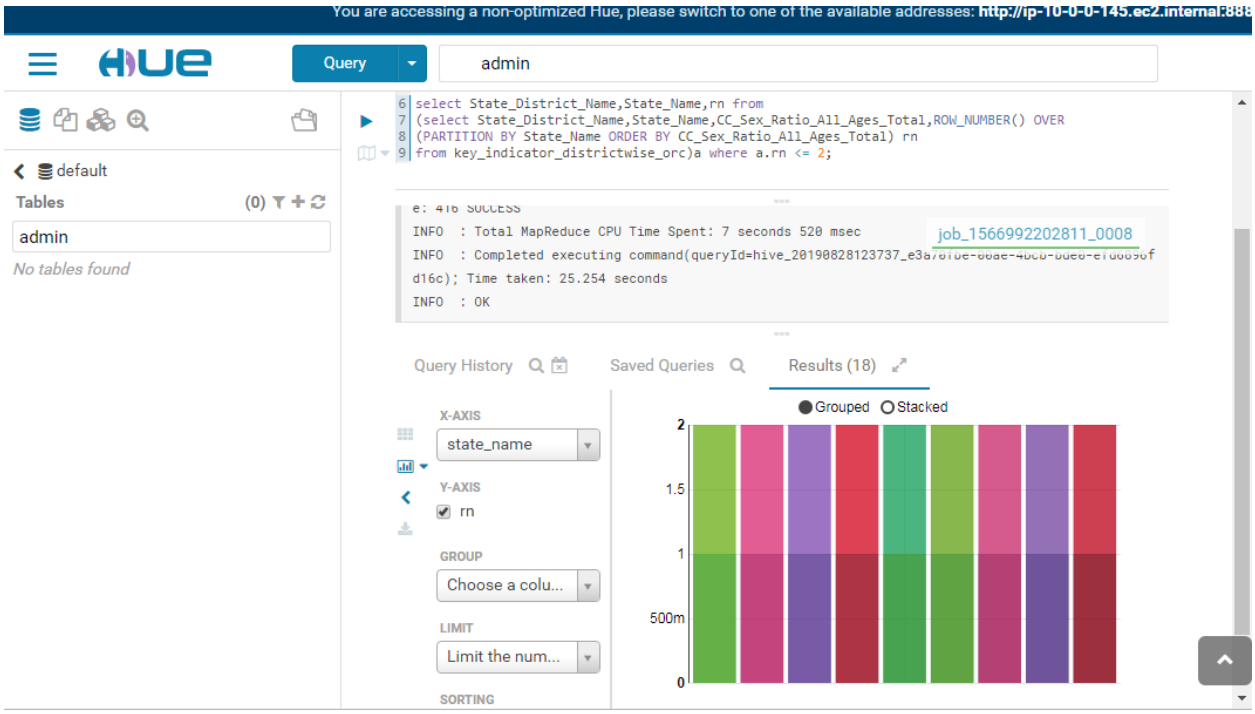




5. Find top 2 districts per state with the lowest sex ratios
Query on the table with the chosen format such as orc

```
select State_District_Name,State_Name,rn from
(select State_District_Name,State_Name,CC_Sex_Ratio_All_Ages_Total,ROW_NUMBER() OVER
(PARTITION BY State_Name ORDER BY CC_Sex_Ratio_All_Ages_Total) rn
        from key_indicator_districtwise_orc)a where a.rn <= 2;
```


Query
admin
default
Tables (0)
admin
No tables found
6 select State_District_Name,State_Name,rn from
7 (select State_District_Name,State_Name,CC_Sex_Ratio_All_Ages_Total,ROW_NUMBER() OVER
8 (PARTITION BY State_Name ORDER BY CC_Sex_Ratio_All_Ages_Total) rn
9 from key_indicator_districtwise_orc)a where a.rn <= 2;
INFO : Total MapReduce CPU Time Spent: 7 seconds 520 msec
job_1566992202811_0008
INFO : Completed executing command(queryId=hive_20190828123737_e3a
d16c); Time taken: 25.254 seconds
INFO : OK
Query History
Saved Queries
Results (18)
COLUMNS (4)
state_district_na
state_name
rn
state_district_name
state_name
rn
1 Kamrup Assam 1
2 North Cachar Hills Assam 2
3 Pashchim Champaran Bihar 1
4 Khagaria Bihar 2
5 Koriya Chhattisgarh 1
6 Bilaspur Chhattisgarh 2
7 Dhanbad Jharkhand 1


You are accessing a non-optimized Hue, please switch to one of the available addresses:
Query
admin
default
Tables (0)
admin
No tables found
6 select State_District_Name,State_Name,rn from
7 (select State_District_Name,State_Name,CC_Sex_Ratio_All_Ages_Total,ROW_NUMBER() OVER
8 (PARTITION BY State_Name ORDER BY CC_Sex_Ratio_All_Ages_Total) rn
9 from key_indicator_districtwise_orc)a where a.rn <= 2;
INFO : Total MapReduce CPU Time Spent: 7 seconds 520 msec
job_1566992202811_0008
INFO : Completed executing command(queryId=hive_20190828123737_e3a
d16c); Time taken: 25.254 seconds
INFO : OK
Query History
Saved Queries
Results (18)
X-AXIS
state_name
Y-AXIS
rn
GROUP
Choose a colu...
LIMIT
Limit the num...
SORTING
Grouped
Stacked
2
1.5
1
500m
0

Query on the Hive-Hbase integrated table

select State_District_Name,State_Name,rn from (select State_District_Name,State_Name,CC_Sex_Ratio_All_Ages_Total,ROW_NUMBER() OVER (PARTITION BY State_Name ORDER BY CC_Sex_Ratio_All_Ages_Total) rn from key_indicator_districtwise_hbase)a where a.rn <= 2;