AUDIT TABLES, TRIGGERS – QUERIES & SCREENSHOTS

AUDIT TABLES WITH RESPECTIVE TRIGGERS

AUDIT_CDC_COVID_DATA_LOCAL

AUDIT TABLE CREATION

```
DROP TABLE IF EXISTS `group_project_225`.`audit_cdc_covid_data_local`;

CREATE TABLE `group_project_225`.`audit_cdc_covid_data_local`

(

`auditAction` ENUM ('INSERT', 'UPDATE', 'DELETE'),

`auditTimestamp` DATETIME DEFAULT CURRENT_TIMESTAMP,

`auditId` INT AUTO_INCREMENT ,`Performed By` varchar(200), `case_month` varchar(8) ,`res_state` varchar(2)

,`state_fips_code` varchar(2) ,`res_county` varchar(20) ,

`county_fips_code` varchar(10) ,`age_group` varchar(20) ,`sex` varchar(10) ,`race` varchar(50) ,`ethnicity`

varchar(50) ,`case_positive_specimen_interval` int ,

`case_onset_interval` int ,`process` varchar(50) ,`exposure_yn` varchar(20) ,`current_status` varchar(30)

,`symptom_status` varchar(25) ,

`hosp_yn` varchar(20) ,`icu_yn` varchar(20) ,`death_yn` varchar(20) ,`underlying_conditions_yn` varchar(5),

PRIMARY KEY (`auditId`),

INDEX (`auditTimestamp`)

);
```



INSERT TRIGGER CREATION:

```
DROP TRIGGER IF EXISTS `group_project_225`.`cdc_covid_data_local_inserts`;

CREATE TRIGGER `group_project_225`.`cdc_covid_data_local_inserts`

AFTER INSERT ON `group_project_225`.`cdc_covid_data_local`

FOR EACH ROW INSERT INTO `group_project_225`.`audit_cdc_covid_data_local`

(`auditAction`, `Performed By`, `case_month`, `res_state`, `state_fips_code`, `res_county`, `county_fips_code`

, `age_group`, `sex`, `race`, `ethnicity`,

`case_positive_specimen_interval`

,`case_onset_interval`, `process`, `exposure_yn`, `current_status`, `symptom_status`, `hosp_yn`, `icu_yn`, `death_yn`,

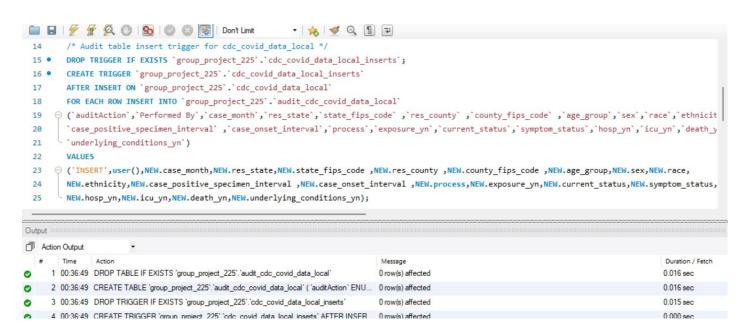
`underlying_conditions_yn`)VALUES

('INSERT',user(),NEW.case_month,NEW.res_state,NEW.state_fips_code,NEW.res_county,NEW.county_fips_code

,NEW.age_group,NEW.sex,NEW.race,

NEW.ethnicity,NEW.case_positive_specimen_interval,NEW.case_onset_interval
,NEW.process,NEW.exposure_yn,NEW.current_status,NEW.symptom_status,

NEW.hosp_yn,NEW.icu_yn,NEW.death_yn,NEW.underlying_conditions_yn);
```



UPDATE TRIGGER CREATION:

```
27
         /* Audit table update trigger for cdc covid data local */
 28 •
        DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_local_updates';
 29 •
        CREATE TRIGGER 'group_project_225'.'cdc_covid_data_local_updates'
         AFTER UPDATE ON 'group project 225'.'cdc covid data local'
 30
        FOR EACH ROW INSERT INTO `group_project_225`.`audit_cdc_covid_data_local`
 31
 32 (`auditAction`,`Performed By`,`case_month`,`res_state`,`state_fips_code`,`res_county`,`county_fips_code`,`age_group`,`sex`,`race`,`ethnicit
         `case_positive_specimen_interval` ,`case_onset_interval`,`process`,`exposure_yn`,`current_status`,`symptom_status`,`hosp_yn`,`icu_yn`,`death_y
 33
         `underlying_conditions_yn`)
 34
         VALUES
 35
 36 ('UPDATE', user(), NEW.case_month, NEW.res_state, NEW.state_fips_code , NEW.res_county , NEW.county_fips_code , NEW.age_group, NEW.sex, NEW.race,
         NEW.ethnicity, NEW.case_positive_specimen_interval ,NEW.case_onset_interval ,NEW.process, NEW.exposure_yn, NEW.current_status, NEW.symptom_status,
 37
        NEW.hosp_yn,NEW.icu_yn,NEW.death_yn,NEW.underlying_conditions_yn);
 38
Output
Action Output
     1 00:36:49 DROP TABLE IF EXISTS 'group_project_225'.'audit_cdc_covid_data_local'
                                                                                    0 row(s) affected
                                                                                                                                                         0.016 sec
    2 00:36:49 CREATE TABLE 'group_project_225'. 'audit_cdc_covid_data_local' ( 'auditAction' ENU... 0 row(s) affected
                                                                                                                                                         0.016 sec
     3 00:36:49 DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_local_inserts'
                                                                                                                                                         0.015 sec
   4 00:36:49 CREATE TRIGGER 'group_project_225'.'cdc_covid_data_local_inserts' AFTER INSER... 0 row(s) affected
                                                                                                                                                         0.000 sec
      5 00:36:49 DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_local_updates'
                                                                                    0 row(s) affected
                                                                                                                                                         0.016 sec
6 00:36:49 CREATE TRIGGER 'group_project_225'.'cdc_covid_data_local_updates' AFTER UPD... 0 row(s) affected
                                                                                                                                                         0.016 sec
```

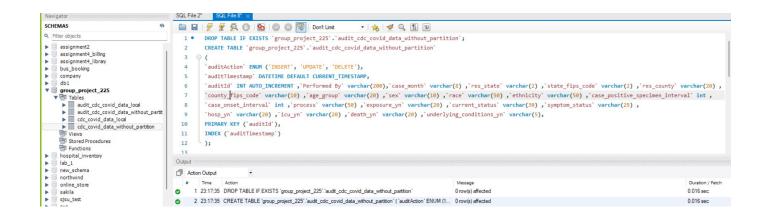
DELETE TRIGGER CREATION:

```
DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_local_updates';
                 CREATE TRIGGER 'group project_225'.'cdc_covid_data_local_updates'
                    AFTER UPDATE ON 'group project 225'.'cdc covid data local'
             FOR EACH ROW INSERT INTO 'group_project_225'.'audit_cdc_covid_data_local'
('auditAction', 'Performed By', 'case month', 'res state', 'state fips code', 'res county', 'county fips code'
                                  , age group', sex', race', ethnicity',
                                  `case positive specimen interval`
,`case_onset_interval`,`process`,`exposure_yn`,`current_status`,`symptom_status`,`hosp_yn`,`icu_yn`,`death
                                                _yn`,
                                     `underlying conditions yn`)
                                               VALUES
        ('UPDATE', user(), NEW.case month, NEW.res state, NEW.state fips code, NEW.res county
                     ,NEW.county_fips_code ,NEW.age_group,NEW.sex,NEW.race,
             NEW.ethnicity, NEW.case positive specimen interval, NEW.case onset interval
              ,NEW.process,NEW.exposure_yn,NEW.current_status,NEW.symptom_status,
               NEW.hosp yn,NEW.icu yn,NEW.death yn,NEW.underlying conditions yn);
```

```
40
                  /* Audit table delete trigger for cdc covid data local */
                 DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_local_deletes';
 41 •
 42 •
                 CREATE TRIGGER `group_project_225`.`cdc_covid_data_local_deletes`
                  AFTER DELETE ON `group_project_225`.`cdc_covid_data_local
 43
                  FOR EACH ROW INSERT INTO 'group project 225'.'audit_cdc_covid_data_local'
 45
            (`auditAction`,`Performed By`,`case_month`,`res_state`,`state_fips_code` ,`res_county` ,`county_fips_code` ,`age_group`,`sex`,`race`,`ethnicit
 46
                 `case_onset_interval`,`process`,`exposure_yn`,`current_status`,`symptom_status`,`hosp_yn`,`icu_yn`,`death_yn`,`underlying_conditions_yn`)
 47
            ('DELETE', user(), OLD.case_month, OLD.res_state, OLD.state_fips_code , OLD.res_county_fips_code , OLD.age_group, OLD.sex, OLD.sex, OLD.res_state_fips_code , OLD.res_county_fips_code , OLD.age_group, OLD.sex, O
 48
 49
                  OLD.case positive specimen interval ,OLD.case onset interval ,OLD.process,OLD.exposure yn,OLD.current status,OLD.symptom status,OLD.hosp yn,OL
                  OLD.death yn, OLD.underlying conditions yn);
 50
Action Output
                                                                                                                                                                                                                                                                                                                          Duration / Fetch
                                 Action
                                                                                                                                                                              Message
          1 00:36:49 DROP TABLE IF EXISTS 'group project 225', 'audit cdc covid data local'
                                                                                                                                                                             0 row(s) affected
                                                                                                                                                                                                                                                                                                                          0.016 sec
         2 00:36:49 CREATE TABLE 'group_project_225'. 'audit_cdc_covid_data_local' ( 'auditAction' ENU... 0 row(s) affected
                                                                                                                                                                                                                                                                                                                          0.016 sec
          3 00:36:49 DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_local_inserts'
                                                                                                                                                                             0 row(s) affected
                                                                                                                                                                                                                                                                                                                          0.015 sec
          4 00:36:49 CREATE TRIGGER 'group_project_225'.'cdc_covid_data_local_inserts' AFTER INSER... 0 row(s) affected
                                                                                                                                                                                                                                                                                                                          0.000 sec
          5 00:36:49 DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_local_updates'
                                                                                                                                                                            0 row(s) affected
                                                                                                                                                                                                                                                                                                                          0.016 sec
          6 00:36:49 CREATE TRIGGER 'group_project_225'.'cdc_covid_data_local_updates' AFTER UPD... 0 row(s) affected
                                                                                                                                                                                                                                                                                                                          0.016 sec
           7 00:36:49 DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_local_deletes'
                                                                                                                                                                             0 row(s) affected
                                                                                                                                                                                                                                                                                                                          0.000 sec
          8 00:36:49 CREATE TRIGGER 'group_project_225'.'cdc_covid_data_local_deletes' AFTER DELE... 0 row(s) affected
                                                                                                                                                                                                                                                                                                                          0.015 sec
```

AUDIT_CDC_COVID_DATA_WITHOUT PARTITION

AUDIT TABLE CREATION



INSERT TRIGGER CREATION:

```
DROP TRIGGER IF EXISTS `group_project_225`.`cdc_covid_data_without_partition_inserts`;

CREATE TRIGGER `group_project_225`.`cdc_covid_data_without_partition_inserts`

AFTER INSERT ON `group_project_225`.`cdc_covid_data_without_partition`

FOR EACH ROW INSERT INTO `group_project_225`.`audit_cdc_covid_data_without_partition`

(`auditAction`, `Performed By`, `case_month`, `res_state`, `state_fips_code`, `res_county`, `county_fips_code`

, `age_group`, `sex`, `race`, `ethnicity`,

`case_positive_specimen_interval`

,`case_onset_interval`, `process`, `exposure_yn`, `current_status`, `symptom_status`, `hosp_yn`, `icu_yn`, `death_yn`,

`underlying_conditions_yn`) VALUES

('INSERT',user(),NEW.case_month,NEW.res_state,NEW.state_fips_code,NEW.res_county,NEW.county_fips_code

,NEW.age_group,NEW.sex,NEW.race,

NEW.ethnicity,NEW.case_positive_specimen_interval,NEW.case_onset_interval
,NEW.process,NEW.exposure_yn,NEW.current_status,NEW.symptom_status,

NEW.hosp_yn,NEW.icu_yn,NEW.death_yn,NEW.underlying_conditions_yn);
```

```
16 • DROP TRIGGER IF EXISTS `group_project_225`.`cdc_covid_data_without_partition_inserts`;
 17 • CREATE TRIGGER `group_project_225`.`cdc_covid_data_without_partition_inserts`
         AFTER INSERT ON 'group_project_225'.'cdc_covid_data_without_partition'
        FOR EACH ROW INSERT INTO `group_project_225`.`audit_cdc_covid_data_without_partition`
 19
 20 🌣 (`auditAction`,`Performed By`,`case_month`,`res_state`,`state_fips_code` ,`res_county` ,`county_fips_code` ,`age_group`,`sex`,`race`,`ethnicit
          `case_positive_specimen_interval` ,`case_onset_interval`,`process`,`exposure_yn`,`current_status`,`symptom_status`,`hosp_yn`,`icu_yn`,`death_y
 21
       `underlying_conditions_yn`)
 22
 23
 24 ('INSERT', user(), NEW.case_month, NEW.res_state, NEW.state_fips_code , NEW.res_county_fips_code , NEW.age_group, NEW.sex, NEW.race,
 25
         NEW.ethnicity, NEW.case_positive_specimen_interval ,NEW.case_onset_interval ,NEW.process, NEW.exposure_yn, NEW.current_status, NEW.symptom_status,
 26
         NEW.hosp_yn,NEW.icu_yn,NEW.death_yn,NEW.underlying_conditions_yn);
 27
Output :
Action Output
                                                                                                                                                      Duration / Fetch
     1 00:39:47 DROP TABLE IF EXISTS 'group_project_225'. 'audit_cdc_covid_data_without_partition'
                                                                                                                                                      0.031 sec
     2 00:39:47 CREATE TABLE 'group_project_225'. 'audit_cdc_covid_data_without_partition' ( 'auditA... 0 row(s) affected
                                                                                                                                                      0.016 sec
     3 00:39:47 DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_without_partition_in... 0 row(s) affected
  4 00:39:47 CREATE TRIGGER 'group_project_225'.'cdc_covid_data_without_partition_inserts' AF... 0 row(s) affected
                                                                                                                                                      0.016 sec
```

UPDATE TRIGGER CREATION:

```
DROP TRIGGER IF EXISTS `group_project_225`.`cdc_covid_data_without_partition_updates`;

CREATE TRIGGER `group_project_225`.`cdc_covid_data_without_partition_updates`

AFTER UPDATE ON `group_project_225`.`cdc_covid_data_without_partition`

FOR EACH ROW INSERT INTO `group_project_225`.`audit_cdc_covid_data_without_partition`

(`auditAction`,`Performed By`,`case_month`,`res_state`,`state_fips_code`,`res_county`,`county_fips_code`

,`age_group`,`sex`,`race`,`ethnicity`,

`case_positive_specimen_interval`

,`case_onset_interval`,`process`,`exposure_yn`,`current_status`,`symptom_status`,`hosp_yn`,`icu_yn`,`death_yn`,

underlying_conditions_yn`) VALUES

('UPDATE',user(),NEW.case_month,NEW.res_state,NEW.state_fips_code ,NEW.res_county ,NEW.county_fips_code

,NEW.age_group,NEW.sex,NEW.race,

NEW.ethnicity,NEW.case_positive_specimen_interval ,NEW.case_onset_interval

,NEW.process,NEW.exposure_yn,NEW.current_status,NEW.symptom_status,

NEW.hosp_yn,NEW.icu_yn,NEW.death_yn,NEW.underlying_conditions_yn);
```

```
28
          /* Audit table update trigger for cdc_coid_data_without_partition*/
         DROP TRIGGER IF EXISTS `group_project_225`.`cdc_covid_data_without_partition_updates`;
 29 •
        CREATE TRIGGER `group_project_225`.`cdc_covid_data_without_partition_updates
 30 .
          AFTER UPDATE ON 'group_project_225'.'cdc_covid_data_without_partition'
 31
          FOR EACH ROW INSERT INTO `group_project_225`.`audit_cdc_covid_data_without_partition`
 32
 33 \ominus (`auditAction`,`Performed By`,`case_month`,`res_state`,`state_fips_code` ,`res_county` ,`county_fips_code` ,`age_group`,`sex`,`race`,`ethnicit
          `case_positive_specimen_interval` ,`case_onset_interval`,`process`,`exposure_yn`,`current_status`,`symptom_status`,`hosp_yn`,`icu_yn`,`death_y
 34
          'underlying conditions yn')
 35
 36
 37 ("UPDATE", user(), NEW.case_month, NEW.res_state, NEW.state_fips_code , NEW.res_county , NEW.county_fips_code , NEW.age_group, NEW.sex, NEW.race,
  38
          NEW.ethnicity.NEW.case positive specimen interval .NEW.case onset interval .NEW.process.NEW.exposure vn.NEW.current status.NEW.symptom status.
          NEW.hosp yn, NEW.icu yn, NEW.death yn, NEW.underlying conditions yn);
  39
Output :
Action Output
   # Time
                                                                                                                                                            Duration / Fetch
     1 00:39:47 DROP TABLE IF EXISTS 'group_project_225'.'audit_cdc_covid_data_without_partition'
                                                                                                                                                            0.031 sec
     2 00:39:47 CREATE TABLE 'group_project_225'. 'audit_cdc_covid_data_without_partition' ( 'auditA... 0 row(s) affected
                                                                                                                                                            0.016 sec
                                                                                                                                                            0.000 sec
     3 00:39:47 DROP TRIGGER IF EXISTS 'group project 225'.'cdc covid data without partition in... 0 row(s) affected
    4 00:39:47 CREATE TRIGGER 'group_project_225'.'cdc_covid_data_without_partition_inserts' AF... 0 row(s) affected
                                                                                                                                                           0.016 sec
      5 00:39:47 DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_without_partition_up... 0 row(s) affected
                                                                                                                                                            0.000 sec
   6 00:39:47 CREATE TRIGGER 'group_project_225'.'cdc_covid_data_without_partition_updates' A... 0 row(s) affected
                                                                                                                                                            0.015 sec
```

DELETE TRIGGER CREATION:

DROP TRIGGER IF EXISTS `group_project_225`.`cdc_covid_data_without_partition_deletes`;

CREATE TRIGGER `group_project_225`.`cdc_covid_data_without_partition_deletes`

AFTER DELETE ON `group_project_225`.`cdc_covid_data_without_partition`

FOR EACH ROW INSERT INTO `group_project_225`.`audit_cdc_covid_data_without_partition`

(`auditAction`, `Performed By`, `case_month`, `res_state`, `state_fips_code`, `res_county`, `county_fips_code`

, `age_group`, `sex`, `race`, `ethnicity`, `case_positive_specimen_interval`,

`case_onset_interval`, `process`, `exposure_yn`, `current_status`, `symptom_status`, `hosp_yn`, `icu_yn`, `death_yn`, `und

erlying_conditions_yn`) VALUES

('DELETE',user(),OLD.case_month,OLD.res_state,OLD.state_fips_code,OLD.res_county,OLD.county_fips_code

,OLD.age_group,OLD.sex,OLD.race,OLD.ethnicity,

OLD.case_positive_specimen_interval,OLD.case_onset_interval
,OLD.process,OLD.exposure_yn,OLD.current_status,OLD.symptom_status,OLD.hosp_yn,OLD.icu_yn,

OLD.death_yn,OLD.underlying_conditions_yn);

```
41
         /* Audit table delete trigger for cdc_coid_data_without_partition*/
 42 • DROP TRIGGER IF EXISTS 'group project 225'.'cdc covid data without partition deletes';
 43 • CREATE TRIGGER `group_project_225`.`cdc_covid_data_without_partition_deletes
         AFTER DELETE ON 'group_project_225'.'cdc_covid_data_without_partition'
 45
        FOR EACH ROW INSERT INTO `group_project_225`.`audit_cdc_covid_data_without_partition`
 46
      (`auditAction`,`Performed By`,`case_month`,`res_state`,`state_fips_code`,`res_county`,`county_fips_code`,`age_group`,`sex`,`race`,`ethnicit
 47
         `case_onset_interval`,`process`,`exposure_yn`,`current_status`,`symptom_status`,`hosp_yn`,`icu_yn`,`death_yn`,`underlying_conditions_yn`)
 48
 49 ('DELETE', user(), OLD.case_month, OLD.res_state, OLD.state_fips_code , OLD.res_county , OLD.county_fips_code , OLD.age_group, OLD.sex, OLD.race, OLD.et
 50
         OLD.case_positive_specimen_interval ,OLD.case_onset_interval ,OLD.process,OLD.exposure_yn,OLD.current_status,OLD.symptom_status,OLD.hosp_yn,OLD.
         OLD.death_yn,OLD.underlying_conditions_yn);
 52
Dutput
Action Output
    1 00:39:47 DROP TABLE IF EXISTS 'group_project_225'. 'audit_cdc_covid_data_without_partition' 0 row(s) affected
2 00:39:47 CREATE TABLE 'group_project_225'. 'audit_cdc_covid_data_without_partition' ( 'auditA... 0 row(s) affected
                                                                                                                                                             0.016 sec
     3 00:39:47 DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_without_partition_in... 0 row(s) affected
                                                                                                                                                             0.000 sec
    4 00:39:47 CREATE TRIGGER 'group project 225' 'cdc covid data without partition inserts' AF... 0 row(s) affected
                                                                                                                                                             0.016 sec
     5 00:39:47 DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_without_partition_up... 0 row(s) affected
     6 00:39:47 CREATE TRIGGER 'group_project_225'.'cdc_covid_data_without_partition_updates' A... 0 row(s) affected
                                                                                                                                                             0.015 sec
     7 00:39:47 DROP TRIGGER IF EXISTS 'group_project_225'.'cdc_covid_data_without_partition_de... 0 row(s) affected
                                                                                                                                                             0.000 sec
8 00:39:47 CREATE TRIGGER group project 225', cdc covid data without partition deletes' AF... 0 row(s) affected
                                                                                                                                                             0.016 sec
```

TESTING AUDIT TABLE ENTRIES - CDC_COVID_DATA_LOCAL

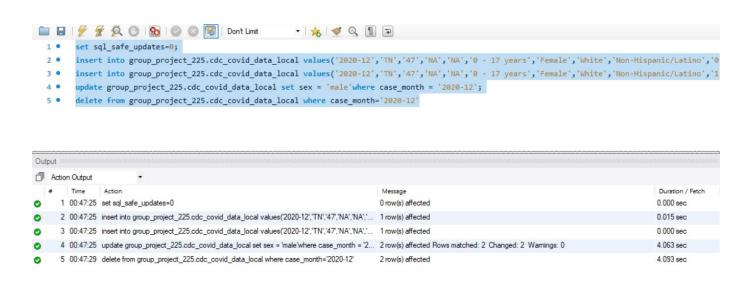
ENTRIES MADE INTO CDC_COVID_DATA_LOCAL

insert into group_project_225.cdc_covid_data_local values('2020-12','TN','47','NA','NA','0 - 17 years','Female','White','Non-Hispanic/Latino','0','0','Missing','Missing','Laboratory-confirmed case','Symptomatic','No','Missing','Missing',');

insert into group_project_225.cdc_covid_data_local values('2020-12','TN','47','NA','NA','0 - 17 years','Female','White','Non-Hispanic/Latino','1','0','Missing','Missing','Probable Case','Symptomatic','No','Missing','Missing','');

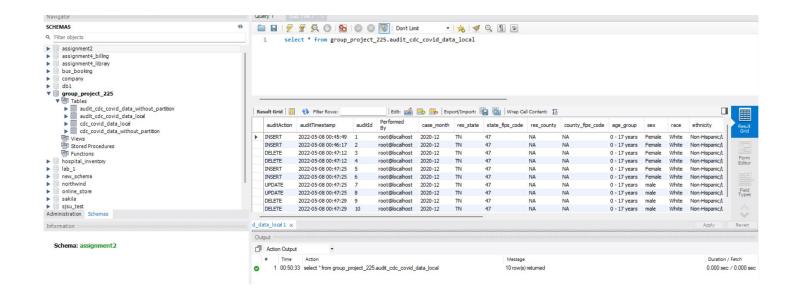
update group_project_225.cdc_covid_data_local set sex = 'male'where case_month = '2020-12';

delete from group_project_225.cdc_covid_data_local where case_month='2020-12'



CHECKING THE AUDIT TABLE FOR ENTRY LOG

select * from group_project_225.audit_cdc_covid_data_local



TESTING AUDIT TABLE ENTRIES - CDC COVID DATA WITHOUT PARITION

ENTRIES MADE INTO CDC_COVID_DATA_WITHOUT_PARTITION

insert into group_project_225.cdc_covid_data_without_partition values('2020-12','TN','47','NA','NA','0 - 17 years','Female','White','Non-Hispanic/Latino','0','0','Missing','Missing','Laboratory-confirmed case','Symptomatic','No','Missing','Missing','');

insert into group_project_225.cdc_covid_data_without_partition values('2020-12','TN','47','NA','NA','0 - 17 years','Female','White','Non-Hispanic/Latino','1','0','Missing','Missing','Probable Case','Symptomatic','No','Missing','Missing','');

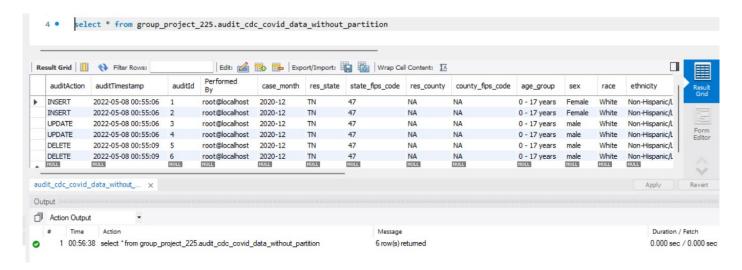
update group_project_225.cdc_covid_data_without_partition set sex = 'male'where case_month = '2020-12';

delete from group project 225.cdc covid data without partition where case month='2020-12'



CHECKING THE AUDIT TABLE FOR ENTRY LOG

select * from group project 225.audit cdc covid data without partition



<End of document>

Submitted by: Gayathri Sundareshwar, Keerthana Gopikrishnan and Deepasha Jenamani