Northeastern University

Project Report

Active Clinical Trial Database

INFO 6210

Data Management and Database Design

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Abstract

The final project for the Data Management and Database Design course is creating and designing a database for all the Active Clinical Trials (ACT) in USA. The Database will store clinical trials and outcomes through data modelled around a complex relationship of multiple entities.

A pharma company houses a Clinical Trial for one or more of their new drugs. This is a multi-step process which is based on the research carried out by the scientists and administered to the patients under the supervision of the doctors. The test samples are unique for every patient and form the basis of whether the drug passes the clinical trial or not.

Moreover, the database also gives a geographical context of where the companies are conducting trials in USA by keeping a track of the state wise clinical trials. The Estimated cost of every trial logged in by the database gives an idea as to which company is spending how much and on what drug.

Ultimately, this database is modelled to aid regulatory professionals, medical practitioners and clinical research investigators for evidence based decision making or perhaps as a tool in getting clinical trial information.

Application Software used- MySQL

Problem Statement-

- A COMPANY can conduct multiple clinical trials.
- A CLINICAL TRIAL has multiple PHASE.
- Each PHASE has many PARTICIPANTs.
- A PARTICIPANT can be either a patient or a volunteer.
- Each PARTICIPANT will have one SAMPLE.
- One SCIENTIST can take multiple SAMPLE of the PARTICIPANT.
- Each RESEARCH CENTER will have multiple SCIENTISTs working in it.
- Each RESEARCH CENTER will have one CLINICAL TRIAL.
- Each DOCTOR will work in a HOSPITAL.
- Each HOSPITAL will be there in some STATE on USA and can be affiliated with one or more biopharma COMPANY.
- Every COMPANY will have a RESEARCH CENTER affiliated with it.
- There are many DISEASE AREAs under which the research of a DRUG for a DISEASE might fall.

EER Diagram-
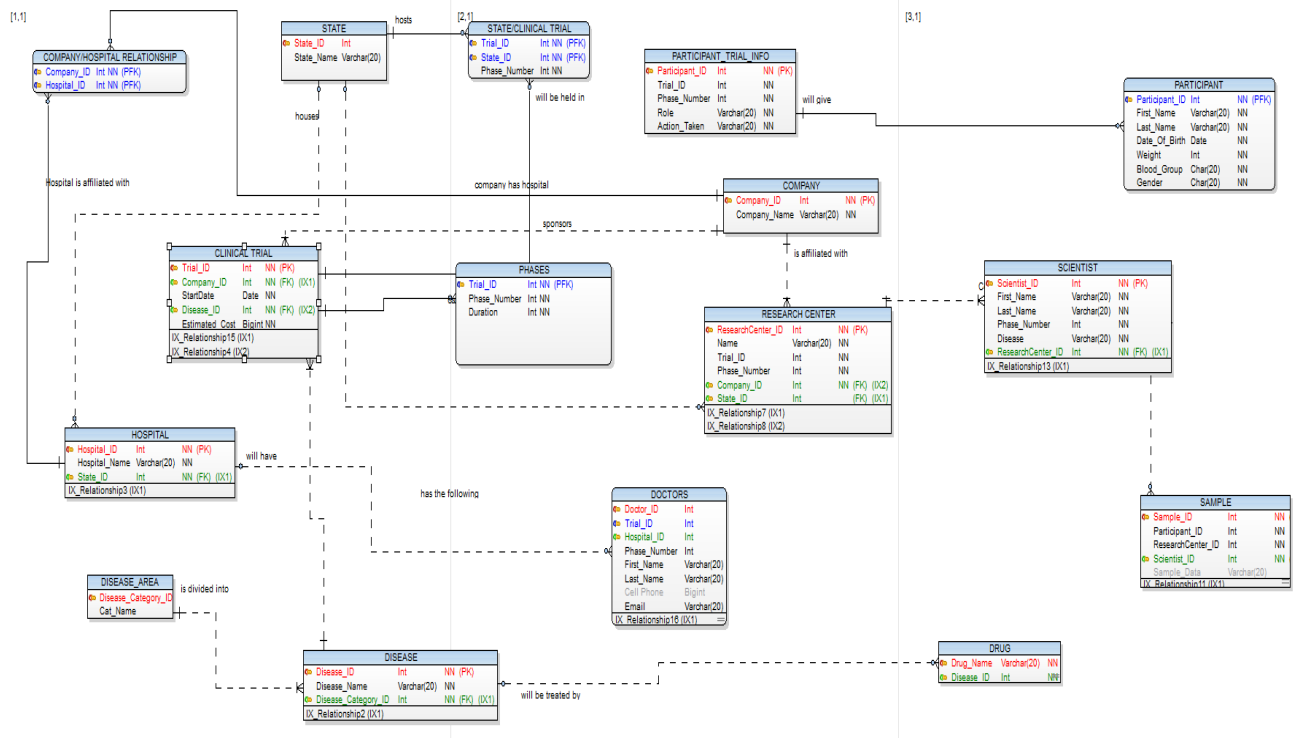
The entities in this EER diagram are-

1. Company- biopharma company which sponsors one or more clinical trial.
2. Clinical Trial- It is the process done before the drug can be approved for market.
3. Phase- it is the state of the clinical trial. It can either be 1,2 or 3.
4. Scientist- he is a person who takes a sample of the participant vitals.
5. Participant- can be a patient or a healthy volunteer.
6. Participant Trial Info- log of all the details of a participant pertaining to a trial.
7. Disease Area- it is the category within which a disease can fall.
8. Disease- it is the disease for which clinical trials take place.
9. Drug- it is the drug for a disease which is under a clinical trial.
10. Hospital- it is the place where doctors will carry out tests on participants.
11. State- it is the state in USA.
12. Research Center- it is the place where the scientist will take the sample and do research.

There are two bridge tables which will log all the information of the two M:N relationships in the EER diagram.

Views

1. Disease and Disease area view

```
1    /*Disease and Disease areas view */
2  • select Disease_ID, Disease_Name, concat_ws('',Cat_Name) as Category
3    from disease as d, disease_areas as da
4    where d.Disease_Category_ID=da.Disease_Category_ID
5    order by Disease_ID;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

Disease_ID	Disease_Name	Category
4	Diabetes	Cardiovascular and Metabolic Disease
5	Obesity	Cardiovascular and Metabolic Disease
6	Parkinsons	Neuroscience
7	Alzheimers	Neuroscience
8	Hematologic	Rare Disease
9	Neuromascular	Rare Disease
10	AIDS	Vaccines
11	Hep C	Vaccines
12	Skin Cancer	Oncology
13	Breast Cancer	Oncology
14	Prostate Cancer	Oncology

2. Overview of all the Trials and the diseases they are on along with company names and cost
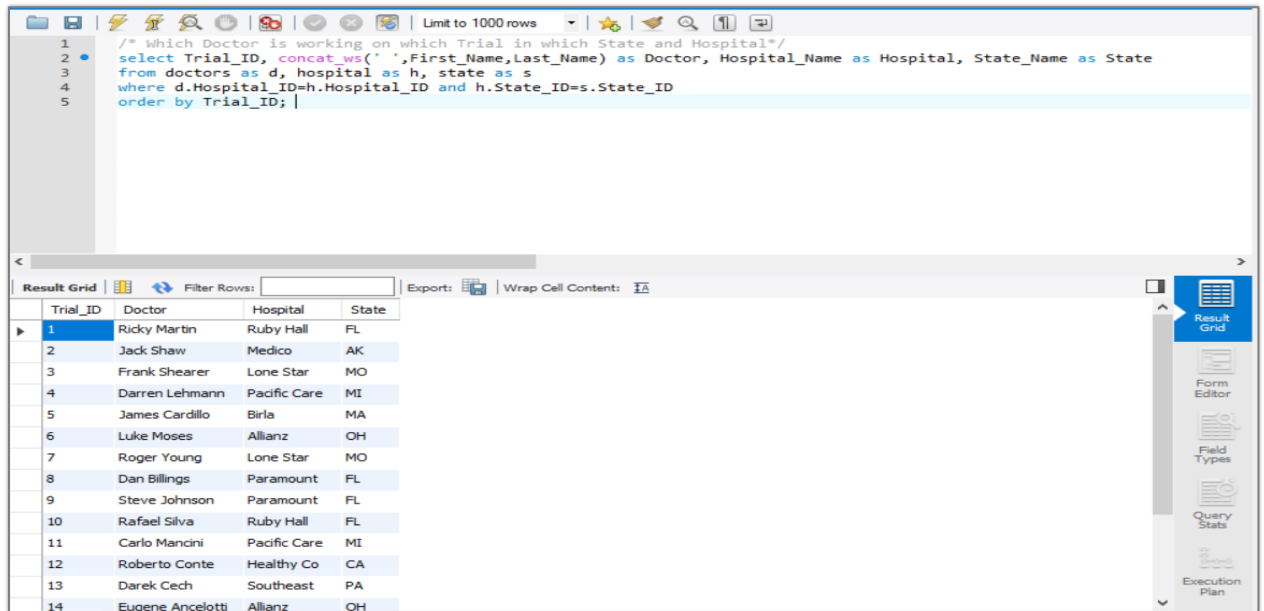
Limit to 1000 rows

```
1    /* Overview of all the Trials and the diseases they are on along with company names and costs */
2  • select Trial_ID, Company_Name, Disease_Name, Cat_Name, Estimated_Cost
3    from clinical_trial as ct, company as co, disease as d, disease_areas as da
4    where ct.Company_ID=co.Company_ID AND ct.Disease_ID=d.Disease_ID AND d.Disease_Category_ID= da.Disease_Category_ID
5    order by Trial_ID;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

Trial_ID	Company_Name	Disease_Name	Cat_Name	Estimated_Cost
1	Merck	GastroEnterology	Inflammation and Immunology	2500
2	Pfizer	Prostate Cancer	Oncology	2521
3	Regeneron	Rheumatology	Inflammation and Immunology	3450
4	Novartis	Obesity	Cardiovascular and Metabolic Disease	4531
5	Sanofi	Skin Cancer	Oncology	2580
6	Biogen	Parkinsons	Neuroscience	2000
7	GSK	Hep C	Vaccines	3000
8	Vertex	Alzheimers	Neuroscience	3100
9	Johnson & Johnson	Rheumatology	Inflammation and Immunology	2300
10	Sanofi	Neuromascular	Rare Disease	3245
11	Biogen	Neuromascular	Rare Disease	3465
12	Regeneron	Medical Dermatol...	Inflammation and Immunology	4000
13	Amgen	Medical Dermatol...	Inflammation and Immunology	4200
14	Vertex	Parkinsons	Neuroscience	3489
15	Johnson & Johnson	Alzheimers	Neuroscience	2690
16	Merck	Diabetes	Cardiovascular and Metabolic Disease	2500
17	Pfizer	AIDS	Vaccines	2800
18	GSK	GastroEnterology	Inflammation and Immunology	3100

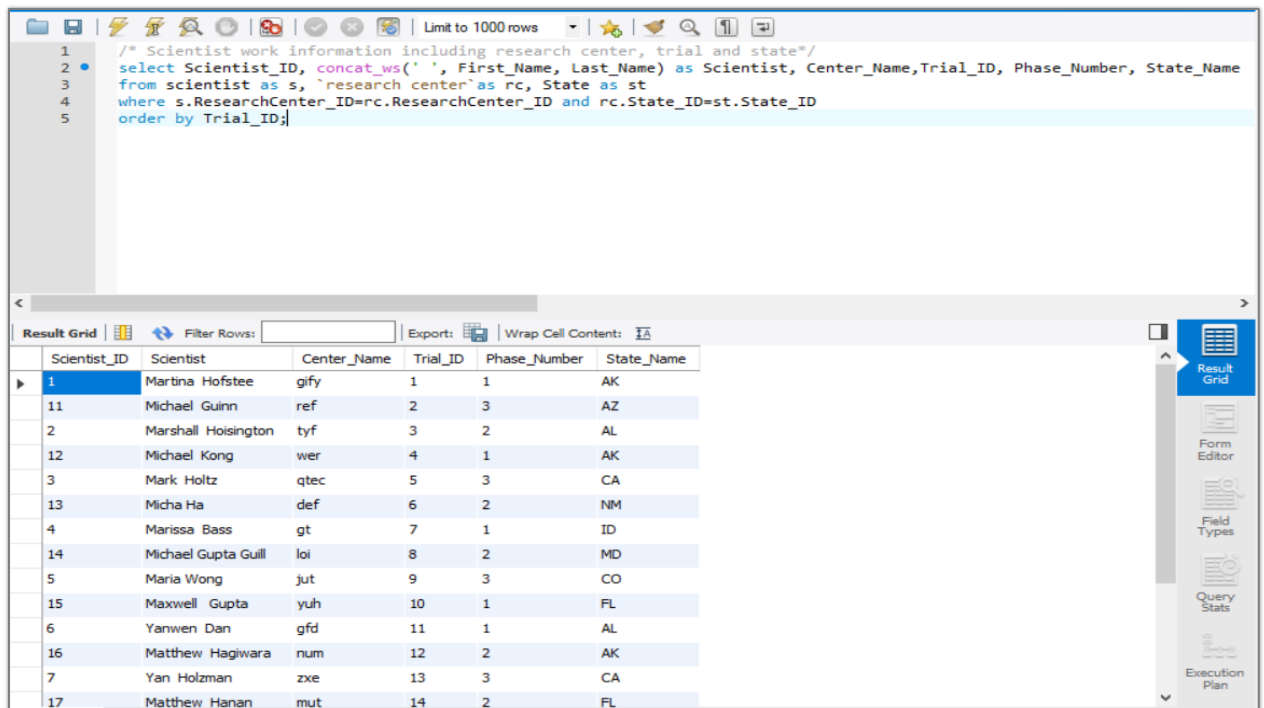3. Which Doctor is working on which Trial in which State and Hospital

```
1    /* Which Doctor is working on which Trial in which State and Hospital*/
2  • select Trial_ID, concat_ws(' ',First_Name,Last_Name) as Doctor, Hospital_Name as Hospital, State_Name as State
3    from doctors as d, hospital as h, state as s
4    where d.Hospital_ID=h.Hospital_ID and h.State_ID=s.State_ID
5    order by Trial_ID; |
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

Trial_ID	Doctor	Hospital	State
1	Ricky Martin	Ruby Hall	FL
2	Jack Shaw	Medico	AK
3	Frank Shearer	Lone Star	MO
4	Darren Lehmann	Pacific Care	MI
5	James Cardillo	Birla	MA
6	Luke Moses	Allianz	OH
7	Roger Young	Lone Star	MO
8	Dan Billings	Paramount	FL
9	Steve Johnson	Paramount	FL
10	Rafael Silva	Ruby Hall	FL
11	Carlo Mancini	Pacific Care	MI
12	Roberto Conte	Healthy Co	CA
13	Darek Cech	Southeast	PA
14	Eugene Ancelotti	Allianz	OH

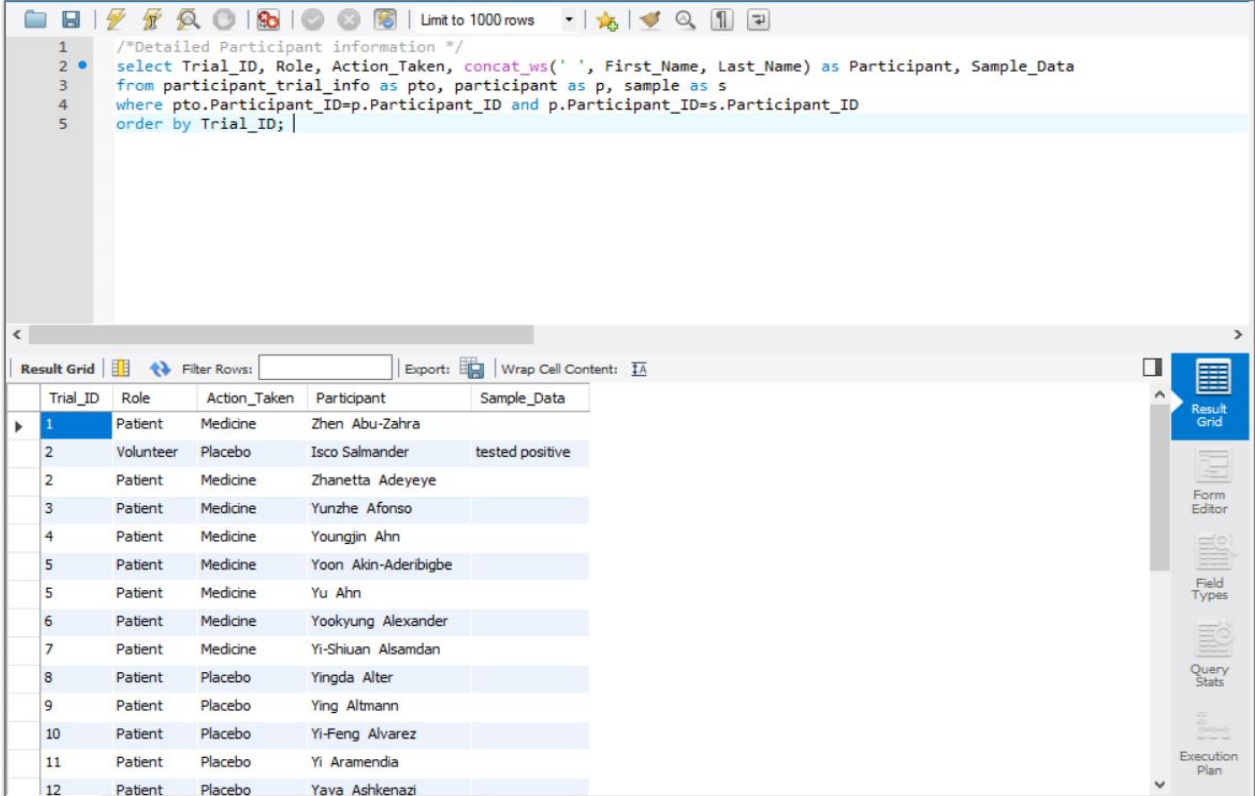4. Scientist work information including research center, trial and state

```
1    /* Scientist work information including research center, trial and state*/
2  • select Scientist_ID, concat_ws(' ', First_Name, Last_Name) as Scientist, Center_Name,Trial_ID, Phase_Number, State_Name
3    from scientist as s, `research center`as rc, State as st
4    where s.ResearchCenter_ID=rc.ResearchCenter_ID and rc.State_ID=st.State_ID
5    order by Trial_ID; |
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

Scientist_ID	Scientist	Center_Name	Trial_ID	Phase_Number	State_Name
1	Martina Hofstee	gify	1	1	AK
11	Michael Guinn	ref	2	3	AZ
2	Marshall Hoisington	tyf	3	2	AL
12	Michael Kong	wer	4	1	AK
3	Mark Holtz	qtec	5	3	CA
13	Micha Ha	def	6	2	NM
4	Marissa Bass	gt	7	1	ID
14	Michael Gupta Guill	loi	8	2	MD
5	Maria Wong	jut	9	3	CO
15	Maxwell Gupta	yuh	10	1	FL
6	Yanwen Dan	gfd	11	1	AL
16	Matthew Hagiwara	num	12	2	AK
7	Yan Holzman	zxe	13	3	CA
17	Matthew Hanan	mut	14	2	FL

Active Clinical Trial Database (ACT/DB)

5. Detailed Participant information


```
1   /*Detailed Participant information */
2 • select Trial_ID, Role, Action_Taken, concat_ws(' ', First_Name, Last_Name) as Participant, Sample_Data
3   from participant_trial_info as pto, participant as p, sample as s
4   where pto.Participant_ID=p.Participant_ID and p.Participant_ID=s.Participant_ID
5   order by Trial_ID;
```

Trial_ID	Role	Action_Taken	Participant	Sample_Data
1	Patient	Medicine	Zhen Abu-Zahra	
2	Volunteer	Placebo	Isco Salmander	tested positive
2	Patient	Medicine	Zhanetta Adeyeye	
3	Patient	Medicine	Yunzhe Afonso	
4	Patient	Medicine	Youngjin Ahn	
5	Patient	Medicine	Yoon Akin-Aderibigbe	
5	Patient	Medicine	Yu Ahn	
6	Patient	Medicine	Yookyung Alexander	
7	Patient	Medicine	Yi-Shiuan Alsamdan	
8	Patient	Placebo	Yingda Alter	
9	Patient	Placebo	Ying Altmann	
10	Patient	Placebo	Yi-Feng Alvarez	
11	Patient	Placebo	Yi Aramendia	
12	Patient	Placebo	Yava Ashkenazi	

Active Clinical Trial Database (ACT/DB)

Stored Procedures-

1. For finding which Drugs are produced by a company-
   create procedure Company_Drug(In CN varchar(30))
   begin
   select d.Drug_Name,c.Company_Name,d.disease_name from company c
   join
   drug d
   on d.Company_ID=c.Company_ID
   where CN=c.Company_Name;
   end //

   Call Company_Drug ()

```
2
3
4
5     Delimiter //
6 •   create procedure Company_Drug( In CN varchar(30))
7   ┌ begin
8   │  select d.Drug_Name,c.Company_Name,d.disease_name from company c
9   │  join
10  │  drug  d
11  │  on d.Company_ID=c.Company_ID
12  │  where CN=c.Company_Name;
13  └ end //
14
15 •   call Company_Drug('sanofi')
```
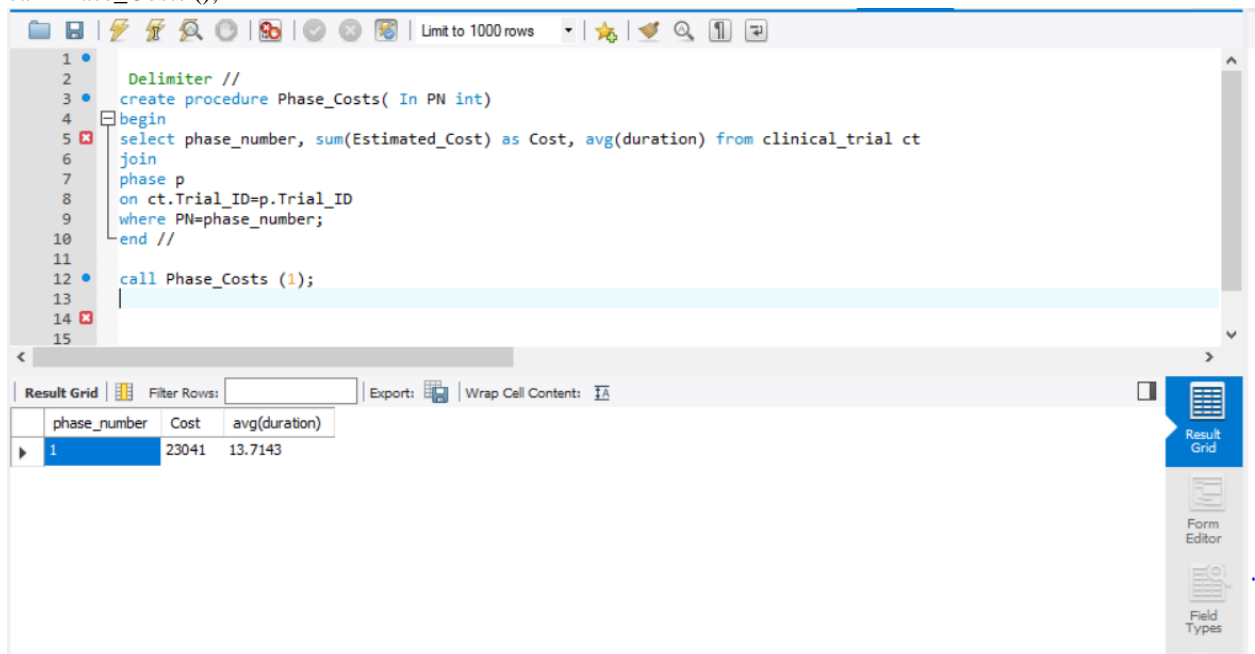
Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

Drug_Name	Company_Name	disease_name
B	Sanofi	GastroEnterology
K	Sanofi	Hep C

2. For finding cost for a particular phase and the average time for a particular phase-
   Delimiter //
   create procedure Phase_Costs(In PN int)
   begin
   select phase_number, sum(Estimated_Cost) as Cost, avg(duration) from clinical_trial ct
   join
   phase p
   on ct.Trial_ID=p.Trial_ID
   where PN=phase_number;
   end //
   call Phase_Costs ();

```
1
2      Delimiter //
3    create procedure Phase_Costs( In PN int)
4   begin
5    select phase_number, sum(Estimated_Cost) as Cost, avg(duration) from clinical_trial ct
6    join
7    phase p
8    on ct.Trial_ID=p.Trial_ID
9    where PN=phase_number;
10    end //
11
12    call Phase_Costs (1);
13    |
14
15
```

Limit to 1000 rows

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

phase_number	Cost	avg(duration)
1	23041	13.7143

Result Grid

Form Editor

Field Types

Triggers-

1. To find out the age of the participants when a new participant is added-

```
Delimiter //
CREATE  TRIGGER `New_Entry`
 before
 INSERT
 ON `Participant`
 FOR EACH ROW
 BEGIN
set new.Age= TIMESTAMPDIFF(YEAR,new.Date_Of_Birth,CURDATE());
END //
```

2. To validate the email address –
    CREATE TRIGGER `email_validation`
      BEFORE
      INSERT
      ON `DOCTORS`
      FOR EACH ROW
      BEGIN
        if new.Email not like '%_@%_._%'
        then
        signal sqlstate value '45000'
        set message_text ='The entered Email is invalid';
        end if;

    END
    ;//
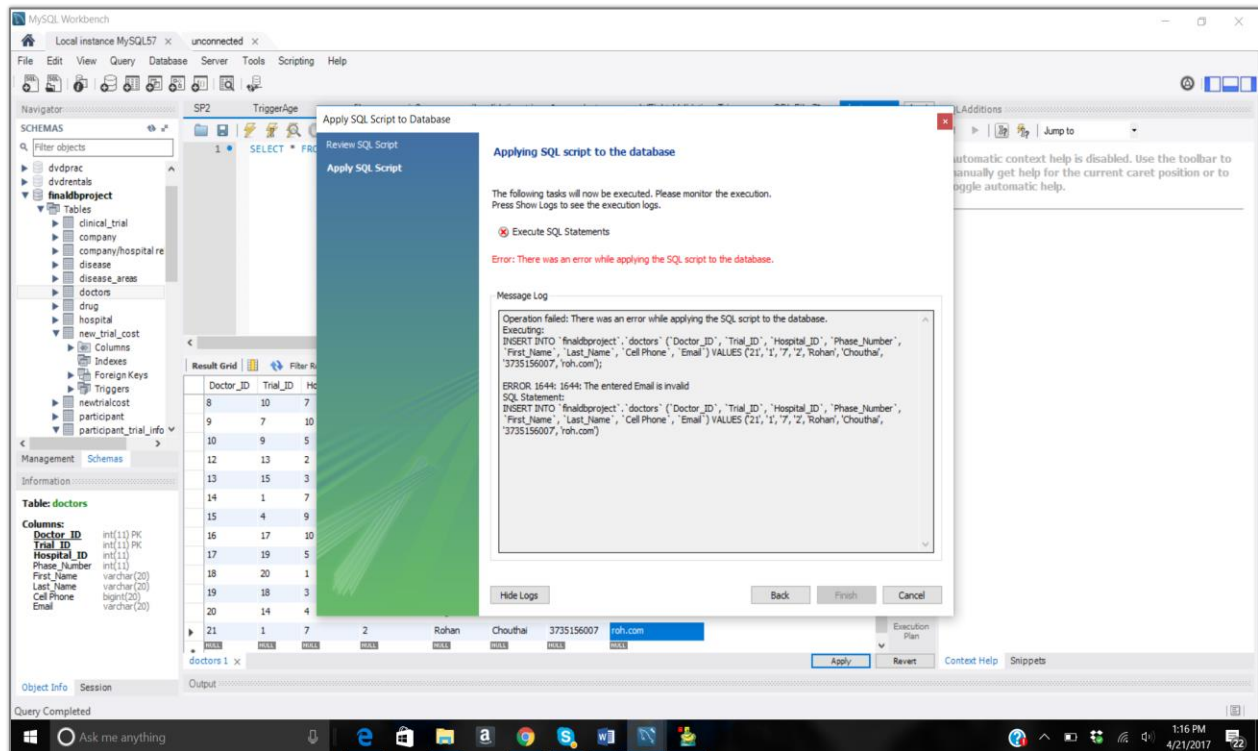
3. To validate the weight of the Participant-
    delimiter //
    CREATE TRIGGER `Weight_validation`
     BEFORE
     INSERT
     ON `participant`
     FOR EACH ROW
     BEGIN
       if new.Weight < '40'
       then
       signal sqlstate value '45000'
       set message_text ='The Participant is not fit for the Clinical Trial';
       end if;

    END
    ;//
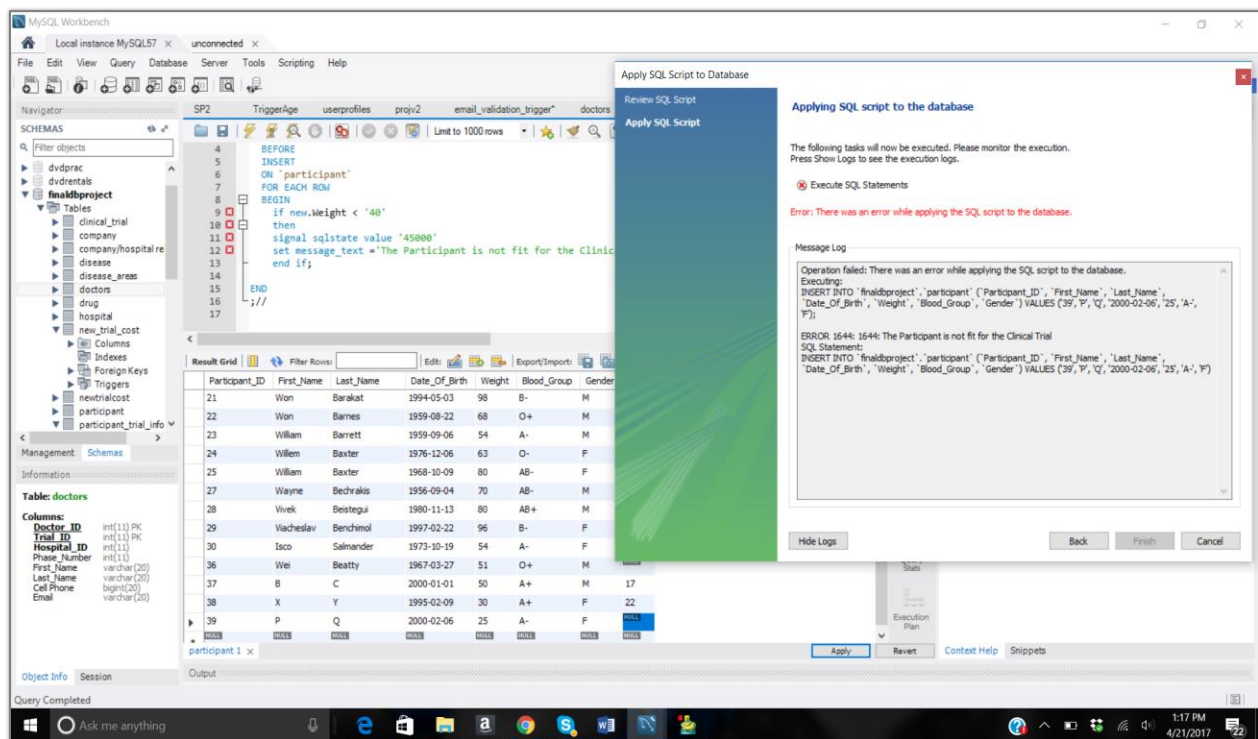
User Profiles-

1. create user Scientist identified by 'mysample';

Grant update on finaldbproject.Sample to Scientist;

Grant insert on finaldbproject.Sample to Scientist;

2. create user DataBase_Admin identified by 'admin';

grant all on finaldbproject.* to DataBase_Admin;

Dump file-

Dump

```
CREATE DATABASE  IF NOT EXISTS `finaldbproject` /*!40100 DEFAULT CHARACTER SET utf8 */;
USE `finaldbproject`;
-- MySQL dump 10.13  Distrib 5.7.12, for Win64 (x86_64)
--
-- Host: localhost    Database: finaldbproject
-- ------------------------------------------------------
-- Server version  5.7.17-log

/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!40101 SET NAMES utf8 */;
/*!40103 SET @OLD_TIME_ZONE=@@TIME_ZONE */;
/*!40103 SET TIME_ZONE='+00:00' */;
/*!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0 */;
/*!40014 SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS,
FOREIGN_KEY_CHECKS=0 */;
/*!40101 SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='NO_AUTO_VALUE_ON_ZERO' */;
/*!40111 SET @OLD_SQL_NOTES=@@SQL_NOTES, SQL_NOTES=0 */;


--
-- Table structure for table `clinical_trial`
--

DROP TABLE IF EXISTS `clinical_trial`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `clinical_trial` (
  `Trial_ID` int(11) NOT NULL,
  `Company_ID` int(11) NOT NULL,
  `StartDate` date NOT NULL,
  `Disease_ID` int(11) NOT NULL,
  `Estimated_Cost` bigint(20) DEFAULT NULL,
  PRIMARY KEY (`Trial_ID`),
  KEY `IX_Relationship15` (`Company_ID`),
  KEY `IX_Relationship4` (`Disease_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `clinical_trial`
--

LOCK TABLES `clinical_trial` WRITE;
/*!40000 ALTER TABLE `clinical_trial` DISABLE KEYS */;
INSERT INTO `clinical_trial` VALUES (1,1,'2000-01-01',2,2500),(2,3,'2002-02-12',14,2521),(3,6,'2016-03-05',1,3450),(4,8,'2017-01-01',5,4531),(5,2,'1990-01-02',12,2580),(6,4,'1995-05-09',6,2000),(7,5,'2009-08-12',11,3000),(8,9,'2011-05-01',7,3100),(9,10,'1989-01-01',1,2300),(10,2,'2003-01-01',9,3245),(11,4,'1995-05-06',9,3465),(12,6,'2006-02-01',3,4000),(13,7,'2000-01-01',3,4200),(14,9,'1995-05-01',6,3489),(15,10,'2005-12-01',7,2690),(16,1,'1993-07-16',4,2500),(17,3,'1994-10-29',10,2800),(18,5,'2000-08-29',2,3100),(19,7,'2002-05-05',10,3200),(20,9,'2000-12-06',12,2670),(21,21,'2005-04-09',16,2009),(22,10,'2006-04-02',2,3000);
/*!40000 ALTER TABLE `clinical_trial` ENABLE KEYS */;
UNLOCK TABLES;
```

```
--
-- Table structure for table `company`
--

DROP TABLE IF EXISTS `company`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `company` (
  `Company_ID` int(11) NOT NULL,
  `Company_Name` varchar(30) DEFAULT NULL,
  PRIMARY KEY (`Company_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `company`
--

LOCK TABLES `company` WRITE;
/*!40000 ALTER TABLE `company` DISABLE KEYS */;
INSERT INTO `company` VALUES
(1,'Merck'),(2,'Sanofi'),(3,'Pfizer'),(4,'Biogen'),(5,'GSK'),(6,'Regeneron'),(7,'Amgen'),(8,'Novartis'),(9,'Vertex'),(10,'J
ohnson & Johnson');
/*!40000 ALTER TABLE `company` ENABLE KEYS */;
UNLOCK TABLES;


--
-- Table structure for table `company/hospital relationship`
--

DROP TABLE IF EXISTS `company/hospital relationship`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `company/hospital relationship` (
  `Company_ID` int(11) NOT NULL,
  `Hospital_ID` int(11) NOT NULL,
  PRIMARY KEY (`Company_ID`,`Hospital_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `company/hospital relationship`
--

LOCK TABLES `company/hospital relationship` WRITE;
/*!40000 ALTER TABLE `company/hospital relationship` DISABLE KEYS */;
INSERT INTO `company/hospital relationship` VALUES
(1,1),(1,2),(2,3),(2,4),(3,1),(3,2),(4,1),(4,5),(5,1),(5,7),(6,1),(6,3),(7,1),(7,3),(8,9),(8,10),(9,6),(10,7);
/*!40000 ALTER TABLE `company/hospital relationship` ENABLE KEYS */;
UNLOCK TABLES;


--
-- Table structure for table `disease`
--
```

```
DROP TABLE IF EXISTS `disease`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `disease` (
  `Disease_ID` int(11) NOT NULL,
  `Disease_Name` varchar(30) DEFAULT NULL,
  `Disease_Category_ID` int(11) DEFAULT NULL,
  PRIMARY KEY (`Disease_ID`),
  KEY `IX_Relationship2` (`Disease_Category_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `disease`
--

LOCK TABLES `disease` WRITE;
/*!40000 ALTER TABLE `disease` DISABLE KEYS */;
INSERT INTO `disease` VALUES (1,'Rheumatology',1),(2,'GastroEnterology',1),(3,'Medical
Dermatology',1),(4,'Diabetes',2),(5,'Obesity',2),(6,'Parkinsons',3),(7,'Alzheimers',3),(8,'Hematologic',4),(9,'Neuroma
scular',4),(10,'AIDS',5),(11,'Hep C',5),(12,'Skin Cancer',6),(13,'Breast Cancer',6),(14,'Prostate Cancer',6);
/*!40000 ALTER TABLE `disease` ENABLE KEYS */;
UNLOCK TABLES;


--
-- Table structure for table `disease_areas`
--

DROP TABLE IF EXISTS `disease_areas`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `disease_areas` (
  `Disease_Category_ID` int(11) NOT NULL,
  `Cat_Name` varchar(100) DEFAULT NULL,
  PRIMARY KEY (`Disease_Category_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `disease_areas`
--

LOCK TABLES `disease_areas` WRITE;
/*!40000 ALTER TABLE `disease_areas` DISABLE KEYS */;
INSERT INTO `disease_areas` VALUES (1,'Inflammation and Immunology'),(2,'Cardiovascular and Metabolic
Disease'),(3,'Neuroscience'),(4,'Rare Disease'),(5,'Vaccines'),(6,'Oncology');
/*!40000 ALTER TABLE `disease_areas` ENABLE KEYS */;
UNLOCK TABLES;


--
-- Table structure for table `doctors`
--

DROP TABLE IF EXISTS `doctors`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
```

```
CREATE TABLE `doctors` (
 `Doctor_ID` int(11) NOT NULL,
 `Trial_ID` int(11) NOT NULL,
 `Hospital_ID` int(11) NOT NULL,
 `Phase_Number` int(11) NOT NULL,
 `First_Name` varchar(20) NOT NULL,
 `Last_Name` varchar(20) NOT NULL,
 `Cell Phone` bigint(20) DEFAULT NULL,
 `Email` varchar(20) DEFAULT NULL,
 PRIMARY KEY (`Doctor_ID`,`Trial_ID`),
 KEY `IX_Relationship16` (`Hospital_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `doctors`
--

LOCK TABLES `doctors` WRITE;
/*!40000 ALTER TABLE `doctors` DISABLE KEYS */;
INSERT INTO `doctors` VALUES
(1,2,3,1,'Jack','Shaw',6671325189,'shaw.j@med.com'),(2,3,10,1,'Frank','Shearer',4787852487,'Shearer.f@med.com')
,(3,6,4,3,'Luke','Moses',6755461110,'Moses.l@med.com'),(4,8,5,2,'Dan','Billings',4956710280,'Billings.D@med.co
m'),(5,12,8,1,'Roberto','Conte',5221714902,'Conte.R@med.com'),(6,11,9,2,'Carlo','Mancini',5330122146,'Mancini.C
@med.com'),(7,5,6,3,'James','Cardillo',3493894200,'Cardillo.J@med.com'),(8,10,7,3,'Rafael','Silva',8205789677,'sil
va.Rj@med.com'),(9,7,10,3,'Roger','Young',5615356841,'young.r@med.com'),(10,9,5,2,'Steve','Johnson',628091897
3,'johnson.s@med.com'),(12,13,2,1,'Darek','Cech',1815345598,'cech.d@med.com'),(13,15,3,2,'Stefen','Nzonzi',1784
981155,'nzonzi.s@med.com'),(14,1,7,1,'Ricky','Martin',2542795962,'martin.r@med.com'),(15,4,9,2,'Darren','Lehma
nn',1267061052,'lehmann.d@med.com'),(16,17,10,2,'Elena','Williams',9411523257,'williams.e@med.com'),(17,19,5
,3,'Victoria','Stone',4595211736,'stone.v@med.com'),(18,20,1,1,'Emma','Wilkins',8092139806,'wilkins.e@med.com'
),(19,18,3,2,'Carolina','Martinez',6024143780,'martinez.c@med.com'),(20,14,4,3,'Eugene','Ancelotti',6318635942,'a
ncelotti.e@med.com');
/*!40000 ALTER TABLE `doctors` ENABLE KEYS */;
UNLOCK TABLES;
/*!50003 SET @saved_cs_client      = @@character_set_client */ ;
/*!50003 SET @saved_cs_results     = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client  = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection  = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode       = @@sql_mode */ ;
/*!50003 SET sql_mode            =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER `email_validation`
 BEFORE
 INSERT
 ON `DOCTORS`
 FOR EACH ROW
 BEGIN
  if new.Email not like '%_@%_._%'
  then
  signal sqlstate value '45000'
  set message_text ='The entered Email is invalid';
  end if;
```

```
END */;;
DELIMITER ;
/*!50003 SET sql_mode            = @saved_sql_mode */ ;
/*!50003 SET character_set_client  = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection  = @saved_col_connection */ ;


--
-- Table structure for table `drug`
--

DROP TABLE IF EXISTS `drug`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `drug` (
  `Drug_Name` varchar(20) NOT NULL,
  `Disease_ID` int(11) NOT NULL,
  `Company_ID` int(11) NOT NULL,
  `Disease_Name` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`Drug_Name`),
  KEY `IX_Relationship3` (`Disease_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `drug`
--

LOCK TABLES `drug` WRITE;
/*!40000 ALTER TABLE `drug` DISABLE KEYS */;
INSERT INTO `drug` VALUES ('A',1,1,'Rheumatology'),('B',2,2,'GastroEnterology'),('C',3,3,'Medical
Dermatology'),('D',4,4,'Diabetes'),('E',5,5,'Obesity'),('F',6,10,'Parkinsons'),('G',7,6,'Alzheimers'),('H',8,7,'Hematologi
c'),('I',9,8,'Neuromascular'),('J',10,9,'AIDS'),('K',11,2,'Hep C'),('L',12,4,'Skin Cancer'),('M',13,6,'Breast
Cancer'),('N',14,7,'Prostate Cancer');
/*!40000 ALTER TABLE `drug` ENABLE KEYS */;
UNLOCK TABLES;


--
-- Table structure for table `hospital`
--

DROP TABLE IF EXISTS `hospital`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `hospital` (
  `Hospital_ID` int(11) NOT NULL,
  `Hospital_Name` varchar(30) DEFAULT NULL,
  `State_ID` int(11) NOT NULL,
  PRIMARY KEY (`Hospital_ID`),
  KEY `IX_Relationship3` (`State_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `hospital`
--
```

Active Clinical Trial Database (ACT/DB)

```
LOCK TABLES `hospital` WRITE;
/*!40000 ALTER TABLE `hospital` DISABLE KEYS */;
INSERT INTO `hospital` VALUES (1,'New England
Care',21),(2,'Southeast',38),(3,'Medico',2),(4,'Allianz',35),(5,'Paramount',9),(6,'Birla',21),(7,'Ruby
Hall',9),(8,'Healthy Co',5),(9,'Pacific Care',22),(10,'Lone Star',25);
/*!40000 ALTER TABLE `hospital` ENABLE KEYS */;
UNLOCK TABLES;


--
-- Table structure for table `new_trial_cost`
--

DROP TABLE IF EXISTS `new_trial_cost`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `new_trial_cost` (
  `Trial_ID` int(11) NOT NULL,
  `Estimated_Cost` bigint(20) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `new_trial_cost`
--

LOCK TABLES `new_trial_cost` WRITE;
/*!40000 ALTER TABLE `new_trial_cost` DISABLE KEYS */;
/*!40000 ALTER TABLE `new_trial_cost` ENABLE KEYS */;
UNLOCK TABLES;
/*!50003 SET @saved_cs_client      = @@character_set_client */ ;
/*!50003 SET @saved_cs_results     = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client  = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection  = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode       = @@sql_mode */ ;
/*!50003 SET sql_mode              =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER `Before_Update`
  BEFORE
  INSERT
  ON `New_Trial_Cost`
  FOR EACH ROW
  BEGIN
   set @newTrialID=Trial_ID;
   set @newCost= Estimated_Cost;
END */;;
DELIMITER ;
/*!50003 SET sql_mode              = @saved_sql_mode */ ;
/*!50003 SET character_set_client  = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection  = @saved_col_connection */ ;


--
```

-- Table structure for table `newtrialcost`
--

DROP TABLE IF EXISTS `newtrialcost`;
/*!40101 SET @saved_cs_client   = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `newtrialcost` (
  `Trial_ID` int(11) NOT NULL,
  `Estimated_Cost` bigint(20) DEFAULT NULL,
  PRIMARY KEY (`Trial_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `newtrialcost`
--

LOCK TABLES `newtrialcost` WRITE;
/*!40000 ALTER TABLE `newtrialcost` DISABLE KEYS */;
/*!40000 ALTER TABLE `newtrialcost` ENABLE KEYS */;
UNLOCK TABLES;

--
-- Table structure for table `participant`
--

DROP TABLE IF EXISTS `participant`;
/*!40101 SET @saved_cs_client   = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `participant` (
  `Participant_ID` int(11) NOT NULL,
  `First_Name` varchar(20) NOT NULL,
  `Last_Name` varchar(20) NOT NULL,
  `Date_Of_Birth` date NOT NULL,
  `Weight` int(11) NOT NULL,
  `Blood_Group` char(20) NOT NULL,
  `Gender` char(20) NOT NULL,
  `Age` int(11) DEFAULT NULL,
  PRIMARY KEY (`Participant_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `participant`
--

LOCK TABLES `participant` WRITE;
/*!40000 ALTER TABLE `participant` DISABLE KEYS */;
INSERT INTO `participant` VALUES (1,'Zhen ','Abu-Zahra','1967-12-23',90,'A+','M',NULL),(2,'Zhanetta ','Adeyeye','1962-08-17',50,'B+','F',NULL),(3,'Yunzhe ','Afonso','1956-05-07',40,'O-','F',NULL),(4,'Youngjin ','Ahn','1997-12-05',56,'AB+','F',NULL),(5,'Yu ','Ahn','1995-08-08',67,'B-','M',NULL),(6,'Yoon ','Akin-Aderibigbe','1971-12-30',89,'A-','M',NULL),(7,'Yookyung ','Alexander','1985-02-13',67,'O-','F',NULL),(8,'Yi-Shiuan ','Alsamdan','1950-06-13',45,'AB+','F',NULL),(9,'Yingda ','Alter','1955-02-17',40,'B-','M',NULL),(10,'Ying ','Altmann','1964-02-29',61,'AB-','M',NULL),(11,'Yi-Feng ','Alvarez','1954-02-13',54,'A+','F',NULL),(12,'Yi ','Aramendia','1974-10-31',91,'AB+','F',NULL),(13,'Yaya ','Ashkenazi','1974-11-26',78,'AB-','M',NULL),(14,'Yat-Lun ','Atri','1987-01-17',90,'O-','M',NULL),(15,'Yasuhiro ','Au','1954-04-22',40,'B-','F',NULL),(16,'Yanwen

','Aurori','1956-08-06',55,'A+','F',NULL),(17,'Yan ','Austin','1986-09-04',64,'AB-','M',NULL),(18,'Ya-Han ','Bagdat','1994-02-04',89,'A-','F',NULL),(19,'Yael',' Bala','1979-02-22',72,'O+','F',NULL),(20,'Wushen ','Banovac','1994-06-10',40,'AB+','F',NULL),(21,'Won ','Barakat','1994-05-03',98,'B-','M',NULL),(22,'Won ','Barnes','1959-08-22',68,'O+','M',NULL),(23,'William ','Barrett','1959-09-06',54,'A-','M',NULL),(24,'Willem ','Baxter','1976-12-06',63,'O-','F',NULL),(25,'William ','Baxter','1968-10-09',80,'AB-','F',NULL),(27,'Wayne ','Bechrakis','1956-09-04',70,'AB-','M',NULL),(28,'Vivek ','Beistegui','1980-11-13',80,'AB+','M',NULL),(29,'Viacheslav ','Benchimol','1997-02-22',96,'B-','F',NULL),(30,'Isco','Salmander','1973-10-19',54,'A-','F',NULL),(36,'Wei ','Beatty','1967-03-27',51,'O+','M',NULL),(37,'B','C','2000-01-01',50,'A+','M',17),(38,'X','Y','1995-02-09',30,'A+','F',22),(39,'P','Q','2000-02-06',50,'A-','F',17);
/*!40000 ALTER TABLE `participant` ENABLE KEYS */;
UNLOCK TABLES;
/*!50003 SET @saved_cs_client   = @@character_set_client */ ;
/*!50003 SET @saved_cs_results   = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode   = @@sql_mode */ ;
/*!50003 SET sql_mode   =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER `New_Entry`
 before
 INSERT
 ON `Participant`
 FOR EACH ROW
 BEGIN
 set new.Age= TIMESTAMPDIFF(YEAR,new.Date_Of_Birth,CURDATE());

END */;;
DELIMITER ;
/*!50003 SET sql_mode   = @saved_sql_mode */ ;
/*!50003 SET character_set_client = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection = @saved_col_connection */ ;
/*!50003 SET @saved_cs_client   = @@character_set_client */ ;
/*!50003 SET @saved_cs_results   = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode   = @@sql_mode */ ;
/*!50003 SET sql_mode   =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER `Weight_validation`
 BEFORE
 INSERT
 ON `participant`
 FOR EACH ROW
 BEGIN
  if new.Weight < '40'
  then
  signal sqlstate value '45000'
  set message_text ='The Participant is not fit for the Clinical Trial';
  end if;

```
END */;;
DELIMITER ;
/*!50003 SET sql_mode            = @saved_sql_mode */ ;
/*!50003 SET character_set_client  = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection  = @saved_col_connection */ ;


--
-- Table structure for table `participant_trial_info`
--

DROP TABLE IF EXISTS `participant_trial_info`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `participant_trial_info` (
  `Participant_ID` int(11) NOT NULL,
  `Trial_ID` int(11) NOT NULL,
  `Phase_Number` int(11) NOT NULL,
  `Role` varchar(20) NOT NULL,
  `Action_Taken` varchar(20) NOT NULL,
  PRIMARY KEY (`Participant_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `participant_trial_info`
--

LOCK TABLES `participant_trial_info` WRITE;
/*!40000 ALTER TABLE `participant_trial_info` DISABLE KEYS */;
INSERT INTO `participant_trial_info` VALUES
(1,1,1,'Patient','Medicine'),(2,2,3,'Patient','Medicine'),(3,3,2,'Patient','Medicine'),(4,4,1,'Patient','Medicine'),(5,5,3,'Pa
tient','Medicine'),(6,5,3,'Patient','Medicine'),(7,6,2,'Patient','Medicine'),(8,7,1,'Patient','Medicine'),(9,8,2,'Patient','Pla
cebo'),(10,9,3,'Patient','Placebo'),(11,10,1,'Patient','Placebo'),(12,11,1,'Patient','Placebo'),(13,12,2,'Patient','Placebo'),
(14,13,3,'Patient','Placebo'),(15,14,2,'Patient','Placebo'),(16,14,2,'Patient','Placebo'),(17,15,2,'Patient','Placebo'),(18,1
5,2,'Volunteer','Medicine'),(19,16,3,'Volunteer','Medicine'),(20,16,3,'Volunteer','Medicine'),(21,16,3,'Volunteer','Me
dicine'),(22,17,3,'Volunteer','Medicine'),(23,17,3,'Volunteer','Medicine'),(24,17,3,'Volunteer','Medicine'),(25,18,1,'V
olunteer','Medicine'),(27,19,1,'Volunteer','Placebo'),(28,20,2,'Volunteer','Placebo'),(29,20,2,'Volunteer','Placebo'),(30
,2,3,'Volunteer','Placebo'),(36,18,1,'Volunteer','Placebo'),(37,2,3,'Volunteer','Placeba'),(38,3,2,'Volunteer','Placebo');
/*!40000 ALTER TABLE `participant_trial_info` ENABLE KEYS */;
UNLOCK TABLES;
/*!50003 SET @saved_cs_client     = @@character_set_client */ ;
/*!50003 SET @saved_cs_results     = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client  = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection  = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode      = @@sql_mode */ ;
/*!50003 SET sql_mode         =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER `Participant_Info_Add`
  AFTER
  INSERT
  ON `finaldbproject`.`participant_trial_info`
```

```
  FOR EACH ROW
  BEGIN
  declare NewName int;
  declare NEwRole varchar(20);
  select participant_trial_info.Participant_ID into NewName from participant_trial_info;
  select participant_trial_info.Role into NewRole from participant_trial_info;
    insert into participant_update
    values (NewName,NewRole);
END */;;
DELIMITER ;
/*!50003 SET sql_mode            = @saved_sql_mode */ ;
/*!50003 SET character_set_client = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection  = @saved_col_connection */ ;


--
-- Table structure for table `participant_update`
--

DROP TABLE IF EXISTS `participant_update`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `participant_update` (
 `Participant_ID` int(11) NOT NULL,
 `Role` varchar(20) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `participant_update`
--

LOCK TABLES `participant_update` WRITE;
/*!40000 ALTER TABLE `participant_update` DISABLE KEYS */;
/*!40000 ALTER TABLE `participant_update` ENABLE KEYS */;
UNLOCK TABLES;


--
-- Table structure for table `phase`
--

DROP TABLE IF EXISTS `phase`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `phase` (
 `Trial_ID` int(11) NOT NULL,
 `Phase_Number` int(11) NOT NULL,
 `Duration` int(11) NOT NULL,
  PRIMARY KEY (`Trial_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `phase`
--
```

```
LOCK TABLES `phase` WRITE;
/*!40000 ALTER TABLE `phase` DISABLE KEYS */;
INSERT INTO `phase` VALUES
(1,1,17),(2,3,2),(3,2,5),(4,1,15),(5,3,4),(6,2,10),(7,1,16),(8,2,11),(9,3,3),(10,1,15),(11,1,16),(12,2,12),(13,3,5),(14,2,1
2),(15,2,11),(16,3,5),(17,3,1),(18,1,2),(19,1,15),(20,2,11);
/*!40000 ALTER TABLE `phase` ENABLE KEYS */;
UNLOCK TABLES;


--
-- Table structure for table `research center`
--

DROP TABLE IF EXISTS `research center`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `research center` (
  `ResearchCenter_ID` int(11) NOT NULL,
  `Center_Name` varchar(30) DEFAULT NULL,
  `Trial_ID` int(11) NOT NULL,
  `Phase_Number` int(11) NOT NULL,
  `Company_ID` int(11) DEFAULT NULL,
  `State_ID` int(11) DEFAULT NULL,
  PRIMARY KEY (`ResearchCenter_ID`),
  KEY `IX_Relationship7` (`State_ID`),
  KEY `IX_Relationship8` (`Company_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `research center`
--

LOCK TABLES `research center` WRITE;
/*!40000 ALTER TABLE `research center` DISABLE KEYS */;
INSERT INTO `research center` VALUES
(1,'gify',1,1,1,2),(2,'ref',2,3,3,3),(3,'tyf',3,2,2,1),(4,'wer',4,1,4,2),(5,'qtec',5,3,5,5),(6,'def',6,2,6,31),(7,'gt',7,1,7,12),(8,'l
oi',8,2,8,20),(9,'jut',9,3,9,6),(10,'yuh',10,1,10,9),(11,'gfd',11,1,2,1),(12,'num',12,2,4,2),(13,'zxe',13,3,5,5),(14,'mut',14,
2,10,9),(15,'dro',15,2,5,5),(16,'wqs',16,3,3,3),(17,'pol',17,3,1,2),(18,'ret',18,1,4,2),(19,'azx',19,1,6,31),(20,'mno',20,2,
8,20);
/*!40000 ALTER TABLE `research center` ENABLE KEYS */;
UNLOCK TABLES;


--
-- Table structure for table `sample`
--

DROP TABLE IF EXISTS `sample`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `sample` (
  `Sample_ID` int(11) NOT NULL,
  `Participant_ID` int(11) NOT NULL,
  `ResearchCenter_ID` int(11) NOT NULL,
  `Scientist_ID` tinyint(4) NOT NULL,
  `Sample_Data` varchar(20) DEFAULT NULL,
  PRIMARY KEY (`Sample_ID`),
```

```
  KEY `IX_Relationship11` (`Scientist_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
-- Dumping data for table `sample`
--

LOCK TABLES `sample` WRITE;
/*!40000 ALTER TABLE `sample` DISABLE KEYS */;
INSERT INTO `sample` VALUES (1,30,1,1,'tested
positive'),(2,20,3,2,''),(3,3,2,1,''),(4,16,5,3,''),(5,27,4,2,''),(6,6,7,1,''),(7,24,6,6,''),(8,8,9,7,''),(9,18,8,10,''),(10,22,11,9,'')
,(11,15,12,11,''),(12,12,13,13,''),(13,19,12,15,''),(14,28,15,10,''),(15,11,14,16,''),(16,4,17,17,''),(17,17,16,18,''),(18,9,1
9,19,''),(19,13,18,20,''),(20,2,5,1,''),(21,21,20,3,''),(22,10,6,14,''),(23,7,3,7,''),(24,23,1,20,''),(25,36,15,9,''),(27,5,9,2,''),
(28,29,12,9,''),(29,14,19,7,''),(30,1,7,4,''),(36,25,6,12,'');
/*!40000 ALTER TABLE `sample` ENABLE KEYS */;
UNLOCK TABLES;
/*!50003 SET @saved_cs_client     = @@character_set_client */ ;
/*!50003 SET @saved_cs_results    = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client  = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection  = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode      = @@sql_mode */ ;
/*!50003 SET sql_mode            =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER `Insert_Info_Trigger`
 AFTER
 INSERT
 ON `SAMPLE`
 FOR EACH ROW
 BEGIN
  insert into sample_update_log
  values (Scientist_ID(),ResearchCenter_ID());
END */;;
DELIMITER ;
/*!50003 SET sql_mode            = @saved_sql_mode */ ;
/*!50003 SET character_set_client  = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection  = @saved_col_connection */ ;


--
-- Table structure for table `sample_update_log`
--

DROP TABLE IF EXISTS `sample_update_log`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `sample_update_log` (
 `Scientist_ID` int(11) NOT NULL,
 `ResearchCenter_ID` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;


--
```

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-- Dumping data for table `sample_update_log`
--

LOCK TABLES `sample_update_log` WRITE;
/*!40000 ALTER TABLE `sample_update_log` DISABLE KEYS */;
/*!40000 ALTER TABLE `sample_update_log` ENABLE KEYS */;
UNLOCK TABLES;

--
-- Table structure for table `scientist`
--

DROP TABLE IF EXISTS `scientist`;
/*!40101 SET @saved_cs_client   = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `scientist` (
  `Scientist_ID` tinyint(4) NOT NULL,
  `First_Name` varchar(20) NOT NULL,
  `Last_Name` varchar(20) NOT NULL,
  `Disease` varchar(20) NOT NULL,
  `ResearchCenter_ID` int(11) NOT NULL,
  PRIMARY KEY (`Scientist_ID`),
  KEY `IX_Relationship13` (`ResearchCenter_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `scientist`
--

LOCK TABLES `scientist` WRITE;
/*!40000 ALTER TABLE `scientist` DISABLE KEYS */;
INSERT INTO `scientist` VALUES (1,'Martina ','Hofstee','1',1),(2,'Marshall ','Hoisington','4',3),(3,'Mark
','Holtz','5',5),(4,'Marissa ','Bass','3',7),(5,'Maria','Wong','2',9),(6,'Yanwen ','Dan','7',11),(7,'Yan
','Holzman','9',13),(8,'Ya-Han ','Liha','8',15),(9,'Yael','Ross','10',17),(10,'Wushen ',' Hong','12',19),(11,'Michael
','Guinn','11',2),(12,'Michael ','Kong','15',4),(13,'Micha','Ha','14',6),(14,'Michael Gupta','Guill','16',8),(15,'Maxwell ','
Gupta','18',10),(16,'Matthew ','Hagiwara','17',12),(17,'Matthew ','Hanan','19',14),(18,'Matthew
','Darwin','20',16),(19,'Matthew ','Fazer','6',18),(20,'Josh','King','13',20);
/*!40000 ALTER TABLE `scientist` ENABLE KEYS */;
UNLOCK TABLES;

--
-- Table structure for table `state`
--

DROP TABLE IF EXISTS `state`;
/*!40101 SET @saved_cs_client   = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `state` (
  `State_ID` int(11) NOT NULL,
  `State_Name` varchar(30) DEFAULT NULL,
  PRIMARY KEY (`State_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--

Active Clinical Trial Database (ACT/DB)

-- Dumping data for table `state`
--

LOCK TABLES `state` WRITE;
/*!40000 ALTER TABLE `state` DISABLE KEYS */;
INSERT INTO `state` VALUES
(1,'AL'),(2,'AK'),(3,'AZ'),(4,'AR'),(5,'CA'),(6,'CO'),(7,'CT'),(8,'DE'),(9,'FL'),(10,'GA'),(11,'HI'),(12,'ID'),(13,'IL'),(14,'IN'),(15,'IA'),(16,'KS'),(17,'KY'),(18,'LA'),(19,'ME'),(20,'MD'),(21,'MA'),(22,'MI'),(23,'MN'),(24,'MS'),(25,'MO'),(26,'MT'),(27,'NE'),(28,'NV'),(29,'NH'),(30,'NJ'),(31,'NM'),(32,'NY'),(33,'NC'),(34,'ND'),(35,'OH'),(36,'OK'),(37,'OR'),(38,'PA'),(39,'RI'),(40,'SC'),(41,'SD'),(42,'TN'),(43,'TX'),(44,'UT'),(45,'VT'),(46,'VA'),(47,'WA'),(48,'WV'),(49,'WI'),(50,'WY');
/*!40000 ALTER TABLE `state` ENABLE KEYS */;
UNLOCK TABLES;

--
-- Table structure for table `state/clinical trial`
--

DROP TABLE IF EXISTS `state/clinical trial`;
/*!40101 SET @saved_cs_client   = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `state/clinical trial` (
  `Trial_ID` int(11) NOT NULL,
  `State_ID` int(11) NOT NULL,
  `Phase_Number` int(11) NOT NULL,
  PRIMARY KEY (`Trial_ID`,`State_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `state/clinical trial`
--

LOCK TABLES `state/clinical trial` WRITE;
/*!40000 ALTER TABLE `state/clinical trial` DISABLE KEYS */;
INSERT INTO `state/clinical trial` VALUES
(1,4,1),(2,5,3),(3,8,2),(4,25,1),(5,12,3),(6,8,2),(7,10,1),(8,3,2),(9,22,3),(10,4,1),(11,4,1),(12,50,2),(13,26,3),(14,4,2),(15,17,2),(16,19,3),(17,29,3),(18,37,1),(19,44,1),(20,48,2);
/*!40000 ALTER TABLE `state/clinical trial` ENABLE KEYS */;
UNLOCK TABLES;

--
-- Dumping events for database 'finaldbproject'
--

--
-- Dumping routines for database 'finaldbproject'
--
/*!50003 DROP PROCEDURE IF EXISTS `CompanyDisease` */;
/*!50003 SET @saved_cs_client   = @@character_set_client */ ;
/*!50003 SET @saved_cs_results   = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode   = @@sql_mode */ ;

```
/*!50003 SET sql_mode              =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
CREATE DEFINER=`root`@`localhost` PROCEDURE `CompanyDisease`(in Disease_Name varchar(30))
Begin
select Company_ID, Disease_Name
from clinical_trial
inner join disease
on clinical_trial.Disease_ID=disease.Disease_ID
where Disease_Name='Obesity';
End ;;
DELIMITER ;
/*!50003 SET sql_mode             = @saved_sql_mode */ ;
/*!50003 SET character_set_client  = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection  = @saved_col_connection */ ;
/*!50003 DROP PROCEDURE IF EXISTS `CompanyDiseased` */;
/*!50003 SET @saved_cs_client      = @@character_set_client */ ;
/*!50003 SET @saved_cs_results     = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client  = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection  = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode       = @@sql_mode */ ;
/*!50003 SET sql_mode             =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
CREATE DEFINER=`root`@`localhost` PROCEDURE `CompanyDiseased`(in Disease_Name varchar(30))
Begin
select Company_ID, Disease_Name
from clinical_trial
inner join disease
on clinical_trial.Disease_ID=disease.Disease_ID;

End ;;
DELIMITER ;
/*!50003 SET sql_mode             = @saved_sql_mode */ ;
/*!50003 SET character_set_client  = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection  = @saved_col_connection */ ;
/*!50003 DROP PROCEDURE IF EXISTS `Company_Dis` */;
/*!50003 SET @saved_cs_client      = @@character_set_client */ ;
/*!50003 SET @saved_cs_results     = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client  = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection  = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode       = @@sql_mode */ ;
/*!50003 SET sql_mode             =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
CREATE DEFINER=`root`@`localhost` PROCEDURE `Company_Dis`( in Company_Name varchar(30))
Begin
select Drug_Name, Disease_Name, Company_Name
from drug as d
inner join company as c
```

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```
on d.Company_ID=c.Company_ID;
End ;;
DELIMITER ;
/*!50003 SET sql_mode            = @saved_sql_mode */ ;
/*!50003 SET character_set_client = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection = @saved_col_connection */ ;
/*!50003 DROP PROCEDURE IF EXISTS `Company_Drug` */;
/*!50003 SET @saved_cs_client     = @@character_set_client */ ;
/*!50003 SET @saved_cs_results    = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode      = @@sql_mode */ ;
/*!50003 SET sql_mode            =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
CREATE DEFINER=`root`@`localhost` PROCEDURE `Company_Drug`( In CN varchar(30))
begin
select d.Drug_Name,c.Company_Name,d.disease_name from company c
join
drug  d
on d.Company_ID=c.Company_ID
where CN=c.Company_Name;
end ;;
DELIMITER ;
/*!50003 SET sql_mode            = @saved_sql_mode */ ;
/*!50003 SET character_set_client = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection = @saved_col_connection */ ;
/*!50003 DROP PROCEDURE IF EXISTS `Company_Druged` */;
/*!50003 SET @saved_cs_client     = @@character_set_client */ ;
/*!50003 SET @saved_cs_results    = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode      = @@sql_mode */ ;
/*!50003 SET sql_mode            =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
CREATE DEFINER=`root`@`localhost` PROCEDURE `Company_Druged`( In CN varchar(30))
begin
select Drug_Name,Company_Name,disease_name from company c
join
drug  d
on d.Company_ID=c.Company_ID
where CN=Company_Name;
end ;;
DELIMITER ;
/*!50003 SET sql_mode            = @saved_sql_mode */ ;
/*!50003 SET character_set_client = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection = @saved_col_connection */ ;
/*!50003 DROP PROCEDURE IF EXISTS `Participant_Count` */;
```

```
/*!50003 SET @saved_cs_client     = @@character_set_client */ ;
/*!50003 SET @saved_cs_results     = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client  = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection  = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode       = @@sql_mode */ ;
/*!50003 SET sql_mode              =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
CREATE DEFINER=`root`@`localhost` PROCEDURE `Participant_Count`( in Phase_Number int)
Begin
select count(Participant_ID)
from participant_trial_info;
End ;;
DELIMITER ;
/*!50003 SET sql_mode              = @saved_sql_mode */ ;
/*!50003 SET character_set_client  = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection  = @saved_col_connection */ ;
/*!50003 DROP PROCEDURE IF EXISTS `Phase_Cost` */;
/*!50003 SET @saved_cs_client     = @@character_set_client */ ;
/*!50003 SET @saved_cs_results     = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client  = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection  = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode       = @@sql_mode */ ;
/*!50003 SET sql_mode              =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
CREATE DEFINER=`root`@`localhost` PROCEDURE `Phase_Cost`( In PN int)
begin
select p.phase_number,ct.Estimated_Cost as Cost,p.duration from clinical_trial ct
join
phase p
on ct.Trial_ID=p.Trial_ID
where PN=p.phase_number;
end ;;
DELIMITER ;
/*!50003 SET sql_mode              = @saved_sql_mode */ ;
/*!50003 SET character_set_client  = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection  = @saved_col_connection */ ;
/*!50003 DROP PROCEDURE IF EXISTS `Phase_Costs` */;
/*!50003 SET @saved_cs_client     = @@character_set_client */ ;
/*!50003 SET @saved_cs_results     = @@character_set_results */ ;
/*!50003 SET @saved_col_connection = @@collation_connection */ ;
/*!50003 SET character_set_client  = utf8 */ ;
/*!50003 SET character_set_results = utf8 */ ;
/*!50003 SET collation_connection  = utf8_general_ci */ ;
/*!50003 SET @saved_sql_mode       = @@sql_mode */ ;
/*!50003 SET sql_mode              =
'STRICT_TRANS_TABLES,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION' */ ;
DELIMITER ;;
CREATE DEFINER=`root`@`localhost` PROCEDURE `Phase_Costs`( In PN int)
```

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```
begin
select phase_number, sum(Estimated_Cost) as Cost, avg(duration) from clinical_trial ct
join
phase p
on ct.Trial_ID=p.Trial_ID
where PN=phase_number;
end ;;
DELIMITER ;
/*!50003 SET sql_mode            = @saved_sql_mode */ ;
/*!50003 SET character_set_client  = @saved_cs_client */ ;
/*!50003 SET character_set_results = @saved_cs_results */ ;
/*!50003 SET collation_connection  = @saved_col_connection */ ;
/*!40103 SET TIME_ZONE=@OLD_TIME_ZONE */;

/*!40101 SET SQL_MODE=@OLD_SQL_MODE */;
/*!40014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;
/*!40014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */;
/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
/*!40111 SET SQL_NOTES=@OLD_SQL_NOTES */;

-- Dump completed on 2017-04-21 17:29:08
```