show databases;

use A\_I\_D;

-- 1 Search for diseases

select \* from Diseases where LOWER(Disease\_name) like LOWER('%Diabetes%');

-- 2 Search for diseases and drugs for those

select D.Disease\_name,Drugs.\* from Diseases D inner join Therapy T on D.Disease\_id=T.Disease\_id inner join Drugs on T

.Drug\_id = Drugs.Drug\_id;

-- 3 Search for Diseases, Genes involved

select D.Disease\_name,G.Gene\_name,G.Entrez\_id,G.Gene\_function,A.Association\_score from Diseases D inner join Association A on D

.Disease\_id = A

.Disease\_id inner

join Gene G

on A

.Entrez\_id =

G

.Entrez\_id

where A.Association\_score>=0.01;

-- 4 For a particular disease

select D.Disease\_name,G.Gene\_name,G.Entrez\_id,G.Gene\_function,A.Association\_score from Diseases D inner join Association A on D

.Disease\_id = A

.Disease\_id inner

join Gene G

on A

.Entrez\_id =

G

.Entrez\_id

where A.Association\_score>=0.01 and LOWER(Disease\_name) like LOWER('%Diabetes%');

-- 5 Search for Drugs of Diseases

select D.Disease\_name,Drugs.\* from Diseases D inner join Therapy T on D.Disease\_id=T.Disease\_id inner join Drugs on T

.Drug\_id = Drugs.Drug\_id;

-- 6 No.of diseases each gene is implicated in

select A.Entrez\_id,count(D.Disease\_id) from Diseases D inner join Association A on A.Disease\_id=D.Disease\_id

where A.Association\_score>0.01

group by A.Entrez\_id ;

-- 7.Search for pathway info and dysregulation info i specific diseases;

select Disease\_name,Pathway\_name,P.KEGG\_id,P.URL, Dysregulation\_Info from Diseases D left join

Dysregulation\_Info dy on D

.Disease\_id = dy.Disease\_id

inner join

Pathway\_Details P

on dy.Pathway\_id = P.Pathway\_id;

-- 8 Diseases with common associated genes

SELECT D1.Disease\_name AS Disease1\_name,

D2.Disease\_name AS Disease2\_name,

A1.Entrez\_id AS Common\_Gene\_Entrez\_id,

(SELECT Gene\_name

FROM Gene

WHERE Entrez\_id = A1.Entrez\_id) AS Gene\_name

FROM Association A1

JOIN Association A2 ON A1.Entrez\_id = A2.Entrez\_id

JOIN Diseases D1 ON A1.Disease\_id = D1.Disease\_id

JOIN Diseases D2 ON A2.Disease\_id = D2.Disease\_id

WHERE D1.Disease\_name = 'disease1'

AND D2.Disease\_name = 'disease2';

-- 9.Search for other databases based on disease

select d.Disease\_name,External\_db,URL from Diseases d left join Extra\_Info ei on d.Disease\_id=ei.Disease\_id

where LOWER(d.Disease\_name) LIKE LOWER('%Diabetes%');

-- 10.No of drugs investigational and approved

select D.Disease\_name,dr.Status,count(dr.Drug\_id) as "No. of Drugs" from Diseases D inner join Therapy T on D

.Disease\_id =T

.Disease\_id

inner

join

Drugs dr on T.Drug\_id=dr.Drug\_id

group by D.Disease\_name,dr.Status

order by count(dr.Drug\_id) desc;

-- 11 Drugs by treatment type

select D.Disease\_name,dr.Treatment\_type,count(dr.Drug\_id) as "No. of Drugs" from Diseases D inner join Therapy T on D

.Disease\_id =T

.Disease\_id

inner

join

Drugs dr on T.Drug\_id=dr.Drug\_id

group by D.Disease\_name,dr.Treatment\_type

order by count(dr.Drug\_id) desc;

-- Max no. of drugs

select D.Disease\_name,count(T.Drug\_id) as "No. of Drugs" from Diseases D inner join Therapy T on D.Disease\_id=T

.Disease\_id inner join

Drugs

on T

.Drug\_id = Drugs.Drug\_id

group by D.Disease\_name

order by count(T.Drug\_id) desc;

# Genes the high diseases

select d.Disease\_name,count(A.Entrez\_id) as "No. of associated genes" from Diseases d inner join A\_I\_D.Association

A on d

.Disease\_id = A.Disease\_id

where Association\_score>=0.01

group by d.Disease\_name

order by count(Entrez\_id) desc;