



Course Project – Anime Database Design & Implementation

Database Systems

[CSIS-3222-001]

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Lopez

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Database Design

#1 Project Intent

For this project, I'd like to design a database system for anime. Anime is a style of Japanese film and animation. I enjoy watch a lot of anime and thought it would be useful to create a database that contained information about all the different anime that exist. This system is a conceptualization of an Anime database that is inspired from several sites: myanmilelist.net which contains information about anime, crunchyroll.com an anime streaming site, and animecharacetdatabase.com which has a database of many characters from anime.

The goal of this system would be to merge elements from these three different websites to create an adequate database for Anime. For this database system, I'd like to make it easy to find anime based on different genre a user enjoys, and lists all the details of that anime in a list with things such as genre type, setting, characters, release date, etc. I think it would be a fun and useful project for anime fans. They could input data about an anime, and the database system can organize it well. A list of the entities can be: Anime, Manga, Genre, Studio Character, Creator, and User.

The scope of this project is to create a database that contains information of the entities previously listed. User will also be able to create accounts and have a list of anime that they enjoy. The system could possibly be self-sustainable since users will be able to input anime data if it does not already exist in the database. In this report I will design a relational database and implement it in SQL Oracle. There will be several figures of diagrams, sample data forms, and prototypes of better forms for a more reliable database system.

#2 Sample Forms

Crunchyroll Sign Up/Log in Forms

The image shows two side-by-side web forms. The left form is titled 'Sign Up for a Free Account' and includes fields for Email Address, User Name, Password, and Birthday (with Month, Day, and Year dropdowns). It also has radio buttons for Gender (Female, Male, Other) and a checkbox for 'Yes, keep me posted on updates related to Crunchyroll.' An orange 'Create Account' button is at the bottom. The right form is titled 'Log In' and includes fields for 'Email or User Name' and 'Password'. It has an orange 'Log In' button and a 'Forgot password?' link. Both forms have a footer with a copyright notice: '© 2006-2019 Ellation, Inc.'

These two forms are used for user purposes, either to create a new account or log into an existing account. The Sign Up form asks for a number of things like email address, username, password, date of birth, gender, and crunchyroll updates. These will be filled out by the user and put into a database. The variables that would be in this table would be as follows:

- USERNAME PRIMARY KEY NOT NULL
- EMAIL ADDRESS VARCHAR(30) NOT NULL
- PASSWORD VARCHAR(30) NOT NULL
- BIRTHDAY DATE NOT NULL
- GENDER NOT NULL

The Log In Form asks for the username/email and password. When a user enters this data, the database will be checked for the account and log them into the website.

Animecharactersdatabase Add New Series Form



(required) English Title	
Romaji Title	
	(Please remove all ūōtēā)
Furigana	
Japanese Title	
Release Date	
Japanese Studio	
English Studio	
Media Type	---
Content Rating	
Indexing Progress	0 -
(required) Home Page	
	Post

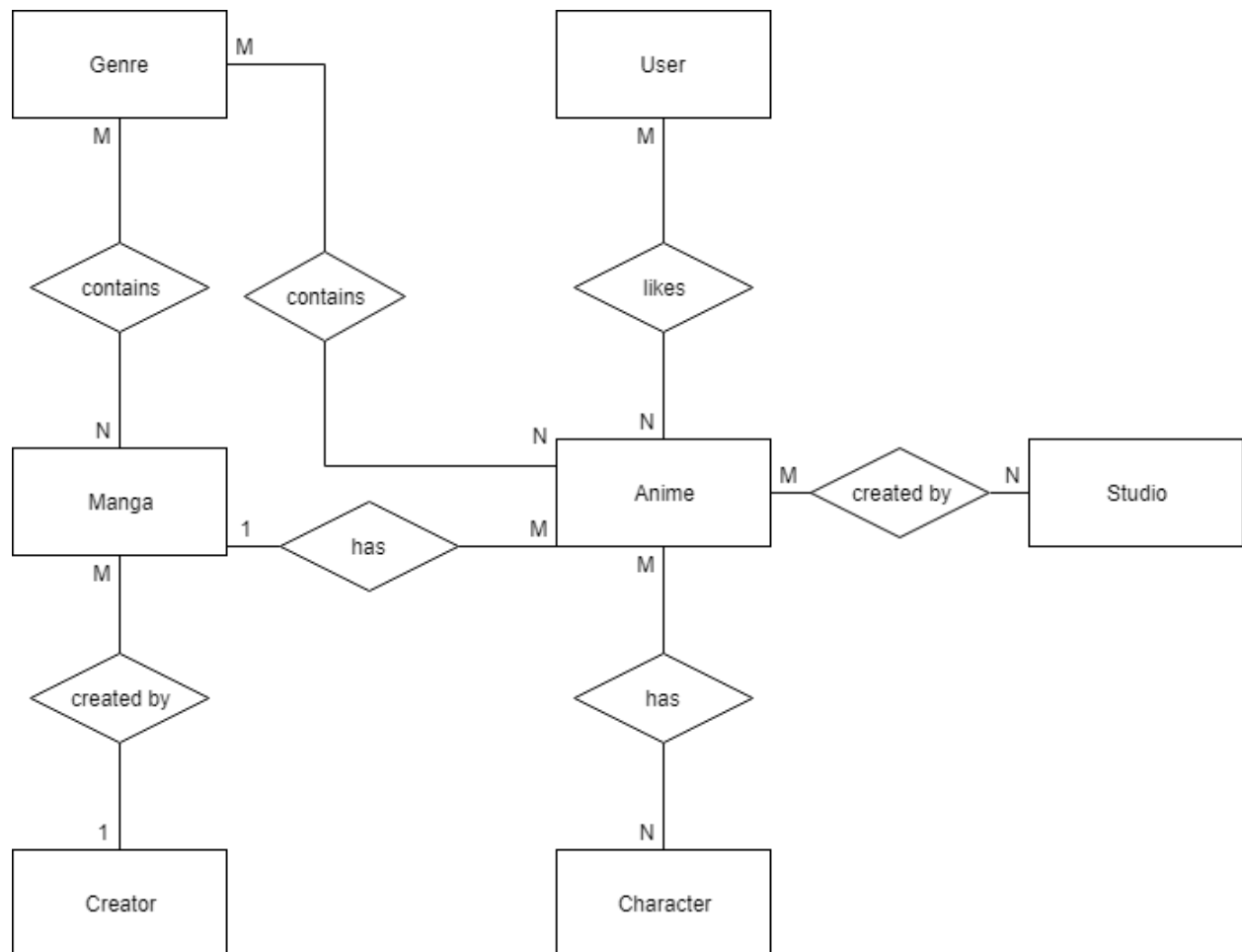
This form is used to add a new series into the already existing database of Anime. It asks for many of the attributes of the Anime entity such as its title, release date, content rating, media type, etc. The purpose of this form is to allow users to add a new series to the website and makes it self-sustainable as long as website traffic is existent.

#3 Conceptual ER model

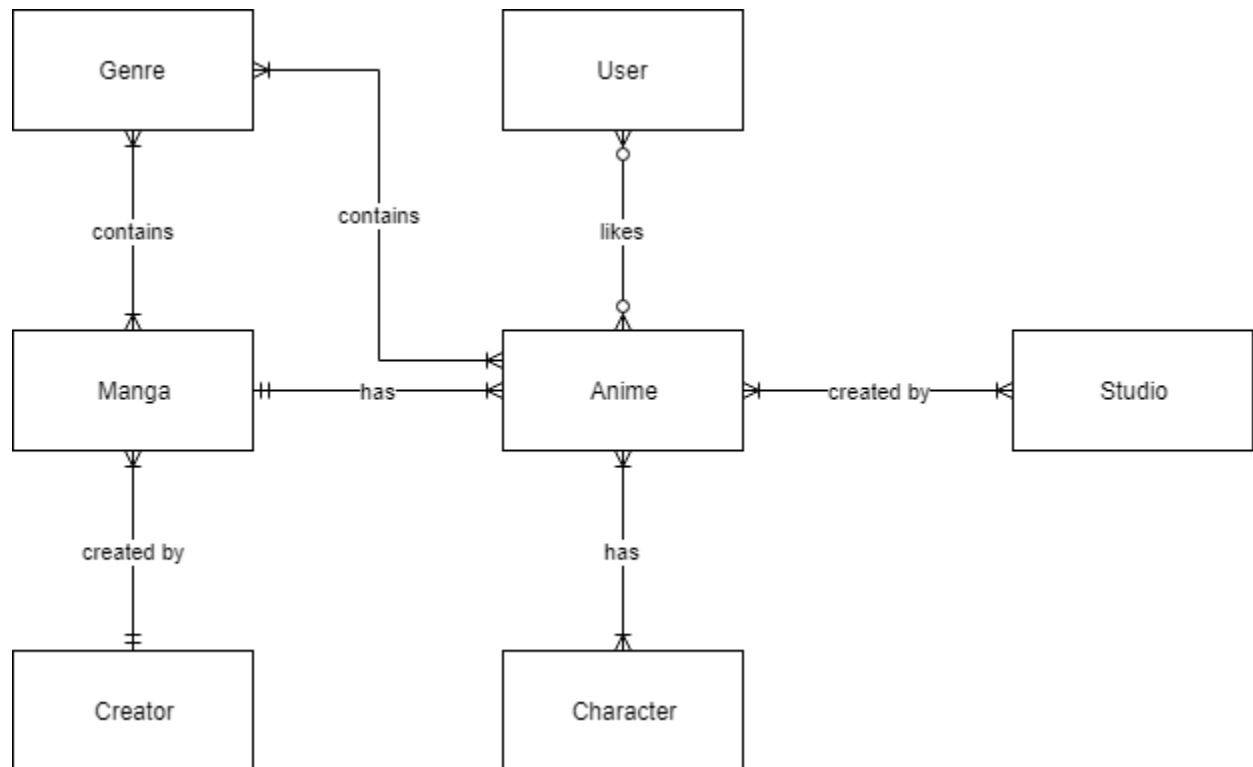
List of Entities

- Anime – the name of the anime and its attributes
- Manga – graphic novels that are usually adapted into anime
- Studio – the company or studio that creates and releases anime adaptations
- Genre – all the different genre types
- Character – characters in anime
- Creator – creators of anime
- User – anime fan account

Chen's notation model diagram



IE Crow Foot data model diagram (*without attributes*)



#4 Preliminary E-R logical data model

List of Entities

- Anime – the name of the anime and its attributes
 - AnimeID – used to uniquely identify; a105
 - AnimeTitle – the title of the anime; Steins;Gate
 - Episodes – how many episodes there are in the anime; 34
 - ReleaseDate – when the anime was first aired on TV; April 6, 2011
 - Rating – rating from 1-10 calculated based on what all the users have rated it; 7
 - Genres – what type of genres it contains; thriller, sci-fi
 - Studio – the studio that created the anime; White Fox

- Manga – graphic novels that are usually adapted into anime
 - MangaID – used to uniquely identify; m207
 - MangaTitle – the title of the manga; Bleach
 - Chapters – how many chapters there are in the manga; 765
 - ReleaseDate – when the first chapter was released; August 7, 2011
 - Rating – rating 1-10 from users; 8
 - Genres – type of genres it contains; adventure, supernatural
 - Creator – the creator of the manga; Tite Kubo

- Studio – the company or studio that creates and releases anime adaptations
 - StudioID – used to uniquely identify; s65
 - StudioName – the name of the studio; Toei Animation
 - Anime – the anime that the studio has created; One Piece, Dragon Ball Super, etc
 - Location – where the studio is based at; headquarters; Japan

- Genre – all the different genre types
 - Genre – thriller, action, sci fi
 - Description – scary, suspenseful, action-packed

- Character – characters in anime
 - CharacterID – used to uniquely identify; c1025
 - FirstName – first name of character; Ichigo
 - MiddleInit – middle initial of character if applicable; m, null
 - LastName – last name of character; Kurosaki
 - Gender – gender of character; male, female
 - Age – how old the character is;17
 - Type – human, cat, dog, fox, demon, etc
 - HairColor – color of hair; orange
 - EyeColor – color of eyes; orange

- Creator – creators of anime
 - CreatorID - – used to uniquely identify
 - FirstName; Tite
 - MiddleInit; H
 - LastName; Kubo
 - Age; 41
 - Manga; Bleach

- User – anime fan account
 - Username J– used to uniquely identify; animefan123
 - FirstName - John
 - MiddleInit - K
 - LastName - Fisher
 - Birthday – March 3, 2000
 - Gender - Male

Preliminary IE Crow Foot data model diagram (with attributes)



Many Anime can be created by many Studios.

Each Studio makes many Anime.

Each Manga has at least 1 creator.

Each Manga has at least 1 Anime.

Each Anime has at least 1 Anime.

Each Creator can many Manga.

Each User can like zero or many Anime.

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Each Anime can be liked by zero or many Users.

Many Anime can have many Characters.

Anime contains atleast 1 Genre.

Manga contains at least 1 Genre.

#5 Final E-R logical data model

#6 Relational schema

#7 Physical Model

Normalization Steps:

Anime

<u>anime_id</u>	studio_id	genre	anime_title	episodes	release_date	rating
-----------------	-----------	-------	-------------	----------	--------------	--------

1nf

<u>anime_id</u>	anime_title	episodes	release_date	rating
-----------------	-------------	----------	--------------	--------

studio_id	studio_name	location
-----------	-------------	----------

<u>genre</u>	description
--------------	-------------

Bridge entities

<u>anime_id</u>	<u>genre</u>
-----------------	--------------

<u>anime_id</u>	<u>studio_id</u>
-----------------	------------------

User

<u>user_id</u>	anime_id	first_name	middle_init	last_name	birthday	gender
----------------	----------	------------	-------------	-----------	----------	--------

1nf

<u>user_id</u>	first_name	middle_init	last_name	birthday	gender
----------------	------------	-------------	-----------	----------	--------

<u>anime_id</u>	anime_title	episodes	release_date	rating
-----------------	-------------	----------	--------------	--------

Bridge entity

<u>user_id</u>	<u>anime_id</u>
----------------	-----------------

Manga

<u>manga_id</u>	creator_id	genre	manga_title	chapters	release_date	rating
-----------------	------------	-------	-------------	----------	--------------	--------

1nf

<u>manga_id</u>	creator_id	manga_title	chapters	release_date	rating
-----------------	------------	-------------	----------	--------------	--------

<u>genre</u>	description
--------------	-------------

Bridge entity

<u>manga_id</u>	<u>genre</u>
-----------------	--------------

Character

<u>character_id</u>	anime_id	first_name	middle_init	last_name	gender	age	type	hair_color	eye_color
---------------------	----------	------------	-------------	-----------	--------	-----	------	------------	-----------

1nf

<u>character_id</u>	first_name	middle_init	last_name	gender	age	type	hair_color	eye_color
---------------------	------------	-------------	-----------	--------	-----	------	------------	-----------

<u>anime_id</u>	anime_title	episodes	release_date	rating
-----------------	-------------	----------	--------------	--------

Bridge entity

<u>character_id</u>	<u>anime_id</u>
---------------------	-----------------

List of Entities

- Anime – the name of the anime and its attributes
 - anime_id – used to uniquely identify; a105
 - anime_title – the title of the anime; Steins;Gate
 - episodes – how many episodes there are in the anime; 34
 - release_date – when the anime was first aired on TV; April 6, 2011
 - rating – rating from 1-10 calculated based on what all the users have rated it; 7
- Manga – graphic novels that are usually adapted into anime
 - manga_id – used to uniquely identify; m207
 - manga_title – the title of the manga; Bleach
 - chapters – how many chapters there are in the manga; 765
 - release_date – when the first chapter was released; August 7, 2011
 - rating – rating 1-10 from users; 8
 - creator_id – the creator of the manga; Tite Kubo
- Studio – the company or studio that creates and releases anime adaptations
 - studio_id – used to uniquely identify; s65
 - studio_name – the name of the studio; Toei Animation
 - location – where the studio is based at; headquarters; Japan
- Genre – all the different genre types
 - genre – thriller, action, sci fi
 - description – scary, suspenseful, action-packed
- Character – characters in anime
 - character_id – used to uniquely identify; c1025
 - first_name – first name of character; Ichigo
 - middle_init – middle initial of character if applicable; m, null
 - last_name – last name of character; Kurosaki
 - gender – gender of character; male, female

- age – how old the character is;17
- type – human, cat, dog, fox, demon, etc
- hair_color – color of hair; orange
- eye_color – color of eyes; orange

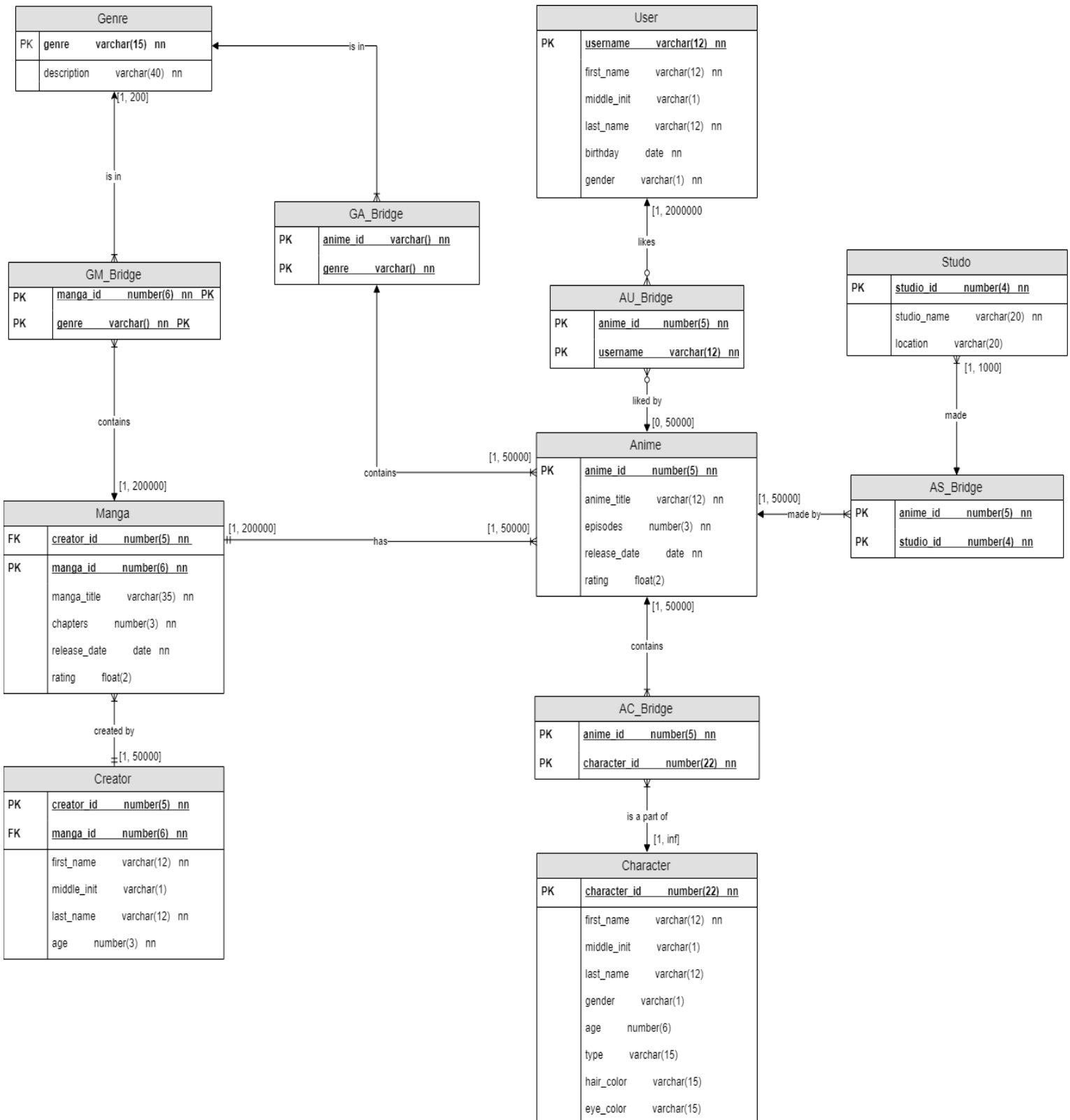
- Creator – creators of anime
 - creator_id – used to uniquely identify
 - first_name; Tite
 - middle_init; H
 - last_name; Kubo
 - age; 41
 - manga_id; Bleach
- User – anime fan account
 - username– used to uniquely identify; animefan123
 - first_name - John
 - middle_init - K
 - last_name - Fisher
 - birthday – March 3, 2000
 - gender – Male

Bridge Entities

- GM_Bridge
 - manga_id
 - genre
- GA_Bridge
 - anime_id
 - genre
- AU_Bridge
 - anime_id

- username
- AC_Bridge
 - anime_id
 - character_id
- AS_Bridge
 - anime_id
 - studio_id

Final IE Crow Foot data model diagram (with attributes)



#9 Prototypes

Anime

Add Anime:

Title : _____

Episodes : _____

Release Date : _____

Genre : _____

Studio : _____

Manga : _____

Character

Add Character

First Name : _____

Middle Initial : _____

Last Name : _____

Gender : _____

Age : _____

Type : _____

Hair Color : _____

Eye Color : _____

Anime : _____

Creator

Add Creator

First Name : _____

Middle Initial : _____

Last Name : _____

Age : _____

Genre

Add Genre

Genre : _____

Description : _____

Manga

Add Manga

Title : _____

Chapters : _____

Release Date: _____

Genre : _____

Creator : _____

Studio

Add Studio

Name : _____

Location: _____

User

Create User

Username	:	
First Name	:	
Middle Initial	:	
Last Name	:	
Birth day	:	
Gender	:	

Appendix

Sample Data

Anime					
	anime_id	anime_title	episodes	release_date	rating
Instance-1	1	Steins;Gate	24	Apr 6, 2011	9.13
Instance-2	2	Bleach	366	Oct 5, 2004	7.88
Instance-3	3	One Piece	867	Oct 20, 1999	8.53
Instance-4	4	Dragonball Z	291	Apr 26, 1989	8.29
Instance-5	5	Black Clover	88	Oct 3, 2017	7.00

Manga						
	manga_id	manga_title	chapters	release_date	rating	creator_id
Instance-1	1	Steins;Gate	23	Sep 26, 2009	8.19	1
Instance-2	2	Bleach	705	Aug 7, 2001	7.71	2
Instance-3	3	One Piece	941	Jul 22, 1997	9.07	3
Instance-4	4	Dragon Ball	519	Jun 20, 2015	7.41	4
Instance-5	5	Black Clover	203	Feb 16, 2015	7.59	5

Creator						
	creator_id	first_name	middle_init	last_name	age	manga_id
Instance-1	1	Yomi	J	Sarachi	35	1
Instance-2	2	Tite		Kubo	41	2
Instance-3	3	Oda		Eiichiro	44	3
Instance-4	4	Akira		Toriyama	64	4
Instance-5	5	Yuuki		Tabata	34	5

Studio			
	studio_id	studio_name	location
Instance-1	1	White Fox	Tokyo
Instance-2	2	Studio Pierrot	Tokyo
Instance-3	3	Toei Animation	Tokyo
Instance-4	4	Madhouse	Tokyo
Instance-5	5	TNK	Nerima

Genre		
	genre	description
Instance-1	Action	fight, speed...
Instance-2	Adventure	traveling acr...
Instance-3	Horror	scary...
Instance-4	Slice of life	everyday life...
Instance-5	Fantasy	dream-like ...

Character									
	character_id	first_name	middle_init	last_name	gender	age	type	hair_color	eye_color
Instance-1	1	Monkey	D	Luffy	M		Pirate	Black	Black
Instance-2	2	Ichigo		Kurosaki	M		Soul Reaper	Orange	Orange
Instance-3	3	Yuno			M		Wizard	Black	Yellow
Instance-4	4	Son		Goku	M		Fighter	Black	Black
Instance-5	5	Asta			M		Human	Grey	Green

User						
	username	first_name	middle_init	last_name	birthday	gender
Instance-1	bobby1	Bobby	K	Yu	May 2, 1997	M
Instance-2	bob2	Bob		Rob	Jun 5, 2001	M
Instance-3	tanash	Leroy		Jenkins	Apr 26, 1989	M
Instance-4	coolgamer2	Jen	K	Jane	May 2, 1996	F
Instance-5	yayeet	Alexis		King	May 4, 1965	O

GM_Bridge		
	genre	manga_id
Instance-1	Action	5
Instance-2	Adventure	5
Instance-3	Horror	2
Instance-4	Slice of life	1
Instance-5	Fantasy	5

GA_Bridge		
	genre	anime_id
Instance-1	Action	5
Instance-2	Adventure	5
Instance-3	Horror	2
Instance-4	Slice of life	1
Instance-5	Fantasy	5

AU_Bridge		
	anime_id	username
Instance-1	1	bobby1
Instance-2	2	bobby1
Instance-3	3	bobby1
Instance-4	2	bob2
Instance-5	2	tanash

AC_Bridge		
	anime_id	character_id
Instance-1	1	1
Instance-2	2	1
Instance-3	2	2
Instance-4	2	3
Instance-5	3	4

AS_Bridge		
	anime_id	studio_id
Instance-1	3	3
Instance-2	4	3
Instance-3	2	2
Instance-4	5	2
Instance-5	1	1

SQL Data Definition scripts

Script

SPOOL Output-Anime.txt

--SPOOL Output.txt APPEND

SET ECHO ON

SET LINESIZE 32767

SET TRIMSPOOL ON

SET TRIMOUT ON

drop table GM_Bridge;

drop table GA_Bridge;

drop table AU_Bridge;

drop table AC_Bridge;

drop table AS_Bridge;

drop table Manga;

drop table Creator;

drop table Anime;

drop table Studio;

drop table Genre;

drop table Character;

drop table Users;

/*

Anime Table:

*/

```
create table Anime(  
  anime_id number(5) PRIMARY KEY,  
  anime_title varchar(12) not null,  
  episodes number(3) not null,  
  release_date date not null,  
  rating float(2)  
);
```

/*

Creator Table:

*/

```
create table Creator(  
  creator_id number(5) PRIMARY KEY,  
  first_name varchar(12) not null,  
  middle_init varchar(1),  
  last_name varchar(12) not null,  
  age number(6) not null  
);
```

/*

Manga Table:

*/

```
create table Manga(  
  manga_id number(5) PRIMARY KEY,
```

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```
manga_title varchar(12) not null,  
chapters number(3) not null,  
release_date date not null,  
rating float(2),  
creator_id number(5) references Creator(creator_id)  
);
```

```
/*
```

Studio Table:

```
*/
```

```
create table Studio(  
studio_id number(4) PRIMARY KEY,  
studio_name varchar(20) not null,  
location varchar(20)  
);
```

```
/*
```

Genre Table:

```
*/
```

```
create table Genre(  
genre varchar(15) PRIMARY KEY,  
description varchar(40) not null  
);
```

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/*

Character Table:

*/

```
create table Character(  
character_id number(22) PRIMARY KEY,  
first_name varchar(12) not null,  
middle_init varchar(1),  
last_name varchar(12),  
gender varchar(1),  
age number(6),  
type varchar(15),  
hair_color varchar(15),  
eye_color varchar(15)  
);
```

/*

User Table:

*/

```
create table Users(  
username varchar(12) PRIMARY KEY,  
first_name varchar(12) not null,  
middle_init varchar(1),  
last_name varchar(12) not null,  
birthday date not null,  
gender varchar(1) not null  
);
```

/*

GM_Bridge Table:

*/

```
create table GM_Bridge(  
genre varchar(15) references Genre(genre),  
manga_id number(6) references Manga(manga_id)  
);
```

/*

GA_Bridge Table:

*/

```
create table GA_Bridge(  
genre varchar(15) references Genre(genre),  
anime_id number(6) references Anime(anime_id)  
);
```

/*

AU_Bridge Table:

*/

```
create table AU_Bridge(  
anime_id number(5) references Anime(anime_id),  
username varchar(12) references Users(username)  
);
```

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/*

AC_Bridge Table:

*/

```
create table AC_Bridge(  
anime_id number(5) references Anime(anime_id),  
character_id number(22) references Character(character_id)  
);
```

/*

AS_Bridge Table:

*/

```
create table AS_Bridge(  
anime_id number(6) references Anime(anime_id),  
studio_id number(4) references Studio(studio_id)  
);
```

DESCRIBE Anime;

DESCRIBE Manga;

DESCRIBE Creator;

DESCRIBE Studio;

DESCRIBE Genre;

DESCRIBE Character;

DESCRIBE Users;

DESCRIBE GM_Bridge;

DESCRIBE GA_Bridge;

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DESCRIBE AU_Bridge;

DESCRIBE AC_Bridge;

DESCRIBE AS_Bridge;

SET ECHO OFF

SPOOL OFF

Output

SQL>

SQL>

SQL> SET LINESIZE 32767

SQL> SET TRIMSPOOL ON

SQL> SET TRIMOUT ON

SQL>

SQL> drop table GM_Bridge;

Table GM_BRIDGE dropped.

SQL> drop table GA_Bridge;

Table GA_BRIDGE dropped.

SQL> drop table AU_Bridge;

Table AU_BRIDGE dropped.

SQL> drop table AC_Bridge;

Table AC_BRIDGE dropped.

SQL> drop table AS_Bridge;

Table AS_BRIDGE dropped.

SQL> drop table Manga;

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Table MANGA dropped.

SQL> drop table Creator;

Table CREATOR dropped.

SQL> drop table Anime;

Table ANIME dropped.

SQL> drop table Studio;

Table STUDIO dropped.

SQL> drop table Genre;

Table GENRE dropped.

SQL> drop table Character;

Table CHARACTER dropped.

SQL> drop table Users;

Table USERS dropped.

SQL>

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```
SQL> /*
```

```
SQL> Anime Table:
```

```
SQL>*/
```

```
SQL>
```

```
SQL> create table Anime(
```

```
2 anime_id number(5) PRIMARY KEY,
```

```
3 anime_title varchar(12) not null,
```

```
4 episodes number(3) not null,
```

```
5 release_date date not null,
```

```
6 rating float(2)
```

```
7 );
```

Table ANIME created.

```
SQL>
```

```
SQL> /*
```

```
SQL> Creator Table:
```

```
SQL>*/
```

```
SQL>
```

```
SQL> create table Creator(
```

```
2 creator_id number(5) PRIMARY KEY,
```

```
3 first_name varchar(12) not null,
```

```
4 middle_init varchar(1),
```

```
5 last_name varchar(12) not null,
```

```
6 age number(6) not null
```

```
7 );
```

Table CREATOR created.

SQL>

SQL>

SQL> /*

SQL>Manga Table:

SQL>*/

SQL>

```
SQL> create table Manga(  
2  manga_id number(5) PRIMARY KEY,  
3  manga_title varchar(12) not null,  
4  chapters number(3) not null,  
5  release_date date not null,  
6  rating float(2),  
7  creator_id number(5) references Creator(creator_id)  
8 );
```

Table MANGA created.

SQL>

SQL> /*

SQL>Studio Table:

SQL>*/

SQL>

```
SQL> create table Studio(  
2  studio_id number(4) PRIMARY KEY,  
3  studio_name varchar(20) not null,  
4  location varchar(20)  
5 );
```

Table STUDIO created.

SQL>

SQL>

SQL> /*

SQL>Genre Table:

SQL>*/

SQL>

```
SQL> create table Genre(  
2  genre varchar(15) PRIMARY KEY,  
3  description varchar(40) not null  
4 );
```

Table GENRE created.

SQL>

SQL> /*

SQL>Character Table:

SQL>*/

SQL>

```
SQL> create table Character(  
2  character_id number(22) PRIMARY KEY,  
3  first_name varchar(12) not null,  
4  middle_init varchar(1),  
5  last_name varchar(12),  
6  gender varchar(1),  
7  age number(6),
```

```
8 type varchar(15),
9 hair_color varchar(15),
10 eye_color varchar(15)
11 );
```

Table CHARACTER created.

SQL>

SQL> /*

SQL>User Table:

SQL>*/

SQL>

```
SQL> create table Users(
2 username varchar(12) PRIMARY KEY,
3 first_name varchar(12) not null,
4 middle_init varchar(1),
5 last_name varchar(12) not null,
6 birthday date not null,
7 gender varchar(1) not null
8 );
```

Table USERS created.

SQL>

SQL> /*

SQL>GM_Bridge Table:

SQL>*/

SQL>

```
SQL> create table GM_Bridge(  
2 genre varchar(15) references Genre(genre),  
3 manga_id number(6) references Manga(manga_id)  
4 );
```

Table GM_BRIDGE created.

```
SQL>
```

```
SQL> /*
```

```
SQL>GA_Bridge Table:
```

```
SQL>*/
```

```
SQL>
```

```
SQL> create table GA_Bridge(  
2 genre varchar(15) references Genre(genre),  
3 manga_id number(6) references Manga(manga_id)  
4 );
```

Table GA_BRIDGE created.

```
SQL>
```

```
SQL> /*
```

```
SQL>AU_Bridge Table:
```

```
SQL>*/
```

```
SQL>
```

```
SQL> create table AU_Bridge(  
2 anime_id number(5) references Anime(anime_id),  
3 username varchar(12) references Users(username)  
4 );
```

Table AU_BRIDGE created.

SQL>

SQL> /*

SQL>AC_Bridge Table:

SQL>*/

SQL>

```
SQL> create table AC_Bridge(  
  2  anime_id number(5) references Anime(anime_id),  
  3  character_id number(22) references Character(character_id)  
  4 );
```

Table AC_BRIDGE created.

SQL>

SQL> /*

SQL>AS_Bridge Table:

SQL>*/

SQL>

```
SQL> create table AS_Bridge(  
  2  anime_id number(6) references Anime(anime_id),  
  3  studio_id number(4) references Studio(studio_id)  
  4 );
```

Table AS_BRIDGE created.

SQL>

SQL>

SQL> DESCRIBE Anime;

Name	Null?	Type
------	-------	------

ANIME_ID	NOT NULL	NUMBER(5)
----------	----------	-----------

ANIME_TITLE	NOT NULL	VARCHAR2(12)
-------------	----------	--------------

EPISODES	NOT NULL	NUMBER(3)
----------	----------	-----------

RELEASE_DATE	NOT NULL	DATE
--------------	----------	------

RATING		FLOAT(2)
--------	--	----------

SQL> DESCRIBE Manga;

Name	Null?	Type
------	-------	------

MANGA_ID	NOT NULL	NUMBER(5)
----------	----------	-----------

MANGA_TITLE	NOT NULL	VARCHAR2(12)
-------------	----------	--------------

CHAPTERS	NOT NULL	NUMBER(3)
----------	----------	-----------

RELEASE_DATE	NOT NULL	DATE
--------------	----------	------

RATING		FLOAT(2)
--------	--	----------

CREATOR_ID		NUMBER(5)
------------	--	-----------

SQL> DESCRIBE Creator;

Name	Null?	Type
------	-------	------

CREATOR_ID	NOT NULL	NUMBER(5)
------------	----------	-----------

FIRST_NAME	NOT NULL	VARCHAR2(12)
------------	----------	--------------

MIDDLE_INIT		VARCHAR2(1)
-------------	--	-------------

LAST_NAME	NOT NULL	VARCHAR2(12)
-----------	----------	--------------

AGE	NOT NULL	NUMBER(6)
-----	----------	-----------

SQL> DESCRIBE Studio;

Name	Null?	Type
------	-------	------

STUDIO_ID NOT NULL NUMBER(4)

STUDIO_NAME NOT NULL VARCHAR2(20)

LOCATION VARCHAR2(20)

SQL> DESCRIBE Genre;

Name	Null?	Type
------	-------	------

GENRE	NOT NULL	VARCHAR2(15)
-------	----------	--------------

DESCRIPTION	NOT NULL	VARCHAR2(40)
-------------	----------	--------------

SQL> DESCRIBE Character;

Name	Null?	Type
------	-------	------

CHARACTER_ID	NOT NULL	NUMBER(22)
--------------	----------	------------

FIRST_NAME	NOT NULL	VARCHAR2(12)
------------	----------	--------------

MIDDLE_INIT		VARCHAR2(1)
-------------	--	-------------

LAST_NAME		VARCHAR2(12)
-----------	--	--------------

GENDER		VARCHAR2(1)
--------	--	-------------

AGE		NUMBER(6)
-----	--	-----------

TYPE		VARCHAR2(15)
------	--	--------------

HAIR_COLOR		VARCHAR2(15)
------------	--	--------------

EYE_COLOR		VARCHAR2(15)
-----------	--	--------------

SQL> DESCRIBE Users;

Name	Null?	Type
------	-------	------

USERNAME	NOT NULL	VARCHAR2(12)
----------	----------	--------------

FIRST_NAME	NOT NULL	VARCHAR2(12)
------------	----------	--------------

MIDDLE_INIT		VARCHAR2(1)
-------------	--	-------------

LAST_NAME	NOT NULL	VARCHAR2(12)
-----------	----------	--------------

BIRTHDAY NOT NULL DATE

GENDER NOT NULL VARCHAR2(1)

SQL> DESCRIBE GM_Bridge;

Name	Null?	Type
------	-------	------

GENRE		VARCHAR2(15)
-------	--	--------------

MANGA_ID		NUMBER(6)
----------	--	-----------

SQL> DESCRIBE GA_Bridge;

Name	Null?	Type
------	-------	------

GENRE		VARCHAR2(15)
-------	--	--------------

MANGA_ID		NUMBER(6)
----------	--	-----------

SQL> DESCRIBE AU_Bridge;

Name	Null?	Type
------	-------	------

ANIME_ID		NUMBER(5)
----------	--	-----------

USERNAME		VARCHAR2(12)
----------	--	--------------

SQL> DESCRIBE AC_Bridge;

Name	Null?	Type
------	-------	------

ANIME_ID		NUMBER(5)
----------	--	-----------

CHARACTER_ID		NUMBER(22)
--------------	--	------------

SQL> DESCRIBE AS_Bridge;

Name	Null?	Type
------	-------	------

ANIME_ID		NUMBER(6)
----------	--	-----------

STUDIO_ID		NUMBER(4)
-----------	--	-----------

SQL>

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```
SQL> SET ECHO OFF
```

SQL Data Manipulation scripts

Script

SPOOL Output-AnimeManipulation.txt

--SPOOL Output.txt APPEND

SET ECHO ON

SET LINESIZE 32767

SET TRIMSPOOL ON

SET TRIMOUT ON

/*

Anime Test Data

*/

INSERT INTO Anime(anime_id, anime_title, episodes, release_date, rating)
VALUES(1, 'Steins;Gate', 24, date'2011-04-06', 9.13);

INSERT INTO Anime(anime_id, anime_title, episodes, release_date, rating)
VALUES('2', 'Bleach', '366', date'2004-10-05', '7.88');

INSERT INTO Anime(anime_id, anime_title, episodes, release_date, rating)
VALUES('3', 'One Piece', '867', date'1999-05-20', '8.53');

INSERT INTO Anime(anime_id, anime_title, episodes, release_date, rating)
VALUES('4', 'Dragonball Z', '291', date'1989-04-26', '8.29');

INSERT INTO Anime(anime_id, anime_title, episodes, release_date, rating)
VALUES('5', 'Black Clover', '88', date'2017-10-3', '7.00');

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/*

Creator Test Data

*/

```
INSERT INTO Creator(creator_id, first_name, middle_init, last_name, age)
VALUES('1', 'Yomi', 'J', 'Sarachi', '35');
```

```
INSERT INTO Creator(creator_id, first_name, middle_init, last_name, age)
VALUES('2', 'Tite', '', 'Kubo', '41');
```

```
INSERT INTO Creator(creator_id, first_name, middle_init, last_name, age)
VALUES('3', 'Oda', '', 'Eiichiro', '44');
```

```
INSERT INTO Creator(creator_id, first_name, middle_init, last_name, age)
VALUES('4', 'Akira', '', 'Toriyama', '64');
```

```
INSERT INTO Creator(creator_id, first_name, middle_init, last_name, age)
VALUES('5', 'Yuuki', '', 'Tabata', '34');
```

/*

Manga Test Data

*/

```
INSERT INTO Manga(manga_id, manga_title, chapters, release_date, rating, creator_id)
VALUES('1', 'Steins;Gate', '23', date'2009-09-26', '8.19', '1');
```

```
INSERT INTO Manga(manga_id, manga_title, chapters, release_date, rating, creator_id)
VALUES('2', 'Bleach', '705', date'2001-08-07', '7.71', '2');
```

```
INSERT INTO Manga(manga_id, manga_title, chapters, release_date, rating, creator_id)
```

```
VALUES('3', 'One Piece', '941', date'1997-07-22', '9.07', '3');
```

```
INSERT INTO Manga(manga_id, manga_title, chapters, release_date, rating, creator_id)
VALUES('4', 'Dragon Ball', '519', date'2015-06-20', '7.41', '4');
```

```
INSERT INTO Manga(manga_id, manga_title, chapters, release_date, rating, creator_id)
VALUES('5', 'Black Clover', '203', date'2015-02-16', '7.59', '5');
```

```
/*
Lopez
Studio Test Data
*/
```

```
INSERT INTO Studio(studio_id, studio_name, location)
VALUES('1', 'White Fox', 'Tokyo');
```

```
INSERT INTO Studio(studio_id, studio_name, location)
VALUES('2', 'Studio Pierrot', 'Tokyo');
```

```
INSERT INTO Studio(studio_id, studio_name, location)
VALUES('3', 'Toei Animation', 'Tokyo');
```

```
INSERT INTO Studio(studio_id, studio_name, location)
VALUES('4', 'Madhouse', 'Tokyo');
```

```
INSERT INTO Studio(studio_id, studio_name, location)
VALUES('5', 'TNK', 'Nerima');
```

```
/*
Genre Test Data
```

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*/

```
INSERT INTO Genre(genre, description)
```

```
VALUES('Action', 'fights, speed...');
```

```
INSERT INTO Genre(genre, description)
```

```
VALUES('Adventure', 'traveling across places...');
```

```
INSERT INTO Genre(genre, description)
```

```
VALUES('Horror', 'scary...');
```

```
INSERT INTO Genre(genre, description)
```

```
VALUES('Slice of life', 'everyday life...');
```

```
INSERT INTO Genre(genre, description)
```

```
VALUES('Fantasy', 'dream-like world...');
```

/*

Character Test Data

*/

```
INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, type,  
hair_color, eye_color)
```

```
VALUES('1', 'Monkey', 'D', 'Luffy', 'M', '15', 'Pirate', 'Black', 'Black');
```

```
INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, type,  
hair_color, eye_color)
```

```
VALUES('2', 'Ichigo', '', 'Kurosaki', 'M', '15', 'Soul Reaper', 'Orange', 'Orange');
```

```
INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, type,  
hair_color, eye_color)
```

```
VALUES('3', 'Yuno', "", "", 'M', "", 'Wizard', 'Black', 'Yellow');
```

```
INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, type,  
hair_color, eye_color)
```

```
VALUES('4', 'Son', "", 'Goku', 'M', "", 'Fighter', 'Black', 'Black');
```

```
INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, type,  
hair_color, eye_color)
```

```
VALUES('5', 'Asta', "", 'M', "", 'Human', 'Grey', 'Green');
```

```
/*
```

User Test Data

```
*/
```

```
INSERT INTO Users(username, first_name, middle_init, last_name, birthday, gender)
```

```
VALUES('bobby1', 'Bobby', 'K', 'Yu', date'1997-05-02', 'M');
```

```
INSERT INTO Users(username, first_name, middle_init, last_name, birthday, gender)
```

```
VALUES('bob2', 'Bob', "", 'Rob', date'2001-06-05', 'M');
```

```
INSERT INTO Users(username, first_name, middle_init, last_name, birthday, gender)
```

```
VALUES('tanash', 'Leroy', "", 'Jenkins', date'1989-04-26', 'M');
```

```
INSERT INTO Users(username, first_name, middle_init, last_name, birthday, gender)
```

```
VALUES('coolgamer2', 'Jen', 'K', 'Jane', date'1996-05-02', 'F');
```

```
INSERT INTO Users(username, first_name, middle_init, last_name, birthday, gender)
```

```
VALUES('yayeet', 'Alexis', "", 'King', date'1965-05-04', 'O');
```

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/*

GM_Bridge Test Data

*/

```
INSERT INTO GM_Bridge(genre, manga_id)
VALUES('Action', '5');
```

```
INSERT INTO GM_Bridge(genre, manga_id)
VALUES('Adventure', '5');
```

```
INSERT INTO GM_Bridge(genre, manga_id)
VALUES('Horror', '2');
```

```
INSERT INTO GM_Bridge(genre, manga_id)
VALUES('Slice of life', '1');
```

```
INSERT INTO GM_Bridge(genre, manga_id)
VALUES('Fantasy', '1');
```

/*

GA_Bridge Test Data

*/

```
INSERT INTO GA_Bridge(genre, anime_id)
VALUES('Action', '5');
```

```
INSERT INTO GA_Bridge(genre, anime_id)
VALUES('Adventure', '5');
```

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```
INSERT INTO GA_Bridge(genre, anime_id)
VALUES('Horror', '2');
```

```
INSERT INTO GA_Bridge(genre, anime_id)
VALUES('Slice of life', '1');
```

```
INSERT INTO GA_Bridge(genre, anime_id)
VALUES('Fantasy', '5');
```

```
/*
```

```
AU_Bridge Test Data
```

```
*/
```

```
INSERT INTO AU_Bridge(anime_id, username)
VALUES('1', 'bobby1');
```

```
INSERT INTO AU_Bridge(anime_id, username)
VALUES('2', 'bobby1');
```

```
INSERT INTO AU_Bridge(anime_id, username)
VALUES('3', 'bobby1');
```

```
INSERT INTO AU_Bridge(anime_id, username)
VALUES('2', 'bob2');
```

```
INSERT INTO AU_Bridge(anime_id, username)
VALUES('2', 'tanash');
```

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/*

AC_Bridge Test Data

*/

```
INSERT INTO AC_Bridge(anime_id, character_id)
VALUES('1', '1');
```

```
INSERT INTO AC_Bridge(anime_id, character_id)
VALUES('2', '1');
```

```
INSERT INTO AC_Bridge(anime_id, character_id)
VALUES('2', '2');
```

```
INSERT INTO AC_Bridge(anime_id, character_id)
VALUES('2', '3');
```

```
INSERT INTO AC_Bridge(anime_id, character_id)
VALUES('3', '4');
```

/*

AS_Bridge Test Data

*/

```
INSERT INTO AS_Bridge(anime_id, studio_id)
VALUES('3', '3');
```

```
INSERT INTO AS_Bridge(anime_id, studio_id)
VALUES('4', '3');
```

```
INSERT INTO AS_Bridge(anime_id, studio_id)
```

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```
VALUES('2', '2');
```

```
INSERT INTO AS_Bridge(anime_id, studio_id)
VALUES('5', '2');
```

```
INSERT INTO AS_Bridge(anime_id, studio_id)
VALUES('1', '1');
```

```
select * from Anime;
```

```
select * from Manga;
```

```
select * from Creator;
```

```
select * from Studio;
```

```
select * from Genre;
```

```
select * from Character;
```

```
select * from Users;
```

```
select * from GM_Bridge;
```

```
select * from GA_Bridge;
```

```
select * from AU_Bridge;
```

```
select * from AC_Bridge;
```

```
select * from AS_Bridge;
```

```
select anime_id, anime_title as Title, episodes
from Anime
order by episodes DESC;
```

```
drop view several;
```

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create view several as

select Anime.anime_title, Manga.manga_title, Creator.last_name

from Anime, Manga, Creator

where Anime.anime_id=2 AND Manga.manga_id=2 AND Creator.creator_id =2;

select * from several;

create or replace view several as

select Anime.anime_title, Manga.manga_title, Creator.first_name, Creator.last_name

from Anime, Manga, Creator

where Anime.anime_id=2 AND Manga.manga_id=2 AND Creator.creator_id =2;

select * from several;

/ mechanism to prevent duplicate primary keys/

INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, type,
hair_color, eye_color)

VALUES('1', 'Monkey', 'D', 'Luffy', 'M', '15', 'Pirate', 'Black', 'Black');

SET ECHO OFF

SPOOL OFF

Output

```
SQL>
```

```
SQL>
```

```
SQL> SET LINESIZE 32767
```

```
SQL> SET TRIMSPOOL ON
```

```
SQL> SET TRIMOUT ON
```

```
SQL> /*
```

```
SQL> Anime Test Data
```

```
SQL>*/
```

```
SQL> INSERT INTO Anime(anime_id, anime_title, episodes, release_date, rating)
```

```
2 VALUES(1, 'Steins;Gate', 24, date'2011-04-06', 9.13);
```

```
1 row inserted.
```

```
SQL>
```

```
SQL> INSERT INTO Anime(anime_id, anime_title, episodes, release_date, rating)
```

```
2 VALUES('2', 'Bleach', '366', date'2004-10-05', '7.88');
```

```
1 row inserted.
```

```
SQL>
```

```
SQL> INSERT INTO Anime(anime_id, anime_title, episodes, release_date, rating)
```

```
2 VALUES('3', 'One Piece', '867', date'1999-05-20', '8.53');
```

```
1 row inserted.
```

```
SQL>
```

```
SQL> INSERT INTO Anime(anime_id, anime_title, episodes, release_date, rating)
```

```
2 VALUES('4', 'Dragonball Z', '291', date'1989-04-26', '8.29');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Anime(anime_id, anime_title, episodes, release_date, rating)
```

```
2 VALUES('5', 'Black Clover', '88', date'2017-10-3', '7.00');
```

1 row inserted.

SQL>

```
SQL> /*
```

```
SQL>Creator Test Data
```

```
SQL>*/
```

```
SQL> INSERT INTO Creator(creator_id, first_name, middle_init, last_name, age)
```

```
2 VALUES('1', 'Yomi', 'J', 'Sarachi', '35');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Creator(creator_id, first_name, middle_init, last_name, age)
```

```
2 VALUES('2', 'Tite', '', 'Kubo', '41');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Creator(creator_id, first_name, middle_init, last_name, age)
```

```
2 VALUES('3', 'Oda', '', 'Eiichiro', '44');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Creator(creator_id, first_name, middle_init, last_name, age)
      2 VALUES('4', 'Akira', '', 'Toriyama', '64');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Creator(creator_id, first_name, middle_init, last_name, age)
      2 VALUES('5', 'Yuuki', '', 'Tabata', '34');
```

1 row inserted.

SQL>

SQL> /*

SQL>Manga Test Data

SQL>*/

```
SQL> INSERT INTO Manga(manga_id, manga_title, chapters, release_date, rating, creator_id)
      2 VALUES('1', 'Steins;Gate', '23', date'2009-09-26', '8.19', '1');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Manga(manga_id, manga_title, chapters, release_date, rating, creator_id)
      2 VALUES('2', 'Bleach', '705', date'2001-08-07', '7.71', '2');
```

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1 row inserted.

SQL>

```
SQL> INSERT INTO Manga(manga_id, manga_title, chapters, release_date, rating, creator_id)
      2 VALUES('3', 'One Piece', '941', date'1997-07-22', '9.07', '3');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Manga(manga_id, manga_title, chapters, release_date, rating, creator_id)
      2 VALUES('4', 'Dragon Ball', '519', date'2015-06-20', '7.41', '4');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Manga(manga_id, manga_title, chapters, release_date, rating, creator_id)
      2 VALUES('5', 'Black Clover', '203', date'2015-02-16', '7.59', '5');
```

1 row inserted.

SQL>

SQL> /*

SQL> Studio Test Data

SQL> */

```
SQL> INSERT INTO Studio(studio_id, studio_name, location)
      2 VALUES('1', 'White Fox', 'Tokyo');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Studio(studio_id, studio_name, location)
2 VALUES('2', 'Studio Pierrot', 'Tokyo');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Studio(studio_id, studio_name, location)
2 VALUES('3', 'Toei Animation', 'Tokyo');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Studio(studio_id, studio_name, location)
2 VALUES('4', 'Madhouse', 'Tokyo');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Studio(studio_id, studio_name, location)
2 VALUES('5', 'TNK', 'Nerima');
```

1 row inserted.

SQL>

SQL> /*

SQL>Genre Test Data

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SQL>*/

```
SQL> INSERT INTO Genre(genre, description)
2 VALUES('Action', 'fights, speed...');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Genre(genre, description)
2 VALUES('Adventure', 'traveling across places...');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Genre(genre, description)
2 VALUES('Horror', 'scary...');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Genre(genre, description)
2 VALUES('Slice of life', 'everyday life...');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Genre(genre, description)
2 VALUES('Fantasy', 'dream-like world...');
```

Kaelynn Lopez

1 row inserted.

SQL>

SQL> /*

SQL>Character Test Data

SQL>*/

SQL> INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, type, hair_color, eye_color)

2 VALUES('1', 'Monkey', 'D', 'Luffy', 'M', '15', 'Pirate', 'Black', 'Black');

1 row inserted.

SQL>

SQL> INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, type, hair_color, eye_color)

2 VALUES('2', 'Ichigo', '', 'Kurosaki', 'M', '15', 'Soul Reaper', 'Orange', 'Orange');

1 row inserted.

SQL>

SQL> INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, type, hair_color, eye_color)

2 VALUES('3', 'Yuno', '', '', 'M', '', 'Wizard', 'Black', 'Yellow');

1 row inserted.

SQL>

SQL> INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, type, hair_color, eye_color)

2 VALUES('4', 'Son', '', 'Goku', 'M', '', 'Fighter', 'Black', 'Black');

1 row inserted.

SQL>

```
SQL> INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age,
type, hair_color, eye_color)
```

```
2 VALUES('5', 'Asta', ", ", 'M', ", 'Human', 'Grey', 'Green');
```

1 row inserted.

SQL>

SQL> /*

SQL>User Test Data

SQL>*/

```
SQL> INSERT INTO Users(username, first_name, middle_init, last_name, birthday, gender)
```

```
2 VALUES('bobby1', 'Bobby', 'K', 'Yu', date'1997-05-02', 'M');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Users(username, first_name, middle_init, last_name, birthday, gender)
```

```
2 VALUES('bob2', 'Bob', ", 'Rob', date'2001-06-05', 'M');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Users(username, first_name, middle_init, last_name, birthday, gender)
```

```
2 VALUES('tanash', 'Leroy', ", 'Jenkins', date'1989-04-26', 'M');
```

Kaelynn Lopez

1 row inserted.

SQL>

```
SQL> INSERT INTO Users(username, first_name, middle_init, last_name, birthday, gender)
      2 VALUES('coolgamer2', 'Jen', 'K', 'Jane', date'1996-05-02', 'F');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO Users(username, first_name, middle_init, last_name, birthday, gender)
      2 VALUES('yayeet', 'Alexis', '', 'King', date'1965-05-04', 'O');
```

1 row inserted.

SQL>

SQL>

SQL> /*

SQL>GM_Bridge Test Data

SQL>*/

```
SQL> INSERT INTO GM_Bridge(genre, manga_id)
      2 VALUES('Action', '5');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO GM_Bridge(genre, manga_id)
      2 VALUES('Adventure', '5');
```

Kaelynn Lopez

1 row inserted.

SQL>

```
SQL> INSERT INTO GM_Bridge(genre, manga_id)
      2 VALUES('Horror', '2');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO GM_Bridge(genre, manga_id)
      2 VALUES('Slice of life', '1');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO GM_Bridge(genre, manga_id)
      2 VALUES('Fantasy', '1');
```

1 row inserted.

SQL>

SQL>

SQL> /*

SQL>GA_Bridge Test Data

SQL>*/

```
SQL> INSERT INTO GA_Bridge(genre, anime_id)
      2 VALUES('Action', '5');
```

Kaelynn Lopez

1 row inserted.

SQL>

```
SQL> INSERT INTO GA_Bridge(genre, anime_id)
      2 VALUES('Adventure', '5');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO GA_Bridge(genre, anime_id)
      2 VALUES('Horror', '2');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO GA_Bridge(genre, anime_id)
      2 VALUES('Slice of life', '1');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO GA_Bridge(genre, anime_id)
      2 VALUES('Fantasy', '5');
```

1 row inserted.

SQL>

SQL> /*

Kaelynn Lopez

SQL>AU_Bridge Test Data

SQL>*/

```
SQL> INSERT INTO AU_Bridge(anime_id, username)
      2 VALUES('1', 'bobby1');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO AU_Bridge(anime_id, username)
      2 VALUES('2', 'bobby1');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO AU_Bridge(anime_id, username)
      2 VALUES('3', 'bobby1');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO AU_Bridge(anime_id, username)
      2 VALUES('2', 'bob2');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO AU_Bridge(anime_id, username)
      2 VALUES('2', 'tanash');
```

1 row inserted.

SQL>

SQL>

SQL> /*

SQL>AC_Bridge Test Data

SQL>*/

```
SQL> INSERT INTO AC_Bridge(anime_id, character_id)
      2 VALUES('1', '1');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO AC_Bridge(anime_id, character_id)
      2 VALUES('2', '1');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO AC_Bridge(anime_id, character_id)
      2 VALUES('2', '2');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO AC_Bridge(anime_id, character_id)
      2 VALUES('2', '3');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO AC_Bridge(anime_id, character_id)
2 VALUES('3', '4');
```

1 row inserted.

SQL>

SQL> /*

SQL>AS_Bridge Test Data

SQL>*/

```
SQL> INSERT INTO AS_Bridge(anime_id, studio_id)
2 VALUES('3', '3');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO AS_Bridge(anime_id, studio_id)
2 VALUES('4', '3');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO AS_Bridge(anime_id, studio_id)
2 VALUES('2', '2');
```

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1 row inserted.

SQL>

```
SQL> INSERT INTO AS_Bridge(anime_id, studio_id)
      2 VALUES('5', '2');
```

1 row inserted.

SQL>

```
SQL> INSERT INTO AS_Bridge(anime_id, studio_id)
      2 VALUES('1', '1');
```

1 row inserted.

SQL>

SQL>

SQL> select * from Anime;

ANIME_ID	ANIME_TITLE	EPISODES	RELEASE_D	RATING
1	Steins;Gate	24	06-APR-11	9
2	Bleach	366	05-OCT-04	8
3	One Piece	867	20-MAY-99	9
4	Dragonball Z	291	26-APR-89	8
5	Black Clover	88	03-OCT-17	7

SQL> select * from Manga;

MANGA_ID	MANGA_TITLE	CHAPTERS	RELEASE_D	RATING	CREATOR_ID
1	Steins;Gate	23	26-SEP-09	8	1
2	Bleach	705	07-AUG-01	8	2
3	One Piece	941	22-JUL-97	9	3
4	Dragon Ball	519	20-JUN-15	7	4
5	Black Clover	203	16-FEB-15	8	5

SQL> select * from Creator;

CREATOR_ID	FIRST_NAME	M	LAST_NAME	AGE
1	Yomi	J	Sarachi	35
2	Tite	Kubo		41
3	Oda	Eiichiro		44
4	Akira	Toriyama		64
5	Yuuki	Tabata		34

SQL> select * from Studio;

STUDIO_ID	STUDIO_NAME	LOCATION
1	White Fox	Tokyo
2	Studio Pierrot	Tokyo
3	Toei Animation	Tokyo
4	Madhouse	Tokyo
5	TNK	Nerima

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SQL> select * from Genre;

GENRE	DESCRIPTION
Action	fight, speed...
Adventure	traveling across places...
Horror	scary...
Slice of life	everyday life...
Fantasy	dream-like world...

SQL> select * from Character;

CHARACTER_ID	FIRST_NAME	M	LAST_NAME	G	AGE	TYPE	HAIR_COLOR	EYE_COLOR
1	Monkey	D	Luffy	M	15	Pirate	Black	Black
2	Ichigo	Kurosaki	M	15	Soul Reaper	Orange	Orange	
3	Yuno		M		Wizard	Black	Yellow	
4	Son	Goku	M		Fighter	Black	Black	
5	Asta		M		Human	Grey	Green	

SQL> select * from Users;

USERNAME	FIRST_NAME	M	LAST_NAME	BIRTHDAY	G
bobby1	Bobby	K	Yu	02-MAY-97	M
bob2	Bob	Rob		05-JUN-01	M
tanash	Leroy	Jenkins		26-APR-89	M
coolgamer2	Jen	K	Jane	02-MAY-96	F

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yayeet Alexis King 04-MAY-65 O

SQL> select * from GM_Bridge;

GENRE	MANGA_ID
-------	----------

Action	5
--------	---

Adventure	5
-----------	---

Horror	2
--------	---

Slice of life	1
---------------	---

Fantasy	1
---------	---

SQL> select * from GA_Bridge;

GENRE	ANIME_ID
-------	----------

Action	5
--------	---

Adventure	5
-----------	---

Horror	2
--------	---

Slice of life	1
---------------	---

Fantasy	5
---------	---

SQL> select * from AU_Bridge;

ANIME_ID	USERNAME
----------	----------

1	bobby1
---	--------

2	bobby1
---	--------

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3 bobby1

2 bob2

2 tanash

SQL> select * from AC_Bridge;

ANIME_ID CHARACTER_ID

1 1

2 1

2 2

2 3

3 4

SQL> select * from AS_Bridge;

ANIME_ID STUDIO_ID

3 3

4 3

2 2

5 2

1 1

SQL>

SQL> select anime_id, anime_title as Title, episodes

2 from Anime

3 order by episodes DESC;

ANIME_ID	TITLE	EPISODES
3	One Piece	867
2	Bleach	366
4	Dragonball Z	291
5	Black Clover	88
1	Steins;Gate	24

SQL>

SQL> drop view several;

View SEVERAL dropped.

SQL>

SQL> create view several as

```
2 select Anime.anime_title, Manga.manga_title, Creator.last_name
3 from Anime, Manga, Creator
4 where Anime.anime_id=2 AND Manga.manga_id=2 AND Creator.creator_id =2;
```

View SEVERAL created.

SQL>

SQL> select * from several;

ANIME_TITLE	MANGA_TITLE	LAST_NAME
Bleach	Bleach	Kubo

SQL>

SQL> create or replace view several as

```
2 select Anime.anime_title, Manga.manga_title, Creator.first_name, Creator.last_name
3 from Anime, Manga, Creator
4 where Anime.anime_id=2 AND Manga.manga_id=2 AND Creator.creator_id =2;
```

View SEVERAL created.

SQL>

SQL> select * from several;

ANIME_TITLE	MANGA_TITLE	FIRST_NAME	LAST_NAME
-------------	-------------	------------	-----------

Bleach	Bleach	Tite	Kubo
--------	--------	------	------

SQL>

SQL> */ mechanism to prevent duplicate primary keys*/

Error starting at line : 262 File @ M:\csis3222\proj\AnimeManipulation.sql

In command -

/ mechanism to prevent duplicate primary keys/

Error report -

Unknown Command

SQL> INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, type, hair_color, eye_color)

```
2 VALUES('1', 'Monkey', 'D', 'Luffy', 'M', '15', 'Pirate', 'Black', 'Black');
```

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Error starting at line : 263 File @ M:\csis3222\proj\AnimeManipulation.sql

In command -

```
INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, type,  
hair_color, eye_color)
```

```
VALUES('1', 'Monkey', 'D', 'Luffy', 'M', '15', 'Pirate', 'Black', 'Black')
```

Error report -

ORA-00001: unique constraint (CSIS3222_LOPEZK8.SYS_C00249915) violated

SQL>

SQL>

SQL> SET ECHO OFF

SQL queries

Scripts

SPOOL Output-AnimeQueries.txt

--SPOOL Output.txt APPEND

SET ECHO ON

SET LINESIZE 32767

SET TRIMSPOOL ON

SET TRIMOUT ON

/* 1. List Anime by Episodes in descending order */

select anime_title

from Anime

Order by Episodes DESC;

/* 2. Get anime id that a character belongs to */

select anime_id

from AC_Bridge

where AC_Bridge.character_id=1;

/* 3. Calculate age of a User from their birthday */

select first_name, last_name, floor(months_between(sysdate,birthday)/12) as Age

from Users;

/* 4. */

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/* 5. */

/* 6. */

/* 7. */

/* 8. */

/* 9. */

/* 10. */

SET ECHO OFF

SPOOL OFF

Output

```
SPOOL Output-AnimeQueries.txt
```

```
--SPOOL Output.txt APPEND
```

```
SET ECHO ON
```

```
SET LINESIZE 32767
```

```
SET TRIMSPOOL ON
```

```
SET TRIMOUT ON
```

```
/* 1. List Anime by Episodes in descending order */
```

```
select anime_title
```

```
from Anime
```

```
Order by Episodes DESC;
```

```
/* 2. Get anime id that a character belongs to */
```

```
select anime_id
```

```
from AC_Bridge
```

```
where AC_Bridge.character_id=1;
```

```
/* 3. Calulate age of a User from their birthday */
```

```
select first_name, last_name, floor(months_between(sysdate,birthday)/12) as Age
```

```
from Users;
```

```
/* 4. */
```

```
/* 5. */
```

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/* 6. */

/* 7. */

/* 8. */

/* 9. */

/* 10. */

SET ECHO OFF

SPOOL OFF

Slides

Anime Database Design & Implementation

Faye Lopez

Project Intent

A new database for Anime

- ▶ Anime is a style of Japanese film and Animation



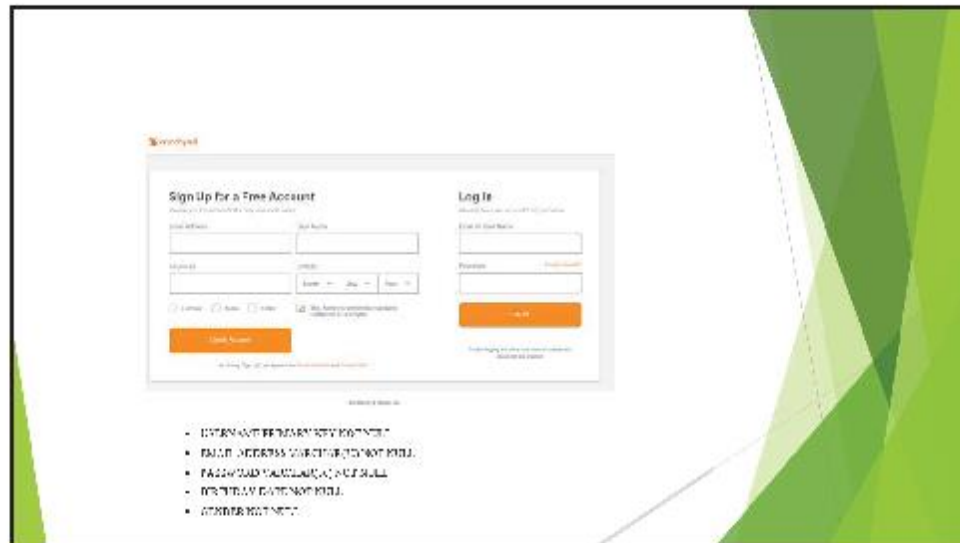
Merging Three Websites

- ▶ crunchyroll.com
- ▶ myanimelist.net
- ▶ anidb.net

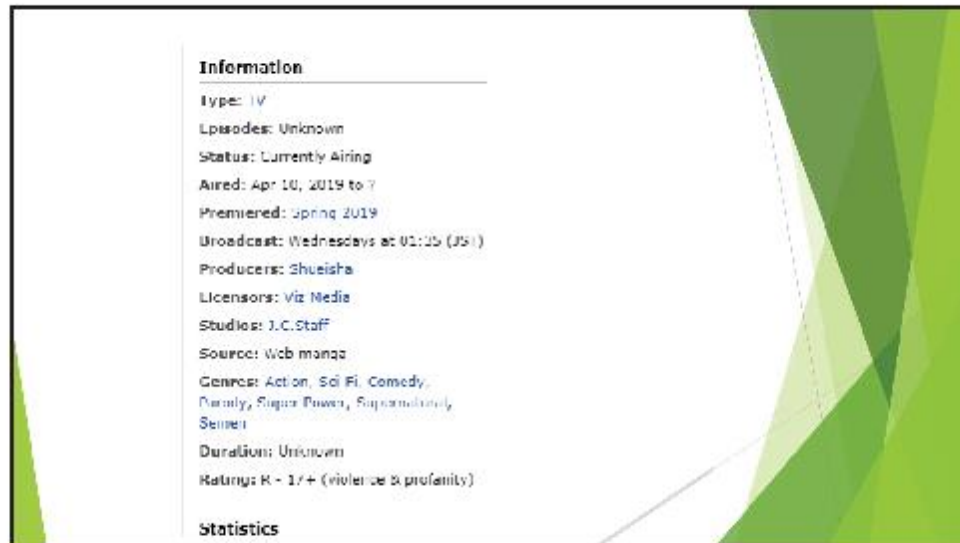
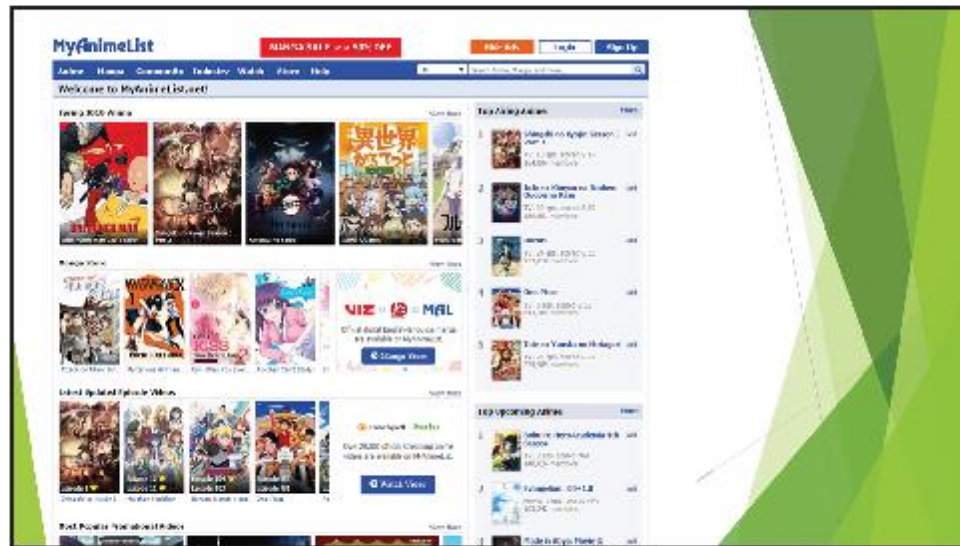


crunchyroll

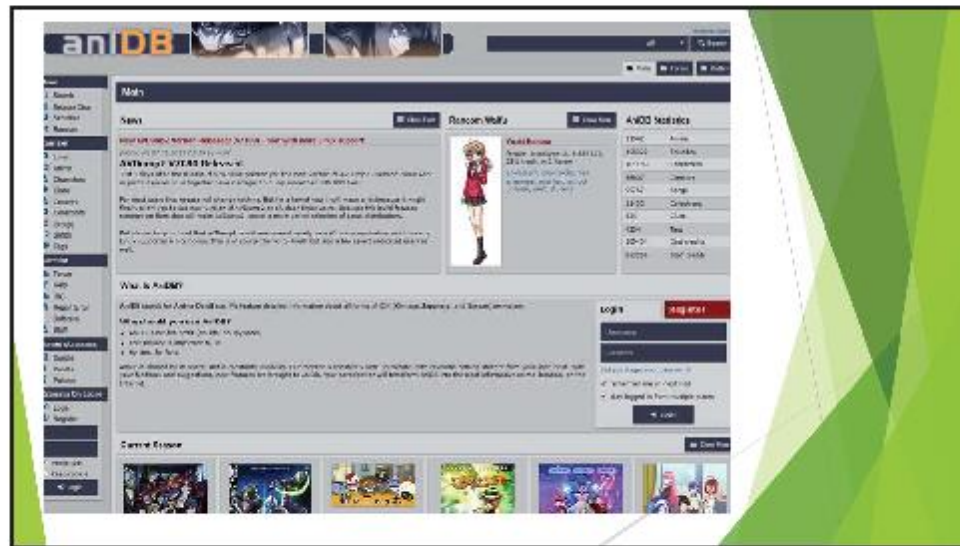




4/28/2019



4/28/2019

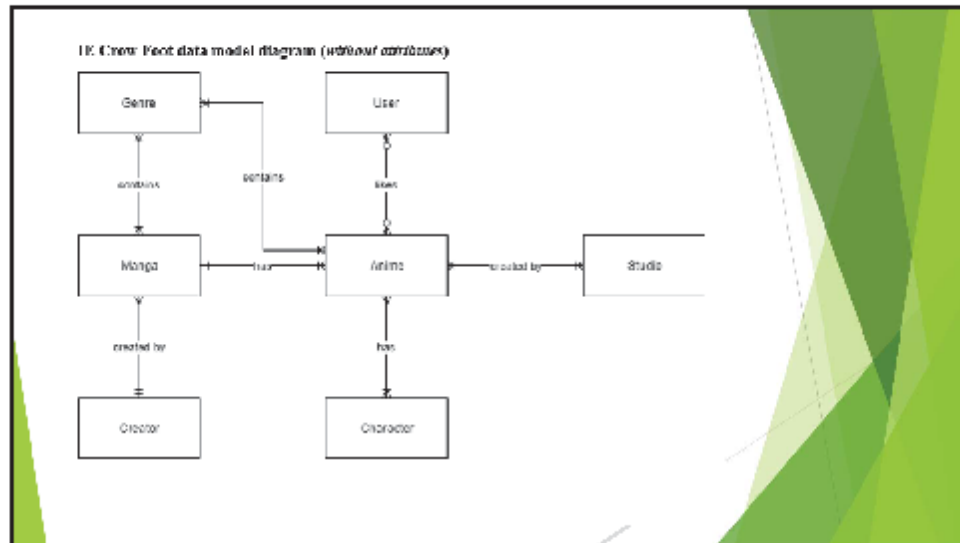
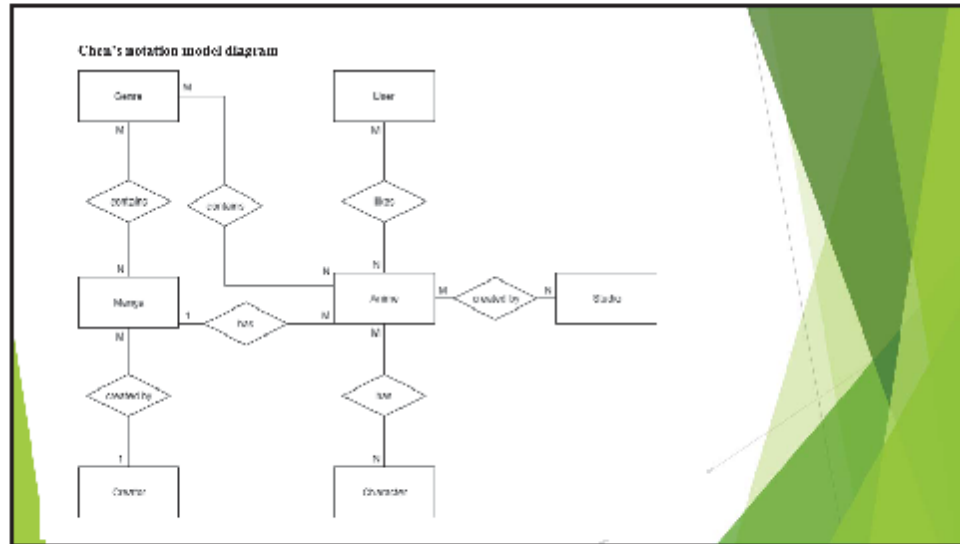


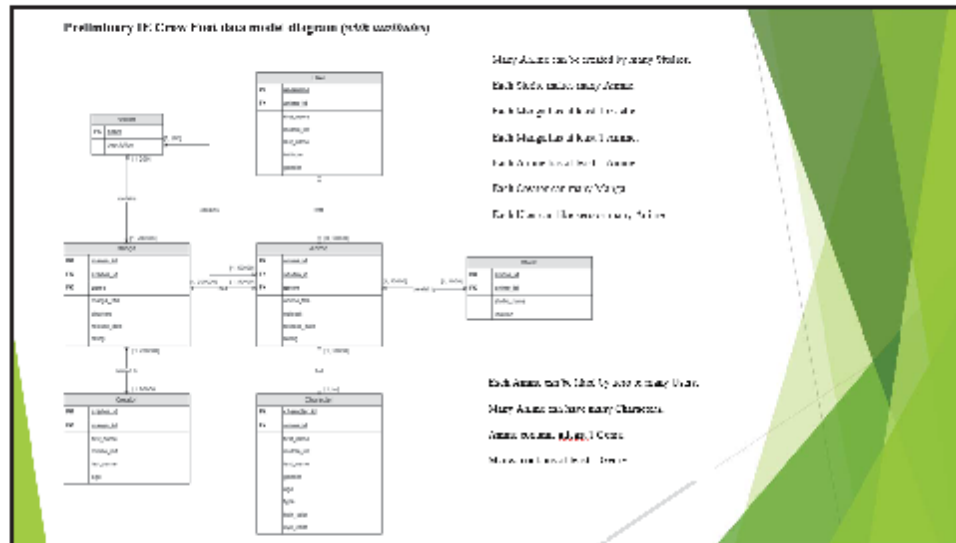
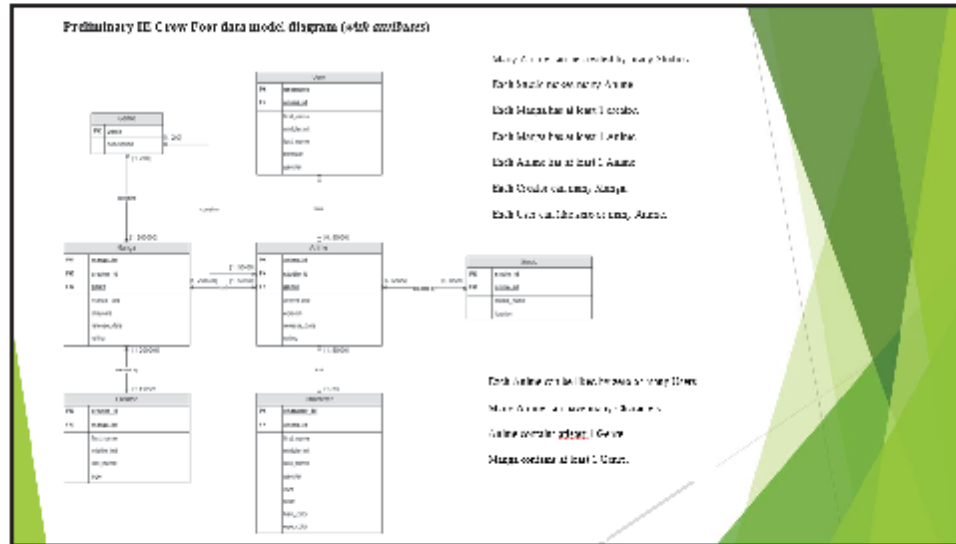
Scope

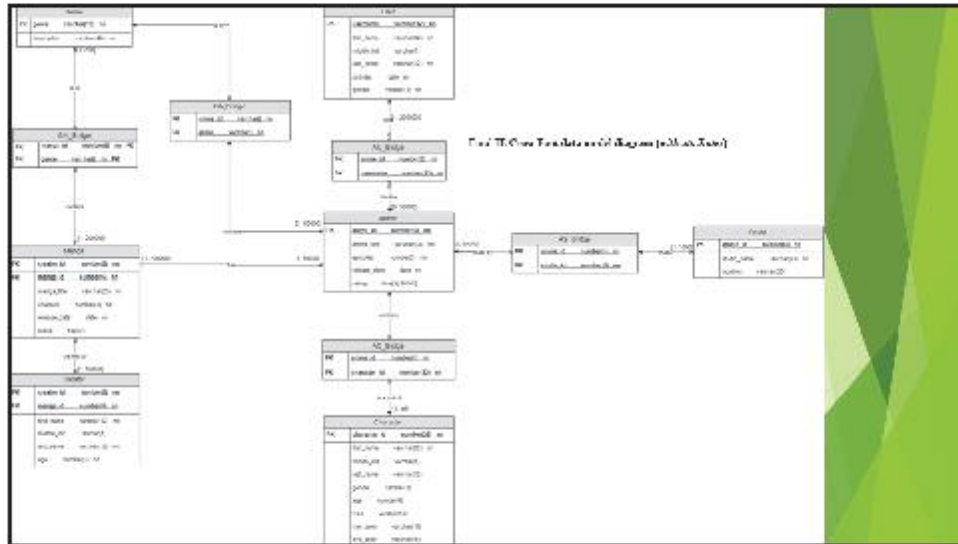
- ▶ Create a database of Anime.
- ▶ Relation database design and implementation.
 - ▶ Diagrams, sample data forms, prototypes
- ▶ More reliable and gets best parts from each website.
- ▶ Self-Sustainable.

Entities

- ▶ Anime - the name of the anime and its attributes
- ▶ Manga - graphic novels that are usually adapted into anime
- ▶ Studio - the company or studio that creates and releases anime adaptations
- ▶ Genre - all the different genre types
- ▶ Character - characters in anime
- ▶ Creator - creators of anime
- ▶ User - anime fan account







Add Anime

Title: _____
 Episodes: _____
 Release Date: _____
 Genre: _____
 Studio: _____
 Manga: _____

Add Character

First Name: _____
 Middle Initial: _____
 Last Name: _____
 Gender: _____
 Age: _____
 Type: _____
 Hair Color: _____
 Eye Color: _____
 Anime: _____

Add Character

First Name: _____
 Middle Initial: _____
 Last Name: _____
 Gender: _____
 Age: _____
 Type: _____
 Hair Color: _____
 Eye Color: _____
 Anime: _____

Add Creator

First Name: _____
 Middle Initial: _____
 Last Name: _____
 Age: _____

Add Genre

Genre: _____
 Description: _____

Prototypes

Add Manga

Title : _____

Chapters : _____

Release Date: _____

Genre : _____

Creator : _____

Create User

Username : _____

First Name : _____

Middle Initial: _____

Last Name : _____

Birth day : _____

Gender : _____

Add Studio

Name : _____

Location: _____

Sample Data						
id	username	password	email	first_name	last_name	gender
1	John	123456	john@domain.com	John	Doe	Male
2	Jane	654321	jane@domain.com	Jane	Doe	Female
3	Bob	111111	bob@domain.com	Bob	Smith	Male
4	Alice	222222	alice@domain.com	Alice	Johnson	Female
5	Charlie	333333	charlie@domain.com	Charlie	Brown	Male

Sample Data						
id	title	chapters	release_date	genre	creator	studio
1	One Piece	1000	1997-07-01	Shounen	Eiichiro Oda	Shueisha
2	Naruto	700	1999-09-01	Shounen	Uchihiro	Shueisha
3	Dragon Ball Z	500	1989-02-01	Shounen	Akira Toriyama	Shueisha
4	Attack on Titan	100	2009-09-01	Seinen	Hajime Isayama	Kodansha
5	My Hero Academia	150	2015-07-01	Shounen	Kohei Horikoshi	Shueisha

Sample Data						
id	name	location	genre	creator	studio	year
1	Shueisha	Tokyo, Japan	Shounen	Eiichiro Oda	Shueisha	1997
2	Kodansha	Tokyo, Japan	Seinen	Hajime Isayama	Kodansha	2009
3	Shogakukan	Tokyo, Japan	Shounen	Akira Toriyama	Shogakukan	1989
4	Shueisha	Tokyo, Japan	Shounen	Uchihiro	Shueisha	1999
5	Shueisha	Tokyo, Japan	Shounen	Akira Toriyama	Shueisha	1989

TV Shows		
Season	Genre	Seasons
Season 1	Sci-Fi	1
Season 2	Comedy	2
Season 3	Sci-Fi	1
Season 4	Sci-Fi	1
Season 5	Comedy	1
TV Shows		
Season	Genre	Seasons
Season 1	Comedy	1
Season 2	Comedy	1
Season 3	Comedy	1
Season 4	Comedy	1
Season 5	Comedy	1
TV Shows		
Season	Genre	Seasons
Season 1	Comedy	1
Season 2	Comedy	1
Season 3	Comedy	1
Season 4	Comedy	1
Season 5	Comedy	1

Sample Data

Creating Tables

```

SQL> /
SQL> create table Anime(
  1 anime_id number(4) primary key,
  2 anime_title varchar(12) not null,
  3 episodes number(4) not null,
  4 release_date date not null,
  5 rating float(2)
  6 );
SQL> /
Table ANIME created.

```

```

SQL> create table Anime(
  1 anime_id number(4) primary key,
  2 anime_title varchar(12) not null,
  3 episodes number(4) not null,
  4 release_date date not null,
  5 rating float(2)
  6 );
SQL> /
Table ANIME created.

```

```

SQL> create table Anime(
  1 anime_id number(4) primary key,
  2 anime_title varchar(12) not null,
  3 episodes number(4) not null,
  4 release_date date not null,
  5 rating float(2)
  6 );
SQL> /
Table ANIME created.

```

```

SQL> create table Anime(
  1 anime_id number(4) primary key,
  2 anime_title varchar(12) not null,
  3 episodes number(4) not null,
  4 release_date date not null,
  5 rating float(2)
  6 );
SQL> /
Table ANIME created.

```

Inserting Tables

```

SQL> insert into Anime
(Anime_id, Anime_title, Episodes, Release_D, Rating)
values (1, 'Steins;Gate', 24, '2011-04-06', 9.1);

SQL> insert into Anime
(Anime_id, Anime_title, Episodes, Release_D, Rating)
values (2, 'Bleach', 366, '2004-10-05', 8.8);

SQL> insert into Anime
(Anime_id, Anime_title, Episodes, Release_D, Rating)
values (4, 'Dragonball Z', 293, '1989-04-26', 8.9);

SQL> insert into Anime
(Anime_id, Anime_title, Episodes, Release_D, Rating)
values (5, 'Black Clover', 88, '2017-10-03', 8.5);

```

SQL> select * from Anime;

ANIME_ID	ANIME_TITLE	EPISODES	RELEASE_D	RATING
1	Steins;Gate	24	2011-04-06	9.1
2	Bleach	366	2004-10-05	8.8
3	One Piece	107	2010-10-09	9
4	Dragonball Z	293	1989-04-26	8.9
5	Black Clover	88	2017-10-03	8.5

SQL> select * from Manga;

MANGA_ID	MANGA_TITLE	CHAPTERS	RELEASE_D	RATING	CREATOR_ID
1	Steins;Gate	22	2010-09-09	9	1
2	Bleach	705	07-10-01	8	2
3	One Piece	944	11-10-97	9	3
4	Dragon Ball	549	20-10-15	7	4
5	Black Clover	200	10-10-15	8	5

SQL> select * from Creator;

CREATOR_ID	FIRST_NAME	LAST_NAME	AGE
1	Voelt	Garachd	30
2	Tite	Kubo	34
3	Oda	Eiichiro	47
4	Wada	Toriyama	61
5	Ward	Tabata	34

SQL> select * from Studio;

STUDIO_ID	STUDIO_NAME	LOCATION
1	Madhouse	Tokyo
2	Studio Pierrot	Tokyo
3	Toei Animation	Tokyo
4	Madhouse	Tokyo
5	TRC	Hartsville

Manipulating Data

```

SQL> select anime_id, anime_title as title, episodes
2 from Anime
3 order by episodes desc;

ANIME_ID  TITLE              EPISODES
-----
3 One Piece              107
2 Bleach                 366
4 Dragonball Z           293
5 Black Clover           88
1 Steins;Gate           24

```

Creating Views

[illegible]

Integrity

```

200: ?? mechanism to prevent duplicate primary keys?
Enter starting a line : 265 File # H:\mscd222\proj\mscdmshelp\palmcat.sql
In command
?? mechanism to prevent duplicate primary keys?
Enter input :
HitEnter Command

200: INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, eye, hair_color, eye_color)
VALUES('1', 'Honey', 'D', 'Luffy', 'M', '15', 'Pinkish', 'Black', 'Black');
Enter starting a line : 265 File # H:\mscd222\proj\mscdmshelp\palmcat.sql
In command
INSERT INTO Character(character_id, first_name, middle_init, last_name, gender, age, eye, hair_color, eye_color)
VALUES('1', 'Honey', 'D', 'Luffy', 'M', '15', 'Pinkish', 'Black', 'Black');
Enter input :
ORA-00001: unique constraint (SYS_C000250) violated

```

Queries

```

Q1: (201) List down by IP address, a desired age range.
Q1: (201) select IP, A
  2. from A
  3. Order by IP, A desc

Q2: (201)
select
  IP, A
  2. from A
  3. Order by IP, A desc

Q3: (201) List down A that a character belongs to.
Q3: (201) select A
  2. from A
  3. Order by A, character_id

Q4: (201) List down A that a character belongs to.
Q4: (201) select A, character_id
  2. from A
  3. Order by A, character_id

Q5: (201) List down A that a character belongs to.
Q5: (201) select A, character_id
  2. from A
  3. Order by A, character_id

```

IP	A	character_id
10.0.0.1	1	1
10.0.0.1	1	2
10.0.0.1	1	3
10.0.0.1	1	4
10.0.0.1	1	5
10.0.0.1	1	6
10.0.0.1	1	7
10.0.0.1	1	8
10.0.0.1	1	9
10.0.0.1	1	10
10.0.0.1	1	11
10.0.0.1	1	12
10.0.0.1	1	13
10.0.0.1	1	14
10.0.0.1	1	15
10.0.0.1	1	16
10.0.0.1	1	17
10.0.0.1	1	18
10.0.0.1	1	19
10.0.0.1	1	20
10.0.0.1	1	21
10.0.0.1	1	22
10.0.0.1	1	23
10.0.0.1	1	24
10.0.0.1	1	25
10.0.0.1	1	26
10.0.0.1	1	27
10.0.0.1	1	28
10.0.0.1	1	29
10.0.0.1	1	30
10.0.0.1	1	31
10.0.0.1	1	32
10.0.0.1	1	33
10.0.0.1	1	34
10.0.0.1	1	35
10.0.0.1	1	36
10.0.0.1	1	37
10.0.0.1	1	38
10.0.0.1	1	39
10.0.0.1	1	40
10.0.0.1	1	41
10.0.0.1	1	42
10.0.0.1	1	43
10.0.0.1	1	44
10.0.0.1	1	45
10.0.0.1	1	46
10.0.0.1	1	47
10.0.0.1	1	48
10.0.0.1	1	49
10.0.0.1	1	50
10.0.0.1	1	51
10.0.0.1	1	52
10.0.0.1	1	53
10.0.0.1	1	54
10.0.0.1	1	55
10.0.0.1	1	56
10.0.0.1	1	57
10.0.0.1	1	58
10.0.0.1	1	59
10.0.0.1	1	60
10.0.0.1	1	61
10.0.0.1	1	62
10.0.0.1	1	63
10.0.0.1	1	64
10.0.0.1	1	65
10.0.0.1	1	66
10.0.0.1	1	67
10.0.0.1	1	68
10.0.0.1	1	69
10.0.0.1	1	70
10.0.0.1	1	71
10.0.0.1	1	72
10.0.0.1	1	73
10.0.0.1	1	74
10.0.0.1	1	75
10.0.0.1	1	76
10.0.0.1	1	77
10.0.0.1	1	78
10.0.0.1	1	79
10.0.0.1	1	80
10.0.0.1	1	81
10.0.0.1	1	82
10.0.0.1	1	83
10.0.0.1	1	84
10.0.0.1	1	85
10.0.0.1	1	86
10.0.0.1	1	87
10.0.0.1	1	88
10.0.0.1	1	89
10.0.0.1	1	90
10.0.0.1	1	91
10.0.0.1	1	92
10.0.0.1	1	93
10.0.0.1	1	94
10.0.0.1	1	95
10.0.0.1	1	96
10.0.0.1	1	97
10.0.0.1	1	98
10.0.0.1	1	99
10.0.0.1	1	100

End

