

DATABASE Z

SCOTT

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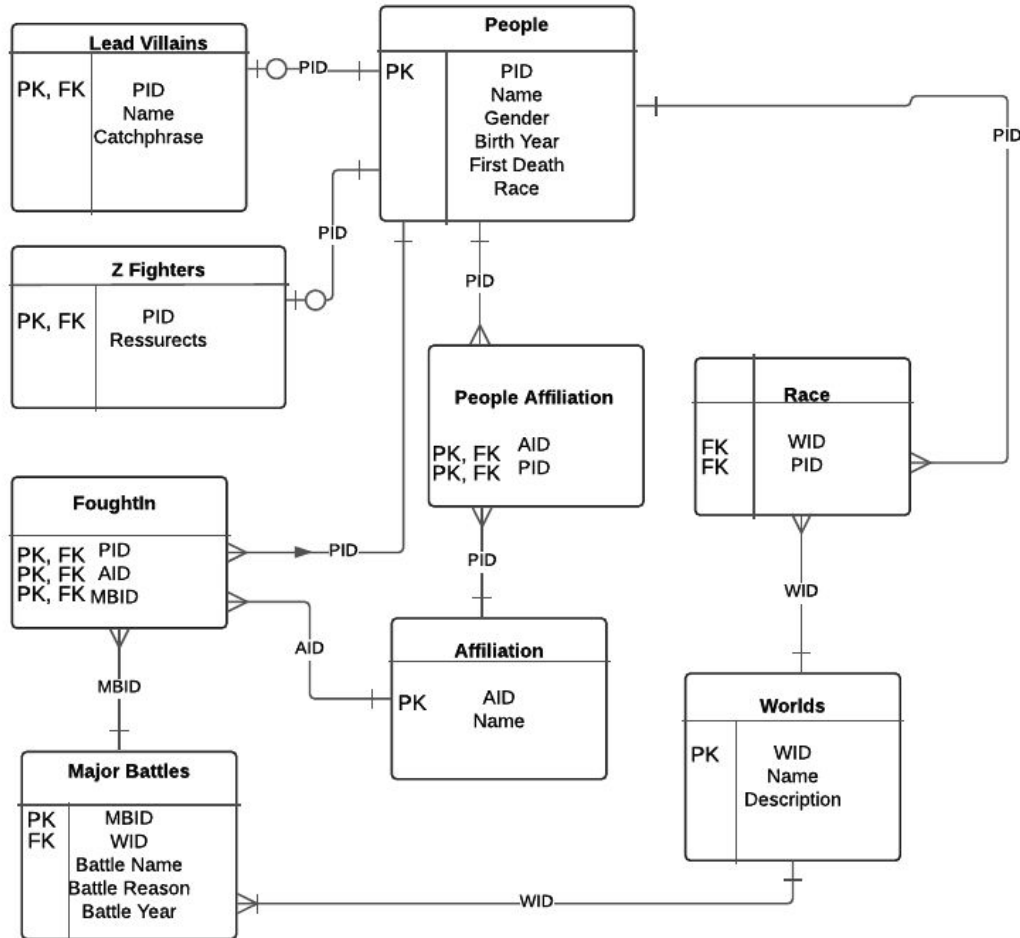


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Executive Summary

This project is a designed database which holds records from the Dragon Ball Universe, specifically the Dragon Ball Z timeframe. An ER diagram will show tables relations, followed by the table descriptions. The sample data stored deals with people and major battles that took place during this time. This database was created so that the Kai's could document, analyze, and study in order to prevent future threats to the universe. Through stored procedures and queries, Kai's can gain a better understanding of the people who lived during this time, and the battles the ensued. There will also be a section devoted to improvement.



People Table

CREATE TABLE People(

PID INT NOT NULL,
 PeopleName TEXT NOT NULL,
 gender CHAR(1) NOT NULL
 CHECK(gender='m' or gender='f'),
 birthYear INT,
 firstDeathYear INT,
 Race TEXT,
 primary key(PID)
);

People					
PID	Name	Gender	Birth Year	First Death Year	Race
1	Goku	m	734	761	Saiyan
2	Gohan	m	757	774	Human
3	Goten	m	767	774	Human
4	Bulma	F	733	N/A	Human
5	Trunks	m	766	774	Human
6	Krillin	m	736	762	Human
7	Yamcha	m	733	762	Human
8	Tien	m	733	762	Human
9	Chiaotzu	m	738	762	Human
10	Piccolo	m	753	762	Namekian
11	Vegeta	m	732	764	Saiyan
12	Frieza	m	N/A	764	Frost Demon

13	Cell	m	786	767	Android
14	Kid Buu	m	N/A	774	Majin
15	Zarbon	m	N/A	764	N/A
16	Dodoria	m	N/A	764	N/A
17	Captain Ginyu	m	N/A	764	N/A
18	Recoome	m	N/A	764	N/A
19	Guldo	m	N/A	764	N/A
20	Jeice	m	N/A	764	N/A
21	Burter	m	N/A	764	N/A
22	Yamu	m	N/A	774	N/A
23	Pui Pui	m	N/A	77	N/A
24	Yakon	m	N/A	774	N/A
25	Dabura	m	N/A	774	N/A
26	Droid 16	m	N/A	767	Android
27	Droid 17	m	N/A	767	Android
28	Droid 18	F	N/A	774	Android

Functional Dependencies:

PID → name, gender, birth year, first death year

Z Fighters Table

CREATE TABLE ZFighters(

pid INT NOT NULL REFERENCES People(PID),
resurrects INT NOT NULL,
primary key(PID)
);

Functional Dependencies: PID → Resurrects

Lead Villains Table

CREATE TABLE LeadVillains(

pid INT NOT NULL REFERENCES People(PID),
catchphrase TEXT NOT NULL,
primary key(PID)
);

Functional Dependencies: PID → Catchphrase

Z fighters	
PID	Resurrects
1	2
2	1
3	1
4	1
5	1
6	2
7	2
8	2
9	2

Lead Villains	
PID	Catchphrase
11	Kakorot
12	This isn't even my final form
13	
14	

People Affiliation Table

CREATE TABLE PeopleAffiliation(

PID INT NOT NULL REFERENCES

People(PID),

AID INT NOT NULL REFERENCES

Affiliation(AID),

primary key(PID, AID)

);

Functional Dependencies: PID, AID →

People Affiliation	
PID	AID

Affiliation Table

CREATE TABLE Affiliation(

AID INT NOT NULL,

AffiliationName TEXT NOT NULL,

primary key(AID)

);

Functional Dependencies: AID → Name

Affiliation	
AID	Name
1	Frieza Allies
2	Ginyu Force
3	Red Ribbon Army
4	Majin Minions

Fought In Table

CREATE TABLE FoughtIn(

PID INT NOT NULL REFERENCES People(PID),
AID INT NOT NULL REFERENCES Affiliation(AID),
MBID INT NOT NULL REFERENCES MajorBattles(MBID),
primary key(PID, AID, MBID)
);

Functional Dependencies: PID,AID,MBID →

Worlds Table

CREATE TABLE Worlds(

WID INT NOT NULL,
WorldName TEXT NOT NULL,
WorldDesc TEXT NOT NULL,
primary key(WID)
);

Functional Dependencies: WID →World Name, World Descr

Fought In		
PID	AID	MBID

Worlds		
WID	World Name	World Desc
1	Earth	Home planet to Earthings.
2	Namek	Home planet to the Nemekians
3	Planet Plant	Home planet to the Saiyans

Major Battles Table

CREATE TABLE MajorBattles(

MBID INT NOT NULL,
BattleName TEXT NOT NULL,
BattleReason TEXT NOT NULL,
BattleYear TEXT NOT NULL,
primary key(MBID)
);

Functional Dependencies: MBID → Battle Name, Battle Reason
Battle Year

Race Table

PID INT NOT NULL REFERENCES People(PID),
WID INT NOT NULL REFERENCES Worlds(WID),
primary key(PID, WID)
);

Functional Dependencies: RID, PID, WID →

Major Battles			
MBID	Battle Name	Battle Reason	Battle Year
1	Saiyan Saga	Power Stuggle	762
2	Freiza Saga	Dragon Balls	764
3	Cell Saga	World Domination	767
4	Majin Buu Saga	Magical Being	774

Race	
PID	WID

Views:

This view connects the Zfighters Table to people, in order to get the names of those who have died not only once, but twice, but have been resurrected. The title of the view, DangerZone is to alert the Kais that these individuals are constantly in danger.

```
CREATE VIEW DangerZone as  
  
SELECT peoplename  
  
FROM people p inner join ZFighters z on p.pid = z.pid  
  
where resurreicts =2  
  
Order by peoplename asc ;
```

	peoplename text
1	Chiaotzu
2	Goku
3	Tien
4	Yamcha

Views:

This view displays the names of all the affiliations that Vegeta has been involved with. Throughout the series, he has switched from the good guys and the bad guys often. Seeing as he is a Front Runner, that's the title of the View.

```
CREATE VIEW FrontRunner as  
  
SELECT AffiliationName  
  
FROM PeopleAffiliation a inner join Affiliation b on a.aid = b.aid  
      inner join People p on a.pid = p.pid  
      WHERE peoplename = 'Vegeta';
```

	affiliationname text
1	Majin Minions
2	Z Fighters
3	Main Villain

Views:

This view shows the number of battles that take place on Earth. We are always on the hunt for aliens, with a famous quote “We come in peace”, however ironically most of the fights happen here on Earth in the DBZ Universe.

```
CREATE VIEW WeComeInPeace as
```

```
SELECT BattleName
```

```
FROM Worlds w inner join MajorBattles m on w.wid = m.wid
```

```
WHERE WorldName = 'Earth';
```

	battle name text
1	Saiyan Saga
2	Cell Saga
3	Majin Buu Saga

Report:

Query that shows how old people were when they first died, as long as there was a birth date or death date is not NULL.

Keep in mind Cell was from an alternate timeline, and as such died before he was born. This will be updated.

```
SELECT PeopleName, firstDeathYear - birthYear as AgeAtFirstDeath
```

```
From People
```

```
Where birthYear IS NOT NULL AND firstDeathYear IS NOT NULL
```

```
ORDER by PeopleName DESC;
```

	peoplename text	ageatfirstdeath integer
1	Yamcha	29
2	Vegeta	32
3	Trunks	8
4	Tien	29
5	Piccolo	11
6	Krillin	26
7	Goten	7
8	Goku	27
9	Gohan	17
10	Chiaotzu	24
11	Cell	-19
12	Bulma	41

Stored Procedure:

Similar to one of the queries, this stored procedure allows a user to input a battle name, and in return will get a list of those who participated.

```
CREATE OR REPLACE FUNCTION whoFought(TEXT)
RETURNS
as
$$
DECLARE
    -- used to indicate a variable --
    inputName TEXT := $1;
BEGIN
    SELECT PeopleName
    FROM FoughtIn f inner join people p on f.pid = p.pid
        inner join MajorBattles m on f.mbid = m.mbid
    WHERE BattleName = inputName;
    Order by peopleName DESC;
END;
$$
LANGUAGE plpgsql;
```

Trigger:

This Trigger statement is to ensure that if someone is going to get resurrected, they are in fact dead. It will check by seeing if the firstDeathYear is NULL.

```
CREATE OR REPLACE FUNCTION RezCheck()
RETURNS TRIGGER
as
$$
DECLARE
BEGIN
    Select firstDeathYear
    FROM people
    IF (firstDeathYear = NULL)
        THEN
            RAISE EXCEPTION 'A person must be dead, before they can be resurrected.'
        Else
            --There is no issue--
    END IF;
    Return new;
END;
$$
LANGUAGE plpgsql;
```

```
CREATE TRIGGER ResurrectCheck
Before Update
ON ZFighters
FOR EACH ROW
EXECUTE PROCEDURE
RezCheck();
```

Security:

For Security Purposes I created two roles for Database Z: Administrator and Kai.

The Administrator has full control over the Database

```
CREATE ROLE Administrator;
```

```
REVOKE ALL ON ALL TABLES IN SCHEMA public FROM administrator;
```

```
GRANT ALL ON ALL TABLES IN SCHEMA public TO Administrator;
```

The Kai role is for any of the Kai's in the DBZ Universe. They only have access in order to change and update records.

```
Create role Kai;
```

```
REVOKE ALL ON ALL TABLES IN SCHEMA public FROM Kai;
```

```
GRANT SELECT ON ALL TABLES IN SCHEMA public to Kai;
```

```
GRANT INSERT ON ALL TABLES IN SCHEMA public to Kai;
```

```
GRANT UPDATE ON ALL TABLES IN SCHEMA public to Kai;
```


Implementation Notes:

When Implementing affiliations, I had to add Vegeta multiple times. Throughout the series he is a villain, a good guy, and also mind controlled. I wanted to add when exactly he was these roles, and also add when he came back to the good side. However it was consolidating him being in the Z fighters as one instant, so I left it alone.

There are also multiple implementations of characters in the Fought In table. The main cast are almost always in every battle.

I tried to keep the cast under 30. The Dragon Ball Universe is vast, and even just Dragon Ball Z is full of characters.

Known Problems/ Future Enhancement

Throughout Dragon Ball Z there are numerous deaths, a majority of which are in the same time frame. As such, many deaths are clumped together into one year, even though a majority of these battles span many episodes.

In Dragon Ball Z, there are also many resurrections. A huge part of the show, the dragon balls, can bring people back to life. In a future implementation, a dragon ball table will be added, and be more responsive with the people table, and resurrection stats will be more accurate.

There are a few characters who come from an alternate timeline, Cell being one of them. As such, he is born after he dies technically. I also left out Future Trunks, because I was having issues with him and current timeline Trunks getting mixed up.