

Dragon Ball Z Dokkan Battle

Relational Database



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12/10/20



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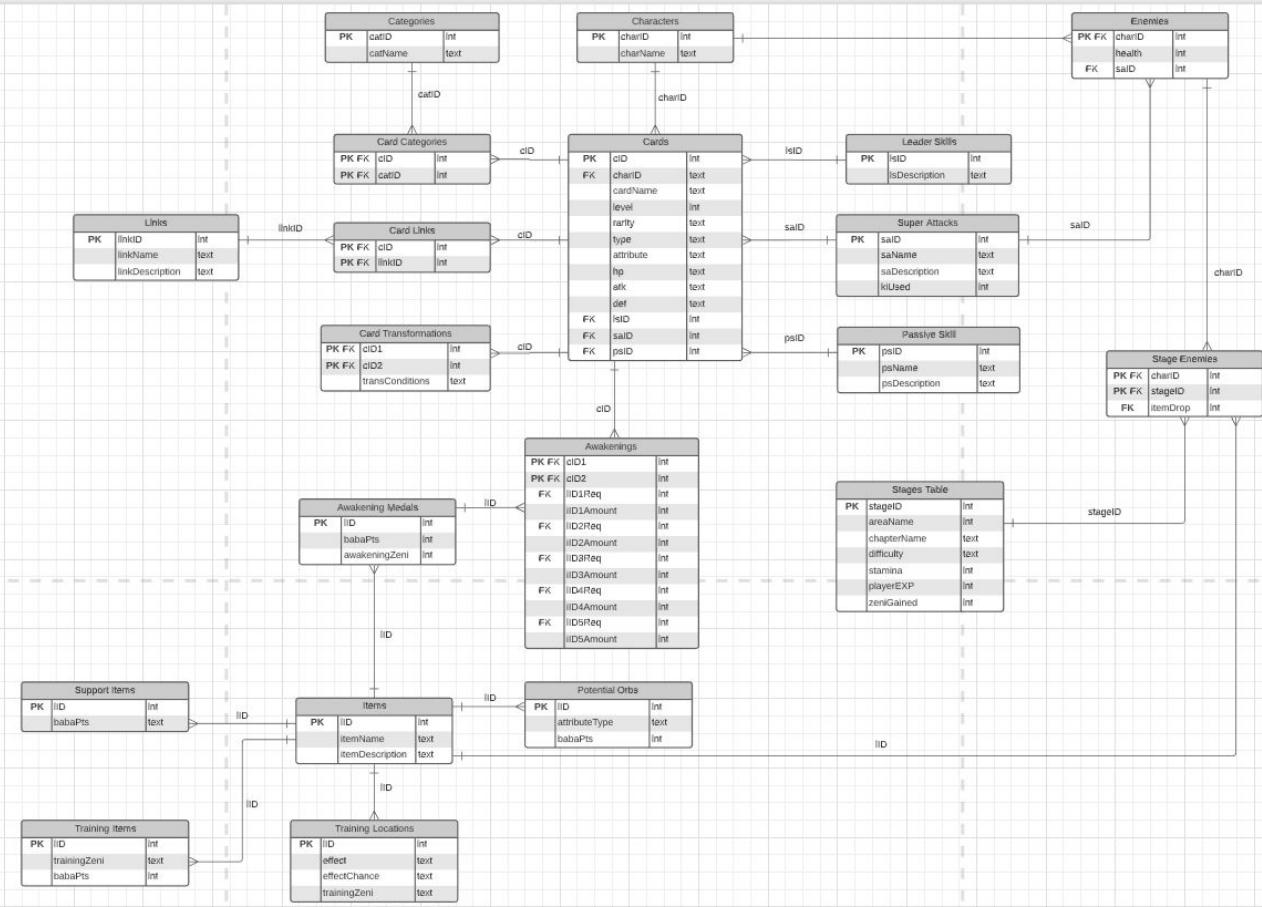
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Executive Summary

Dragon Ball Z Dokkan Battle is a casual RPG video game you can play on your mobile device. While the gameplay itself is very easy to pickup, the huge amount of different cards, abilities, and attacks can understandably overwhelm new players. This database aims to support these players by laying out all of the data and information any player of the game should be aware of.

This database consists of all of the create statements needed to support the current elements within the game, as some sample data inserted to display examples of how the tables can be used. There are also views, reports, stored procedures, and triggers to explain the database in further detail and provide in depth examples. This database can only be fully modified by the ADMIN, while the player can only modify specific tables.

E/R Diagram



DBZCharacters Table

Consists of all of the Dragon Ball characters that are present in the game.

```
CREATE TABLE DBZCharacters (
    charID      int not null,
    charName    text,
    primary key(charID)
);
```

Functional Dependencies:
 $\text{charID} \rightarrow \text{charName}$

	charid [PK] integer	charname
1	2112	Alan Labouseur
2	90125	Super Saiyan Alan Labouseur
3	1	Goku
4	2	Goku (Kaioken)
5	3	Super Saiyan Goku
6	4	Super Saiyan 2 Goku
7	5	Super Saiyan 3 Goku
8	6	Super Saiyan 4 Goku
9	7	Super Saiyan God Goku
10	8	Super Saiyan God Super Saiyan Goku
11	9	Super Saiyan God Super Saiyan Goku (Kaioken)
12	10	Goku (Ultra Instinct -Sign)
13	11	Goku (Ultra Instinct)
14	12	Vegeta

Categories Table

The playable cards in the game are separated by categories. This table consists of these categories.

```
CREATE TABLE Categories (
```

```
    catID          int not null,  
    catName        text,  
primary key(catID)  
);
```

Functional Dependencies:
 $\text{charID} \rightarrow \text{charName}$

	catid [PK] integer	catname text
1		1 Pure Saiyans
2		2 Hybrid Saiyans
3		3 Super Saiyan
4		4 Super Saiyan 2
5		5 Super Saiyan 3
6		6 Realm of Gods
7		7 Fusion
8		8 Potara
9		9 Professors
10		10 Transformation Boost

Links Table

The playable cards in the game all have links that, when brought together with a card that has the same link, will give a boost in power. This table consists of these links.

```
CREATE TABLE Links (
```

linkID	int not null,
linkName	text,
linkDescription	text,
primary key(linkID)	

```
);
```

Functional Dependencies:

$\text{linkID} \rightarrow \text{linkName}, \text{linkDescription}$

	linkid [PK] integer	linkname text	linkdescription text
1	1	Golden Warrior	All enemies' DEF -5% and Ki +1
2	2	Saiyan Warrior Race	ATK +5%
3	3	Super Saiyan	ATK +10%
4	4	Kamehameha	ATK +5% when performing a Super Attack
5	5	Blazing Battle	Disables enemy's Rampage, and ATK +15%
6	6	Shattering the Limit	Ki +2
7	7	The First Awakened	ATK +25%
8	8	Brainiacs	ATK & DEF +10%
9	9	Royal Lineage	Ki +1
10	10	Fierce Battle	ATK +15%
11	11	Prodigies	ATK +10%
12	12	Prepared for Battle	Ki +2

LeaderSkills Table

Leader Skills are skills that become active when they are the leader of a team. This table consists of these leader skills.

```
CREATE TABLE LeaderSkills (
    lsID          int not null,
    lsDescription text,
    primary key(lsID)
);
```

Functional Dependencies:
 $lsID \rightarrow lsDescription$

	lsid [PK] integer	lsdescription text
1	2112	All Types HP, ATK, and DEF +2112%
2	1	AGL, INT & PHY Type ATK +30%
3	2	TEQ, INT and STR Type ATK +30%
4	3	TEQ and STR Type Ki +2
5	4	ATK +25% when HP is 30% or below
6	5	ATK +15% for all Types
7	6	ATK +20% when HP is 80% or below
8	7	"Kamehameha" Category Ki +3, HP +130% and ATK & DEF +170%; or Super AGL Type Ki +3 and HP, ATK & DEF +120%
9	8	"Kamehameha" Category Ki +2, HP +110% and ATK & DEF +150%; or Super AGL Type Ki +2 and HP, ATK & DEF +110%
10	9	"Kamehameha" Category Ki +2, HP +100% and ATK & DEF +130%; or Super AGL Type Ki +2 and HP, ATK & DEF +100%
11	10	AGL, INT & PHY Types ATK & DEF +30%
12	11	TEQ, INT and STR Type ATK +30%

SuperAttacks Table

Super Attacks are powerful attacks performed when the correct amount of Ki is gained. This table consists of these Super Attacks.

CREATE TABLE SuperAttacks (

saID	int not null,
saName	text,
saDescription	text,
kiUsed	int,
primary key(saID)	
);	

Functional Dependencies:

$\text{saID} \rightarrow \text{saName}, \text{saDescription}, \text{kiUsed}$

	saID [PK] integer	saName text	sadescription text	kiused integer
1	1	Kamehameha	Causes extreme damage to enemy	12
2	2	Instant Transmission Kamehameha	Extreme damage, rare chance to stun the enemy	12
3	3	Big Bang Attack	Causes extreme damage to enemy	12
4	4	Final Flash	Causes extreme damage to enemy	12
5	5	Kamehameha	Raises DEF and causes immense damage to enemy	12
6	6	Chou Maretugeki	Raises DEF and causes mega-colossal damage to enemy	18
7	7	Raging Masenko	Raises DEF and causes colossal damage to enemy	12
8	8	Destructo Disk	Causes huge damage to enemy and lowers DEF	12
9	9	Kamehameha	Causes huge damage to enemy	12
10	10	Acid	Causes huge damage to enemy	12
11	11	Galick Gun	Causes huge damage to enemy	12
12	12	3NF Attack	Causes colossal damage to enemy	12

PassiveSkills Table

Passive Skills are skills that are passively activated when used in battle. This table consists of these Passive Skills.

```
CREATE TABLE PassiveSkills (
    psID          int not null,
    psName        text,
    psDescription text,
    primary key(psID)
);
```

Functional Dependencies:
 $psID \rightarrow psName, psDescription$

	psid [PK] integer	psname text	psdescription text
1	2112	3NF	Each table's non-key attributes rely on the key of the table and nothing but the key
2	1	Berserker's Rage	Ki +5 when HP is 30% or below
3	2	Anger Management	Ki +7 when HP is 50% or below
4	3	Saiyan's Pride	Ki +2 and ATK +2000 when HP is 30% or below
5	4	Conflicted Heart	Ki +3 and ATK +2500 when HP is 80% or below
6	5	Latent Power	ATK +2500 when performing a Super Attack
7	6	Prince's Pride	ATK +40% when HP is 30% or below
8	7	Overwhelming Power	ATK +1500 at start of turn
9	8	Moment of Truth	All allies' DEF +50% when HP is 30% or below
10	9	Start of Battle	ATK & DEF +70%; Ki +1 plus an additional ATK & DEF +10% at start of each turn (Ki up to +2 and ATK & DEF up to +40%)
11	10	Liberating Power	ATK & DEF +80%; Ki +1 plus an additional ATK & DEF +10% at start of each turn (Ki up to +3 and ATK & DEF up to +50%)
12	11	Bloating Anger	ATK & DEF +100%; Ki +1 plus an additional ATK & DEF +10% at start of each turn (Ki up to +5 and ATK & DEF up to +70%)

Cards Table

These are the obtainable and playable cards of the game. This table consists of these cards.

```
CREATE TABLE Cards (
    cID          int not null,
    charID       int not null references DBZCharacters(charID),
    cardName     text,
    level        int,
    cardType     text,
    rarity       text,
    attributeType text,
    hp           int,
    atk          int,
    def          int,
    lsID         int not null references LeaderSkills(lsID),
    said          int not null references SuperAttacks(saidID),
    psID         int not null references PassiveSkills(psID),
    primary key(cID)
);
```

	cid [Pk] integer	charid integer	cardname text	level integer	cardtype text	rarity text	attributetype text	hp integer	atk integer	def integer	lsid integer	said integer	psid integer
1	2112	2112	Database Designer	100	Super	UR	INT	2112	2112	2112	2112	12	2112
2	2113	2112	Database Designer	120	Super	UR	INT	2113	2113	2113	2112	12	2112
3	90125	90125	Database Designer Awakened	120	Super	UR	INT	90125	90125	90125	2112	12	2112
4	1	3	Supreme Warrior Awakened	100	Super	UR	AGL	8282	7136	3857	1	1	1
5	2	3	Leaping Ever Higher	120	Super	UR	AGL	8588	7460	4131	10	2	2
6	3	14	Pride Regained	100	Extreme	UR	TEQ	7920	6700	4325	2	3	3
7	4	14	Reclaim the Summit	120	Extreme	UR	TEQ	8423	7031	4750	11	4	4
8	5	1	The Saiyan Among Us	80	Super	SSR	STR	6696	6192	3361	3	9	5
9	6	12	Genius of War	80	Super	SSR	TEQ	6457	5637	4106	4	11	6
10	7	31	Resolution in Battle	100	Super	UR	AGL	8279	8956	3327	9	5	9
11	8	31	The Warrior Who Supassed Goku	120	Super	UR	AGL	9781	10045	3866	8	5	10
12	9	31	Awakened True Power	150	Super	LR	AGL	18813	16890	7106	7	6	11

Functional Dependencies:

cID → charID, cardName, level,
cardType, rarity, attributeType, hp, atk, def, lsID, saidID, psID

CardCategories Table

This Table connects the Cards and Categories tables to display a many to many relationship

```
CREATE TABLE CardCategories (
    cID          int not null references Cards(cID),
    catID        int not null references Categories(catID),
    primary key(cID, catID)
);
```

Functional Dependencies:
cID, catID

	cid [PK] integer	catid [PK] integer
1	2112	9
2	2113	9
3	90125	9
4	90125	3
5	1	1
6	1	3
7	2	1
8	2	3
9	3	1
10	3	3
11	4	1
12	4	3

CardLinks Table

This Table connects the Cards and Links tables to display a many to many relationship

```
CREATE TABLE CardLinks (
    cID          int not null references Cards(cID),
    linkID       int not null references Links(linkID),
    primary key(cID, linkID)
);
```

Functional Dependencies:
cID, linkID

	cid [PK] integer	linkid [PK] integer
1	2112	8
2	2112	12
3	2113	8
4	2113	12
5	2113	10
6	90125	8
7	90125	12
8	90125	10
9	90125	1
10	90125	3
11	1	1
12	1	2

CardTransformations Table

Some cards in the game are capable of transforming during the fight.
This table consists of these transformations.

```
CREATE TABLE CardTransformations (
    cID1 int not null references Cards(cID) (CHECK cID1 <> cID2),
    cID2 int not null references Cards(cID) CHECK (cID2 <> cID1),
    transConditions text,
    primary key(cID1, cID2)
);
```

Functional Dependencies:
cID1, cID2

	cid1 [PK] integer	cid2 [PK] integer	transconditions text	
1	2113	90125	Can be activated when HP is below 50%	
2	9	10	Can be activated when HP is 58% or less with "Android #16" on the team, or when HP is 58% or less with an existing "Androids" Cat...	

Stages Table

This table consists of the available playable stages in the game.

```
CREATE TABLE Stages (
    stageID          int not null,
    areaName         text,
    chapterName      text,
    difficulty       text,
    stamina          int,
    playerEXP        int,
    zeniGained       int,
    primary key(stageID)
);
```

Functional Dependencies:

$\text{stageID} \rightarrow \text{areaName}, \text{chapterName}, \text{difficulty}, \text{stamina}, \text{playerEXP}, \text{zeniGained}$

	stageid [PK] integer	areaname text	chaptername text	difficulty text	stamina integer	playerexp integer	zenigained integer
1	1	A Gloomy Parallel World	After The Tournament	Normal	4	60	945
2	2	A Gloomy Parallel World	Pursuing Mercenary Tao	Hard	8	2181	2978
3	3	A Gloomy Parallel World	Unrivaled Assassin	Z-Hard	11	11202	8049
4	4	Transcendent Awakening Surpassing the Strongest	Let's Go, Gohan!	Super 2	25	20000	35000
5	5	The One Beyond God Descends! Ultra Instinct	Kaboom! Ultra Instinct	Super 2	25	20000	35000
6	6	Fighting Legend: Goku	Fighting Legend: Goku	Super 3	0	0	0
7	7	Turtle School Training!	Turtle School Training!	Normal	10	1500	1500
8	8	Hercule's World Tournament	Hercule's World Tournament	Normal	10	100	5000
9	27	Taxing Endeavor	Resumption	Super	23	81600	44000
10	28	Taxing Endeavor	Training with Piccolo	Super	23	82200	44000
11	29	Taxing Endeavor	Training and Experience	Super	23	82800	44000
12	9	Pan's Secret Adventure	Pan's Secret Adventure	Z-Hard	80	200000	7777

Items Table

This table consists of the large amount of different items in the game.

```
CREATE TABLE Items (
    iID          int not null,
    itemName     text,
    itemDescription text,
    primary key(iID)
);
```

Functional Dependencies:

iID → itemName, itemDescription

	iid [PK] integer	itemname text	itemdescription text
1	1	Senzu Bean	Recover all HP and remove all allies' status effects
2	2	Dende	Recover all HP and remove all allies' status effects
3	3	Ghost Usher	Delay all opponent attacks for 1 turn
4	4	Android #8	Recover 70% HP, and all allies' DEF +50% for 2 turns
5	5	Princess Snake	Recover 55% HP, damage received reduced by 30% for 1 turn
6	6	Icarus	Damage received reduced by 35% for 2 turns
7	7	Z-Sword [PHY]	Use in training to gain 100000 EXP or more
8	8	Z-Sword [STR]	Use in training to gain 100000 EXP or more
9	9	Z-Sword [INT]	Use in training to gain 100000 EXP or more
10	10	Z-Sword [TEQ]	Use in training to gain 100000 EXP or more
11	11	Z-Sword [AGL]	Use in training to gain 100000 EXP or more
12	12	Platinum Turt...	Use in training to gain 300000 EXP or more

SupportItems Table

This table shows specifically the subtype of Items, Support Items. Support Items are used in battle to help in the fight.

```
CREATE TABLE SupportItems (
    iID                      int not null references Items(iID),
    babaPoints                int,
    primary key(iID)
);
```

Functional Dependencies:
 $iID \rightarrow babaPoints$

	iid [PK] integer	babapoints integer
1	1	5
2	2	5
3	3	5
4	4	5
5	5	5
6	6	2

TrainingItems Table

This table shows specifically the subtype of Items, Training Items. Training Items are used when training cards to become stronger.

```
CREATE TABLE TrainingItems (
    iID          int not null references Items(iID),
    babaPoints   int,
    trainingZeni int,
    primary key(iID)
);
```

Functional Dependencies:

$iID \rightarrow babaPoints, trainingZeni$

	iID [PK] integer	babaPoints integer	trainingZeni integer	
1	7	20	5000	
2	8	20	5000	
3	9	20	5000	
4	10	20	5000	
5	11	20	5000	
6	12	30	10000	
7	13	30	10000	
8	14	30	10000	
9	15	30	10000	
10	16	30	10000	

TrainingLocations Table

This table shows specifically the subtype of Items, Training Locations. Training Locations are used when training cards to become stronger.

```
CREATE TABLE TrainingLocations (
    iID          int not null references Items(iID),
    effect       text,
    effectChance text,
    trainingZeni int,
    primary key(iID)
);
```

Functional Dependencies:
 $iID \rightarrow effect, effectChance, trainingZeni$

	iid [PK] integer	effect text	effectchance text	trainingzeni integer
1	17	x2.0	3.2%	15000
2	18	[null]	[null]	50000
3	19	[null]	[null]	70000

AwakeningMedals Table

This table shows specifically the subtype of Items, Awakening Medals. Awakening Medals are used to awaken specified cards.

```
CREATE TABLE AwakeningMedals (
    iID                      int not null references Items(iID),
    babaPoints                int,
    awakeningZeni              int,
primary key(iID)
);
```

Functional Dependencies:

iID → babaPoints, awakeningZeni

	iid [PK] integer	babaPoints integer	awakeningzeni integer
1	20	12	20000
2	21	12	20000
3	22	12	20000
4	23	12	20000
5	24	2112	2112

PotentialOrbs Table

This table shows specifically the subtype of Items, Potential Orbs. Potential Orbs are used to increase power of a specified card

```
CREATE TABLE PotentialOrbs (
    iID          int not null references Items(iID),
    attributeType text,
    babaPoints   int,
primary key(iID)
);
```

Functional Dependencies:
 $iID \rightarrow attributeType, babaPoints$

	iID [PK] integer	attributeType text	babaPoints integer
1	25	PHY	1
2	26	STR	1
3	27	INT	1
4	28	TEQ	1
5	29	AGL	1
6	30	PHY	2
7	31	STR	2
8	32	INT	2
9	33	TEQ	2
10	34	AGL	2
11	35	PHY	20
12	36	STR	20

Awakenings Table

Awakening is a way to make your cards even stronger by turning them into an even stronger card.

```
CREATE TABLE Awakenings (
    cID1
    int not null references Cards(cID) CHECK (cID1 <> cID2),
    cID2
    int not null references Cards(cID) CHECL (cID2 <> cID1),
    iID1Req
    int not null references AwakeningMedals(iID),
    iID1Amount
    int not null,
    iID2Req
    int references AwakeningMedals(iID),
    iID2Amount
    int,
    iID3Req
    int references AwakeningMedals(iID),
    iID3Amount
    int,
    iID4Req
    int references AwakeningMedals(iID),
    iID4Amount
    int,
    iID5Req
    int references AwakeningMedals(iID),
    iID5Amount
    int,
    primary key(cID1, cID2)
);
```

```
int not null references Cards(cID) CHECK (cID1 <> cID2),
int not null references Cards(cID) CHECL (cID2 <> cID1),
int not null references AwakeningMedals(iID),
int not null,
int references AwakeningMedals(iID),
int,
int references AwakeningMedals(iID),
int,
int references AwakeningMedals(iID),
int,
int references AwakeningMedals(iID),
int,
```

cID1 [PK] integer	cID2 [PK] integer	iID1Req integer	iID1Amount integer	iID2Req integer	iID2Amount integer	iID3Req integer	iID3Amount integer	iID4Req integer	iID4Amount integer	iID5Req integer	iID5Amount integer
1	1	2	20	7	[null]	[null]	[null]	[null]	[null]	[null]	[null]
2	3	4	21	7	[null]	[null]	[null]	[null]	[null]	[null]	[null]
3	2112	2113	24	7	[null]	[null]	[null]	[null]	[null]	[null]	[null]
4	7	8	22	35	[null]	[null]	[null]	[null]	[null]	[null]	[null]
5	8	9	22	35	23	35	[null]	[null]	[null]	[null]	[null]

Functional Dependencies:

cID1, cID2 → iID1Req, iID1Amount, iID2Req, iID2Amount,
iID3Req, iID3Amount, iID4Req, iID4Amount, iID5Req, iID5Amount

Enemies Table

This table consists of the enemies in the game.

```
CREATE TABLE Enemies (
    charID      int not null references DBZCharacters(charID),
    health      int,
    said        int not null references SuperAttacks(said),
    primary key(charID)
);
```

Functional Dependencies:
 $\text{charID} \rightarrow \text{health, said}$

	charid [PK] integer	health integer	said integer
1	47	1000	10
2	1	1000000	1
3	3	1500000	1
4	4	2000000	1
5	5	2000000	5
6	7	2000000	5
7	8	2000000	5
8	10	2000000	5
9	11	3000000	5

StageEnemies Table

This table connects Stages and Enemies to show a many to many relationship.

```
CREATE TABLE StageEnemies (
    charID      int not null references Enemies(charID),
    stageID     int not null references Stages(stageID),
    itemDrop    int references Items(iID),
    primary key(charID, stageID)
);
```

Functional Dependencies:
 $\text{charID}, \text{stageID} \rightarrow \text{itemDrop}$

	charid [PK] integer	stageid [PK] integer	itemdrop integer
1		1	6
2		3	6
3		4	6
4		5	6
5		7	6
6		8	6
7		10	6
8		11	6
9		1	5
10		10	5
11		47	1
12		47	2
			1

Cards And Enemies View

This view displays all of the characters that are both playable cards and enemies.

```
CREATE VIEW CardsAndEnemies AS
    SELECT distinct d.*
        FROM DBZCharacters d inner join Cards c on d.charID = c.charID
                                inner join DBZCharacters db on c.charID = db.charID
                                inner join Enemies e on db.charID = e.charID;
```

	charid [PK] integer	charname text
1		1 Goku
2		3 Super Saiyan Goku

Super Saiyan Cards View

This view displays the card name and character name all of the available cards present in the “Super Saiyan” category.

```
CREATE VIEW SuperSaiyanCards AS
```

```
    SELECT c.cID, d.charName, c.cardName  
    FROM DBZCharacters d inner join Cards c on d.charID = c.charID  
        inner join CardCategories cc on c.cID = cc.cID  
        inner join Categories ca on cc.catID = ca.catID  
            where catName = 'Super Saiyan';
```

cid integer	charname text	cardname text
1	90125	Super Saiyan Alan Labouseur
2	1	Supreme Warrior Awakened
3	2	Leaping Ever Higher
4	3	Pride Regained
5	4	Reclaim the Summit
6	7	Resolution in Battle
7	8	The Warrior Who Surpassed Goku
8	9	Awakened True Power
9	10	Awakened True Power

Transforming Cards View

This view displays cards that are capable of transforming as well as all of the information for the card.

CREATE VIEW TransformingCards AS

```
SELECT c.cID, d.charName, c.cardName, c.level, c.cardType, c.rarity, c.attributeType,  
       c.hp, c.atk, c.def, ls.lsDescription, sa.saName, sa.saDescription, ps.psName, ps.psDescription  
  FROM DBZCharacters d inner join Cards c on d.charID = c.charID  
        inner join LeaderSkills ls on c.lsID = ls.lsID  
        inner join SuperAttacks sa on c.saID = sa.saID  
        inner join PassiveSkills ps on c.psID = ps.psID  
        inner join CardTransformations ct on c.cID = ct.cID1;
```

	cid integer	charname text	cardname text	level integer	cardtype text	rarity text	attribute text	hp integer	atk integer	def integer	lsdescription text	saname text	sadescription text	psname text	psdescription text
1	2113	Alan Labousieur	Database Des... igner	120	Super	UR	INT	2113	2113	2113	All Types HP, ATK,...	3NF Attack	Causes colossal d...	3NF	Each table's non-k...
2	9	Super Saiyan ...	Awakened Tru...	150	Super	LR	AGL	18813	16890	7106	"Kamehameha" C...	Chou Maret...	Raises DEF and ca...	Bloating An...	ATK & DEF +100%; ...

The Enemies and Their Stages Report

This query shows all of the enemies' names and the area and chapter they appear in.

```
select s.areaName, s.chapterName, d.charName  
from Stages s inner join StageEnemies se on s.stageID = se.stageID  
    inner join Enemies e on se.charID = e.charID  
    inner join DBZCharacters d on e.charID = d.charID;
```

	areaname text	chaptername text	charname text	
1	Fighting Legend: Goku	Fighting Legend: Goku	Goku	
2	Fighting Legend: Goku	Fighting Legend: Goku	Super Saiyan Goku	
3	Fighting Legend: Goku	Fighting Legend: Goku	Super Saiyan 2 Goku	
4	Fighting Legend: Goku	Fighting Legend: Goku	Super Saiyan 3 Goku	
5	Fighting Legend: Goku	Fighting Legend: Goku	Super Saiyan God Goku	
6	Fighting Legend: Goku	Fighting Legend: Goku	Super Saiyan God Super Saiyan Goku	
7	Fighting Legend: Goku	Fighting Legend: Goku	Goku (Ultra Instinct -Sign-)	
8	Fighting Legend: Goku	Fighting Legend: Goku	Goku (Ultra Instinct)	
9	The One Beyond God Des...	Kaboom! Ultra Instinct	Goku	
10	The One Beyond God Des...	Kaboom! Ultra Instinct	Goku (Ultra Instinct -Sign-)	

Cards That Awaken and Keep the Same Super Attack Name After Awakening Report

This report shows all cards that keep the same Super Attack Name even after awakening.

```
select c.cID, ca.cID  
from Cards c inner join SuperAttacks sa on c.saID = sa.saID  
    inner join Awakenings a on c.cID = a.cID1  
    inner join Cards ca on a.cID2 = ca.cID  
    inner join SuperAttacks sua on ca.saID = sua.saID  
        where sa.saName = sua.saName;
```

	cid [PK] integer	cid integer
1	2112	2113
2	7	8

Get Stronger Cards Stored Procedure

Given the ATK integer, this stored procedure will return the card that has higher a ATK stat.

```
create or replace function get_stronger_cards(int, REFCURSOR)
returns REFCURSOR as
$$
declare
amount_atk int := $1;
results REFCURSOR := $2;
begin
open results for
select cID, atk
from Cards
where atk > amount_atk;
return results;
end;
$$
language plpgsql;
```

These cards have an ATK stat
higher than 10,000

	cid [PK] integer	atk integer
1	90125	90125
2	8	10045
3	9	16890
4	10	16890

Find Card Based on Category Stored Procedure

Given the Category Name this stored procedure will find all cards in that category.

```
create or replace function find_category_cards(text, REFCURSOR)
returns REFCURSOR as
$$
declare
category text      := $1;
results REFCURSOR := $2;
begin
open results for
select c.cID, d.charName, c.cardName
from DBZCharacters d inner join Cards c on d.charID = c.charID
inner join CardCategories cc on c.cID = cc.cID
inner join Categories ca on cc.catID = ca.catID
where catName = category;
return results;
end;
$$
language plpgsql;
```

These are Cards on the “Pure Saiyans” Category

	cid integer	charname text	cardname text
1		1 Super Saiyan Goku	Supreme Warrior Awakened
2		2 Super Saiyan Goku	Leaping Ever Higher
3		3 Super Saiyan Vegeta	Pride Regained
4		4 Super Saiyan Vegeta	Reclaim the Summit
5		5 Goku	The Saiyan Among Us
6		6 Vegeta	Genius of War

No Cards With HP, ATK, or DEF Below 1

This trigger will prevent the inserting of new cards with HP, ATK, and DEF below 1. This is needed because there are no cards in the game that have any stats that are 0.

```
CREATE OR REPLACE FUNCTION newCards()
RETURNS TRIGGER AS
$$
BEGIN
    IF (NEW.hp < 1) OR (NEW.atk < 1) OR (NEW.def < 1) THEN
        DELETE FROM Cards WHERE cID = NEW.cID;
    END IF;
    RETURN NEW;
END;
$$
language plpgsql;

CREATE TRIGGER newCard
AFTER INSERT ON Cards
FOR EACH ROW
EXECUTE PROCEDURE newCards();
```

```
INSERT INTO Cards (cID, charID, cardName, level, rarity,
cardType, attributeType, hp, atk, def, lsID, saID, psID)
VALUES
(099, 2112, 'Failed After Trigger', 50, 'LR', 'Extreme', 'PHY', 0,
100, 100, 001, 001, 001);
```

cID [PK] integer	charID integer	cardName text	level integer	cardType text	rarity text	attributeType text	hp integer	atk integer	def integer	lsID integer	saID integer	psID integer
5	2	3 Leaping Ever Higher	120	Super	UR	AGL	8588	7460	4131	10	2	2
6	3	14 Pride Regained	100	Extreme	UR	TEQ	7920	6700	4325	2	3	3
7	4	14 Reclaim the Summit	120	Extreme	UR	TEQ	8423	7031	4750	11	4	4
8	5	1 The Saiyan Among Us	80	Super	SSR	STR	6696	6192	3361	3	9	5
9	6	12 Genius of War	80	Super	SSR	TEQ	6457	5637	4106	4	11	6
10	7	31 Resolution in Battle	100	Super	UR	AGL	8279	8956	3327	9	5	9
11	8	31 The Warrior Who Surpassed Goku	120	Super	UR	AGL	9781	10045	3866	8	5	10
12	9	31 Awakened True Power	150	Super	LR	AGL	18813	16890	7106	7	6	11
13	10	32 Awakened True Power	150	Super	LR	AGL	18813	16890	7106	7	13	12

The trigger prevented this insert into Cards

No New Items That Sell For Less Than 0 Baba Points

This trigger will prevent from adding any new items that are eligible to sell for Baba Points if they sell for less than 0 Baba Points since this will make you lose Baba Points when selling.

```
CREATE OR REPLACE FUNCTION newItemBabaPts()
RETURNS TRIGGER AS
$$
BEGIN
    IF (NEW.babaPoints < 0) THEN
        DELETE FROM SupportItems WHERE iID = NEW.iID;
        DELETE FROM AwakeningMedals WHERE iID = NEW.iID;
        DELETE FROM TrainingItems WHERE iID = NEW.iID;
        DELETE FROM PotentialOrbs WHERE iID = NEW.iID;
    END IF;
    RETURN NEW;
END;
$$
```

```
language plpgsql;
```

```
CREATE TRIGGER newSupportItemBabaPts
AFTER INSERT ON SupportItems
FOR EACH ROW
EXECUTE PROCEDURE newItemBabaPts();
```

```
CREATE TRIGGER newAwakeningMedalBabaPts
AFTER INSERT ON AwakeningMedals
FOR EACH ROW
EXECUTE PROCEDURE newItemBabaPts();
```

```
CREATE TRIGGER newTrainingItemsBabaPts
AFTER INSERT ON TrainingItems
FOR EACH ROW
EXECUTE PROCEDURE newItemBabaPts();
```

```
CREATE TRIGGER newPotentialOrbBabaPts
AFTER INSERT ON PotentialOrbs
FOR EACH ROW
EXECUTE PROCEDURE newItemBabaPts();
```

No new item was added because BabaPoints were

iID	babaPoints
1	1
2	2
3	3
4	4
5	5
6	6

Roles

ADMIN Role: Grants the role ADMIN that allows access to view and modify all tables in the database.

```
CREATE ROLE ADMIN;  
GRANT ALL ON ALL TABLES IN SCHEMA PUBLIC TO ADMIN;
```

Player Role: Players are allowed to select from all tables in the database, but can only modify the Cards table and the Items table.

```
CREATE ROLE Player;  
REVOKE ALL ON ALL TABLES IN SCHEMA PUBLIC FROM Player;  
GRANT SELECT ON ALL TABLES IN SCHEMA PUBLIC TO Player;  
GRANT INSERT ON Cards, Items TO Player;
```



Implementation Notes

- It should be known that the field babaPoints refers to the amount of babaPoints gained when selling the item.
- It should be known that the field trainingZeni refers to the amount of zeni used to use the item.
- It should be known that the field awakeningZeni refers to the amount of zeni used to use the item.



Known Issues

- Currently, this database does not have a way to simulate battles within a stage because there is no damage calculation.
- Cards' stats do not show their maximum potential after using potential orbs
- Currently, this database does not show the new game mode, Dokkan Battlefield, which would need a completely new table.
- Currently, this database does not show the new game mode, Active Skills, which would need a completely new table.



Future Enhancements

- Because the game is still being updated constantly, the database most likely will need new tables for the new features within the game. In fact, towards the end of finishing this project, Dokkan Battle added a completely new feature that would need a table of its own.
- Adding a table for team customization.

