Database Design Project

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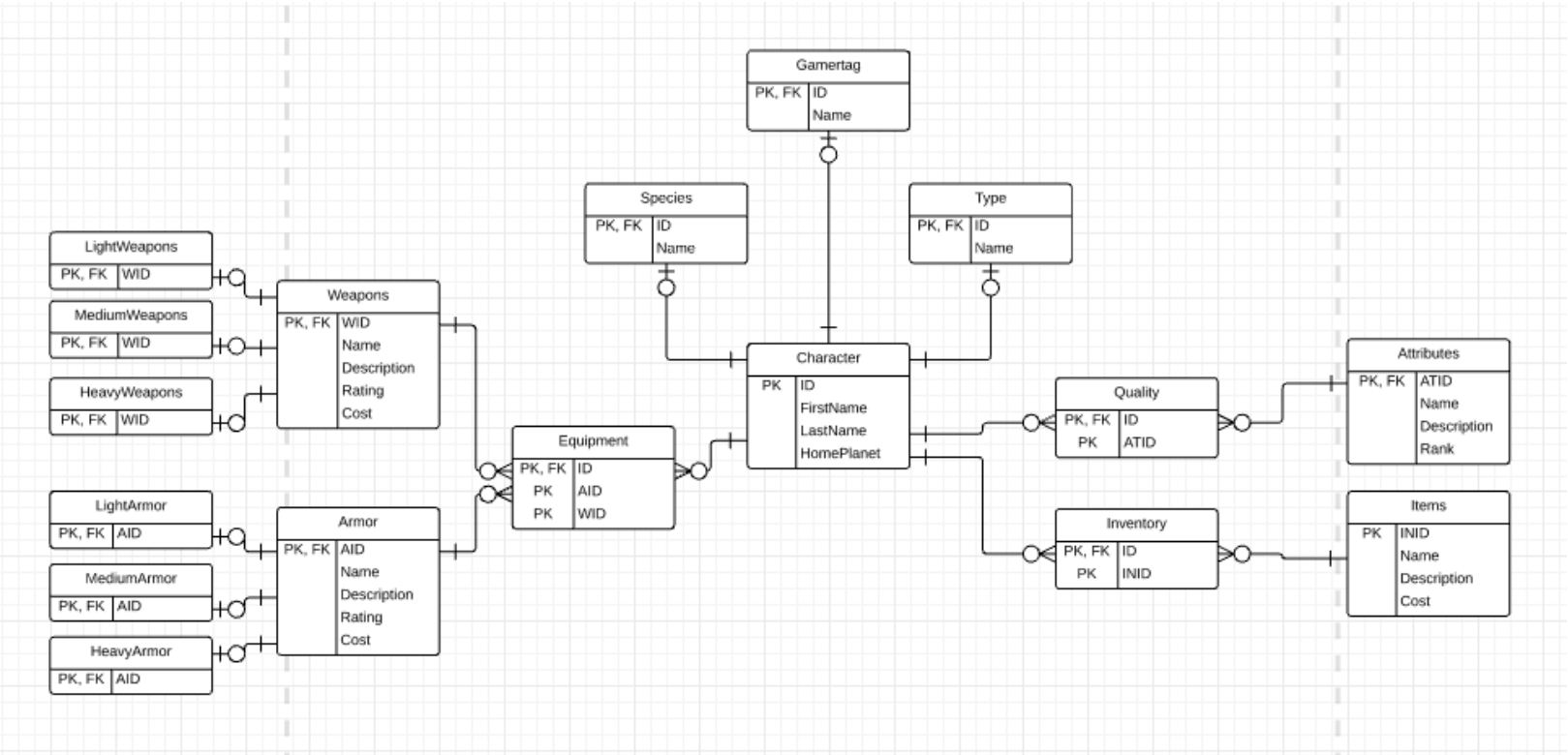
Executive Summary

This database design is intended for the relationships surrounding a Star Wars character based video game. This design will include all of the items, armor, and weapons that can be found in the game. The user is able to see what types of character that they can play, as well as what species they can be. This database also shows the relationships between the character and the items, armor, and weapons that they will find.

This design will go into detail about the relationships each table has in the database. It will also include future expectations and already known problems that exist with the design.

Entity Relationship Diagram



Tables

Character Table:

```
CREATE TABLE Character (
  ID      char(4) not null,
  FirstName TEXT,
  LastName TEXT,
  HomePlanet TEXT,
 primary key(ID)
);
```

This table lists all of the characters that have been created or will store any of the characters that will be created in the future. This will list their ID, name, and planet of origin.

Function Dependencies: ID → FirstName, LastName, HomePlanet

	id character(4)	firstname text	lastname text	homeplanet text
1	001	Aoife	Flanagan	Felucia
2	002	Mary	Vodola	Naboo
3	003	Danielle	Shine	Hoth
4	004	Ben	Galassi	Serenno
5	005	Patrick	Haggerty	Tatooine
6	006	Frankie	Biancardi	Dagobah
7	007	Harrison	Buzzi	Endor
8	008	Austin	Adamcheck	Geonosis
9	009	Patrick	Milano	Mustafar
10	010	Matthew	Rahtelli	Utapau

Species Table:

```
CREATE TABLE Species (
  ID      char(4) not null REFERENCES Character(ID),
  Name    TEXT,
 primary key(ID)
);
```

This table lists all of the species that a character can be in the video game. If any more species are created or available to be chosen, it will be listed in this table.

Functional Dependencies: ID → Name

	id character(4)	name text
1	001	Twilek
2	002	Gungan
3	003	Human
4	004	Human
5	005	Jawa
6	006	Yoda
7	007	Ewok
8	008	Geonosian
9	009	Mustafarian
10	010	Pauan

Type Table

```
CREATE TABLE Type (
  ID      char(4) not null REFERENCeS Character(ID),
  Name    TEXT,
 primary key(ID)
);
```

This table lists all of the types that the player can be during the game. This will affect in the future what types of items that they can wield, or developing different types of abilities.

Functional Dependencies: ID → Name

	id character(4)	name text
1	001	Jedi
2	002	Jedi
3	003	Scavenger
4	004	Mercenary
5	005	Scavenger
6	006	Jedi
7	007	Mercenary
8	008	Scavenger
9	009	Mercenary
10	010	Jedi

GamerTag Table

```
CREATE TABLE Gamertag (
  ID      char(4) not null REFERENCeS Character(ID),
  Name    TEXT,
 primary key(ID)
);
```

This table lists all of the gamertags of the players who have created characters in the game. This links the character directly with the players account name so users may be able to play together in the future.

Functional Dependencies: ID → Name

	id character(4)	name text
1	001	Dancergirl18
2	002	Ihatefashion13
3	003	SoftballShine
4	004	Theitalian015
5	005	Thegame017
6	006	XYZJesus
7	007	Hbuzzi48
8	008	Mexicanlover5
9	009	Pmilzforlife
10	010	Mattiesquared02

Weapons Table

```
CREATE TABLE Weapons (
  WID      char(4) not null,
  NAME     TEXT,
  Description TEXT,
  Rating   Char(8) NOT NULL,
  Cost     CHAR(8) NOT NULL,
 primary key(WID)
);
```

This table lists all of the weapons that are in the game. It gives a description of what each weapon is. It also shows the rating of the weapon which will affect the skill level of the player. It also determines the cost of the weapon that the player may chose to sell.

Functional Dependencies: WID → Name, Description, Rating, Cost

	wid character(4)	name text	description text	rating character(8)	cost character(8)
1	100	Sword	A bladed melee weapon	4	200
2	101	Vibro axe	A vibrating lethal ax	7	400
3	102	Blaster Pistol	Fires cohesive bursts of light-energy	5	300
4	103	Blaster Rifle	More powerful blaster pistol	8	450
5	104	Bowcaster	A laser crossbow	9	500
6	105	Lightsaber	A laser sword used by Jedi	10	600
7	106	Dagger	A small bladed melee weapon	1	50
8	107	Seismic Charge	Releases a devestaing sound	4	200
9	108	Thermal Detonator	Deadly explosive device	6	350
10	109	Electrostaff	Electrified pole-like melee weapon	7	400

<u>LightWeapons Table</u>

```
CREATE TABLE LightWeapons (
  WID     char(8) not NULL REFERENCES Weapons(WID),
 primary key(WID)
);
```

This table lists all of the weapons that are classified as “light”. In the future, some of the types of players or certain species might not able to wield anything but light weapons.

	wid character(8)
1	100
2	102
3	106
4	107
5	108

MediumWeapons Table

```
CREATE TABLE MediumWeapons (
  WID     char(8) not NULL REFERENCES Weapons(WID),
 primary key(WID)
);
```

This table lists all of the weapons that are classified as “medium”. In the future, a character might not be able to wield a medium type weapon.

	wid character(8)
1	101
2	103
3	105

HeavyWeapons Table

```
CREATE TABLE HeavyWeapons (
  WID     char(8) not NULL REFERENCES Weapons(WID),
 primary key(WID)
);
```

This table lists all of the weapons that are classified as “heavy”. In the future, some types or species will be able to wield this type of weapon rather other species or types may not.

	wid character(8)
1	104
2	109

Armor Table

```
CREATE TABLE Armor (
  AID       char(4) not null,
  NAME      TEXT,
  Description TEXT,
  Rating    Char(8) NOT NULL,
  Cost      CHAR(8) NOT NULL,
 primary key(AID)
);
```

This table lists all of the armor that are in the game. It gives a description of what the armor is. It also shows the rating of the armor and the affect it will have on the player's defense. It also determines the cost of the armor that the player may chose to sell.

Functional Dependencies: AID → Name, Description, Rating, Cost

	aid character(4)	name text	description text	rating character(8)	cost character(8)
1	200	Robe	Generic garments	1	100
2	201	Light Combat Suit	Lighter version of combat suit	2	200
3	202	Fiber Armor	Ancient body armor woven together	3	300
4	203	Jensaarai Armor	Specialized Jensaari armor	4	400
5	204	Sith Battle Suit	Remarkably flexible medium combat suit	5	500
6	205	Reinforced Battle Armor	Moded standard battle armor	6	600
7	206	Republic Mod Armor	Modular armor issued to the Republic	7	700
8	207	Powered Light Battle Armor	Power assisted armor	8	800
9	208	Durasteel Heavy Armor	Reduces wait but restricts movement	9	900
10	209	Mandalorian Battle Suit	Personal battlesuit of Mandalore	10	1000

LightArmor Table

```
CREATE TABLE LightArmor (
  AID     char(8) not NULL REFERENCES Armor(AID),
 primary key(AID)
);
```

This table lists all of the armor that is classified as "light armor". In the future, some types of characters may only be allowed to wear light armor.

	aid character(8)
1	200
2	201
3	202
4	203

MediumArmor Table

```
CREATE TABLE MediumArmor (
  AID     char(8) not NULL REFERENCES Armor(AID),
 primary key(AID)
);
```

This table lists all of the armor that is classified as “medium armor”. In the future, some types of characters may not be permitted or allowed to wear medium armor.

	aid character(8)
1	204
2	205
3	206
4	207

HeavyArmor Table

```
CREATE TABLE HeavyArmor (
  AID     char(8) not NULL REFERENCES Armor(AID),
 primary key(AID)
);
```

This table lists all of the armor that is classified as “heavy armor”. In the future, some types of characters may not be permitted or allowed to wear heavy armor.

	aid character(8)
1	208
2	209

Attributes Table

CREATE TABLE Attributes (
  ATID char(4) not null,
  NAME TEXT,
  Description TEXT,
  Rank Char(8) NOT NULL,
 primary key(ATID)
);

This table lists all of the attributes that apply to the character in the game. These attributes will affect the player's skill level. In the future, only certain types will be able to access certain attributes.

Functional Dependencies: ATID → Name, Description, Rank

	atid character(4)	name text	description text
1	300	Strength	How physically powerful you are
2	301	Dexterity	Controls movement speed
3	302	Endurance	How sturdy you are
4	303	Intelligence	How smart you are
5	304	Alertness	Openness to surroundings
6	305	Charisma	Controls social skills
7	306	Energy Resistance	Protects you from energy
8	307	Health	How many hitpoints you have
9	308	Chance	Percentage of good things happening

Items Table

```
CREATE TABLE Items (
  INID        char(4) not null,
  NAME        TEXT,
  Description TEXT,
  Cost        Char(8) NOT NULL,
 primary key(INID)
);
```

This table lists all of the items that can be found in the game. It shows what the item does, what the name of it is, and how much the player can sell it for if the user so chooses. In the future, it will hopefully be able to combine items to weapons or armor to improve them.

Functional Dependencies: INID → Name, Description, Cost

	inid character(4)	name text	description text	cost character(8)
1	500	Stimpack	Boosts health	50
2	501	Energy Shield	Protects from energy attacks for a short time	75
3	502	Lockpick	Used to pick chests or locked doors	5
4	503	GemPack	Chance getting a rare gem	250
5	504	Mine	Place down for protection against enemies	200
6	505	Antidote Kit	Removes any poison from your body	100
7	506	Computer Spike	Enables to easily hack into a computer	125

Equipment Table

```
CREATE TABLE Equipment (
  ID      char(4) not null REFERENCeS Character(ID),
  AID     char(8) not NULL REFERENCES Armor(AID),
  WID     char(8) not NULL REFERENCES Weapons(WID),
 primary key(ID, AID, WID)
);
```

This table shows the relationship between the weapons and armor tables to the character table. It shows which weapons and armor are available for the character to find and/or use.

	id character(4)	aid character(8)	wid character(8)
1	001	200	105
2	001	200	107
3	001	200	108
4	002	200	106
5	002	200	104
6	002	200	109
7	002	200	102
8	003	201	106
9	003	208	109
10	004	202	103
11	004	203	109
12	004	209	101
13	005	206	103
14	005	204	104
15	006	200	106
16	006	200	102
17	006	200	105
18	006	200	108
19	007	202	103
20	007	208	109
21	007	204	104
22	008	207	101
23	008	206	102
24	009	209	101
25	009	203	109
26	009	201	106
27	009	202	103
28	010	204	104
29	010	208	109
30	010	201	106

Quality Table

```
CREATE TABLE Quality (
  ID      char(4) not null REFERENCEs Character(ID),
  ATID    CHAR(4) NOT NULL REFERENCES Attributes(ATID),
 primary KEY(ID, ATID)
);
```

This table shows the relationship between the character table and the attributes table. This is because of the many to many relationship between each other.

	id character(4)	atid character(4)
1	001	300
2	001	305
3	001	304
4	001	308
5	002	306
6	002	303
7	002	301
8	003	305
9	003	308
10	004	301
11	004	302
12	004	300
13	004	303
14	005	307
15	005	302
16	005	308
17	006	300
18	006	301
19	006	305
20	006	307
21	007	308
22	007	305
23	008	302
24	008	300
25	008	308
26	009	304
27	009	301
28	009	303
29	009	306

Inventory Table

```
CREATE TABLE Inventory (
  ID      char(4) not null REFERENCEs Character(ID),
  INID    CHAR(4) NOT NULL REFERENCES Items(INID),
 primary KEY(ID, INID)
```

);

This table shows the relationship between the character table and the items table. This is because of the many to many relationship that they have.

	id character(4)	inid character(4)
1	001	503
2	001	506
3	001	504
4	002	502
5	002	506
6	003	501
7	003	504
8	003	505
9	004	500
10	004	503
11	005	506
12	005	503
13	005	504
14	005	501
15	006	505
16	006	506
17	006	502
18	007	501
19	007	502
20	007	503
21	007	506
22	008	502
23	008	504
24	009	500
25	009	501
26	009	504
27	010	506
28	010	503

Security

Administrator: The administrator would be allowed to change content within the database such as altering current content or adding new content.

User: A user would only be able to view the database. The user would not be given permissions to change or add new content.

Implementation Notes-Known Problems

The implementation went well but I definitely see a lot of room for improvement. The setup is pretty basic for a regular star wars video game, but there are a lot of possibilities to tackle. One problem to tackle is that each type of character can access all of the armor even if it doesn't make sense for them to be able to. I think for the design to be so general that there are not too many problems, but to add more details and more enhancements would cause more problems to occur.

Future Enhancements

This database could be improved by creating a way for attributes, armor level, and weapon level to increase the skill of the user. This way, the user would be allowed to level up the player and take on harder challenges in the game. It could also be improved by each item in the game having a standard cost and sell price but would change depending on the level of the user to make it hard to buy certain items.

The main update of the design would to only allow certain species to gain access to certain types of weapons and armor. For example, only a jedi should be able to wield a lightsaber or a mercenary to wear heavy armor.