

CIS 451/551 Final Project Fall 2021

name(s): Michael Gao

project title: Mass Effect: DataBase

Connection information

port number: 3602

hostname: ix.cs.uoregon.edu

guest account login: guest password: guest
(or no password)

database name: MassEffectDB

project URL: <https://ix.cs.uoregon.edu/~mgao2/MassEffectDB/MassEffect.html>

Github: <https://github.com/michael-c-gao/MassEffectDB>

2. Summary

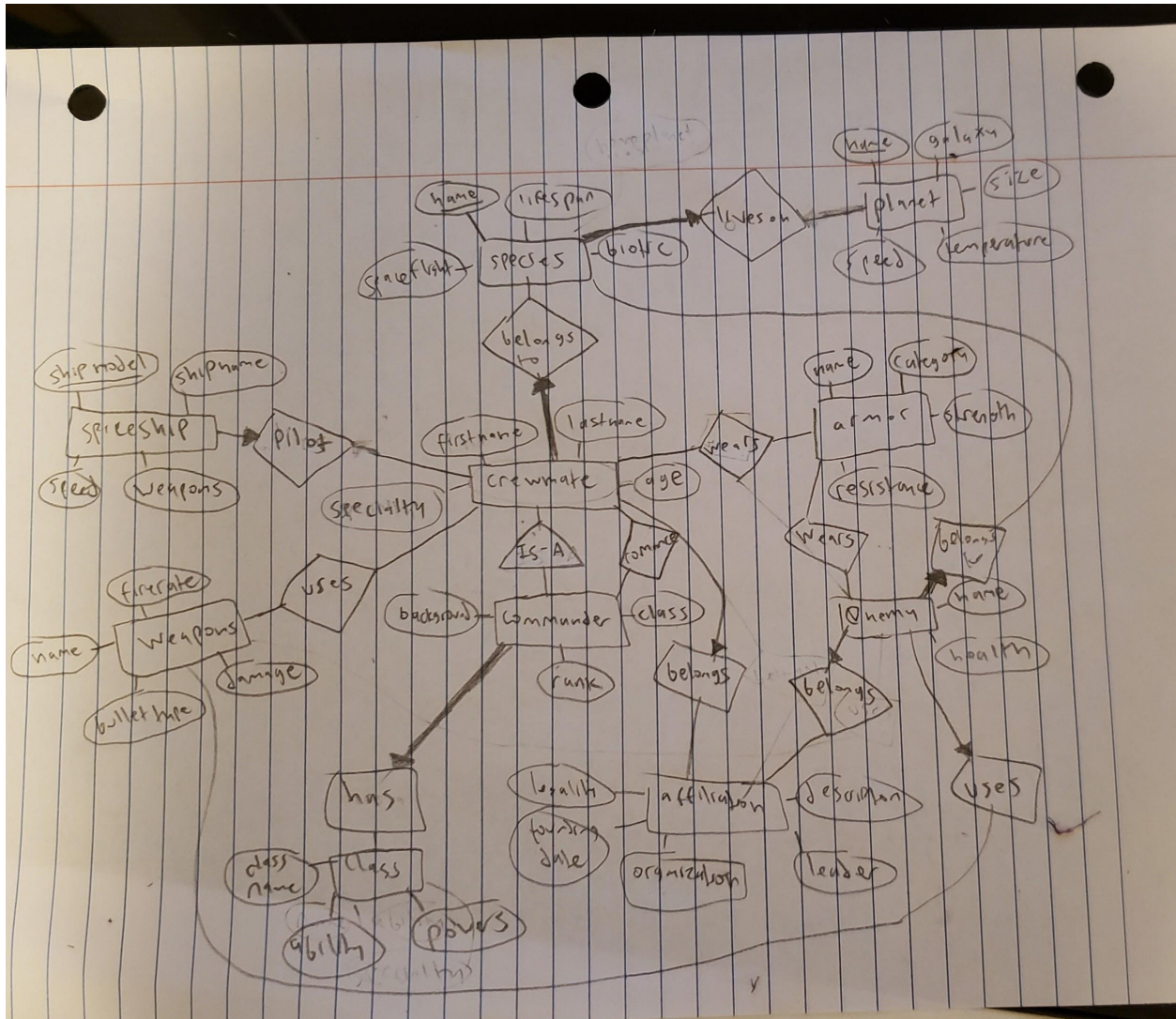
The Mass Effect franchise is a series of critically acclaimed video games globally renowned for its dynamic characters, interactive plot, and world-class writing. With an expansive universe of locales to be visited, weapons to be used, enemies to be conquered and much more, it is the perfect world to be modeled into a database.

My database will have 10 tables, which will be

1. Crewmate
2. Commander
3. Species
4. Planet
5. Spaceship
6. Armor
7. Weapon
8. Enemy
9. Class
10. Affiliation

The purpose of this database is to convey the complex relationships of Mass Effect into a table visualization, with recording such interactions as romances, combat encounters, spaceflight ability, planetary origin, and much more. I am planning on the utilization for this to be a web app where users can input specific values and return the specifics of the complex relationships in Mass Effect. For example, users can input a specific planet and the application will return which species originally lived on it, as well as a history of their species. Or, users can input a specific spaceship, and find out who is allowed to drive the spaceship. Users can look up specific keywords and the queries will return the codex of information regarding their selection.

3. Logical Design



4. Physical Design

My project has 10 tables:

1. Affiliation(PK: Organization, Leader, Methodology, Description, Location)

Organization stores the name of the Organization.

Leader stores the name of the organization leader.

Methodology stores the concept of the group (i.e. government, mercenary gang, etc.) .

Description stores the purpose of the organization.

Location stores the organization location.

2. Armor(ArmorName, ArmorEffect, BodyLocation, Cost, Description)

ArmorName stores the name of the armor.

ArmorEffect stores the buff given while wearing the armor.

BodyLocation stores where on the body the armor is worn.

Cost stores the cost of the armor piece.

Description describes what the armor does and is.

3. Class(CName, CStyle, PrimaryWeaponType, PrimaryAbility, Description)

CName stores the name of the Class.

CStyle describes the play style of the class.

PrimaryWeaponType is the main weapon available to the specific class.

PrimaryAbility is the primary ability the class can use.

Description describes the class and what it does.

4. Commander(CrewID, Rank, Gender, Background, Class, Wears, Uses)

CrewID stores the unique crew ID of the Commander.

Rank stores the highest rank achieved by the Commander.

Gender stores the Commander gender.

Background stores the history of the Commander.

Class describes the Class of the Commander.

Wears is the item of armor that the Commander wears.

Uses is the weapon that the Commander uses.

5. Crewmate(CrewID, CrewFname, CrewLname, CrewAge, Job, CrewSpecies, Pilots)

CrewID is the unique identifier of each crewmate.

CrewFname stores the first name of the crewmate.

CrewLname stores the last name of the crewmate.

CrewAge stores the age of the crewmate in years.

Job stores the job of the crewmate aboard the Normandy.

CrewSpecies stores the species of the crewmate.

Pilots stores the ShipID of the ship that the crewmate pilots.

6. Enemy(EnemyID, EnemyFName, EnemyLName, EnemyOrganization, EnemySpecies)

EnemyID stores the unique identifier of the enemy.

EnemyFName stores the 1st name of the enemy.

EnemyLName stores the last name of the enemy.

EnemyOrganization stores the group the enemy in question works for.

EnemySpecies stores the species of the enemy.

7. Planet(PlanetName, GalaxyLocation, Temp_celcius, DayLength_hours, Radius_km, OrbitalPeriod_earth_years, AtmosphericPressure_atm)

PlanetName stores the name of the Planet.

GalaxyLocation stores the name of the galaxy that the planet resides in.

Temp_celcius stores the temperature in Celcius of the planet.

DayLength_hours stores the amount of time it takes for the planet to do 1 full rotation in hours.

Radius_km stores the radius of the planet in kilometers.

OrbitalPeriod_earth_years stores the amount of time, in earth years, it takes for the planet to do 1 rotation around its sun.

AtmosphericPressure_atm stores the atmospheric pressure in atm of the planet.

8. SpaceShip(ShipID, ShipName, ShipType, Weapons, Capacity)

ShipID stores the unique identifier of the ship.

ShipName stores the name of the ship.

ShipType stores the classification of the ship (fighter, freighter, etc).

Weapons stores the available weaponry of the ship.

Capacity stores the amount of individuals that the ship can store.

9. Species(SpeciesName, Lifespan_years, FTLDDiscoveryYear, Specialty, OriginPlanet)

SpeciesName stores the name of the species.

Lifespan_years stores the length of the lifespan of the species in years.

FTLDDiscoveryYear stores the year that the species first discovered faster-than-light travel.

Specialty stores the trait that the species is the best at.

OriginPlanet stores the planet that the species is originally from.

10. Weapons(WeaponID, WeaponName, Manufacturer, Damage, AmmoCapacity, WeaponType)

WeaponID stores the unique identifier of each weapon.

WeaponName stores the name of the weapon.

Manufacturer stores the manufacturer of the weapon.

Damage stores the amount of damage a single bullet does to enemies.

Ammo capacity stores the total amount of bullets the weapon comes equipped with.

5. List of Applications

In my project, there are 5 applications:

1. Application 1: (In Mass Effect, weapon types are restricted based on the characters class, i.e., only specific characters can use specific guns. This application takes the last name of a Normandy Commander, and the query will return the character's useable weapons.) This will affect the Weapons, Commander, Crewmate, and Class tables.
2. Application 2: (Does home planet make any difference on flying ability aboard the Normandy? To find out, users will enter a planet name, and the query will return all capable pilots aboard the Normandy.). This will affect the Crewmate, Species, and SpaceShip tables.
3. Application 3: (In Mass Effect, you travel across the galaxy with a diverse crew consisting of dozens of different species. However, there are just as many species that seek to thwart your adventures. If the user enters a crewmate last name, this query will return all enemies of the same species as your desired crewmate.) This will affect the Enemy, Association, Species, and Crewmate table.
4. Application 4: (It's important a commander be well equipped before going into battle, and this means its important he knows all about his guns. When the user inputs a commander's class, the query will return the average damage and ammo capacity of the usable weapon type that the commander can use.) This affects the Commander, Crewmate, Class, and Weapons tables.
5. Application 5: (On planet Earth, there have been studies that show that animals that live in colder environments live longer than those in warmer locales. Is this true amongst the Mass Effect Crew? To find out, the user will enter a temperature in Celcius and the query will return all crewmates who are from planets that are colder than the specified input.) This affects the Crewmate, Species, and Planet tables.

6. User's Guide

This section will use the specified Application Numbers as specified in the **List of Applications** section. As this is a Mass Effect-centered Database, all possible user entries will be Mass Effect related.

To use **Application 1**, users should enter the last name of a Commander of the Normandy, where the possible Commander last names are Shepard or Anderson.

To use **Application 2**, users should enter the name of a Planet within the Mass Effect Universe. The possible Planet names are Dekuuna, Earth, Kharshan, Palaven, Pluto, Rakhana, Rannoch, Suen, SurKesh, Thessia, and Tuchanka.

To use **Application 3**, users should enter the last name of a Normandy Crew Member. Possible entries are Moreau, Tsoni, Cortez, Shepard, Krios, Vakarian, Zorah, and Anderson.

To use **Application 4**, users should enter a specific Combat Class of a Commander. Possible entries are Adept, Soldier, Vanguard, Engineer, Sentinel, Infiltrator.

To use **Application 5**, users should input a temperature in Celcius. This temperature should be a whole number.

7. Contents of tables

Affiliation Table

Organization	Leader	Methodology	Description	Location
Batarian Hegemony	HULL	Batarian Government	The Batarian Hegemony, known more...	Skyllian Verge
Blood Pack	Ganar Yulaz	Mercenary Group	The Blood Pack are a mercenary group...	Skyllian Verge
Blue Suns	Vido Santiago	Mercenary Group	The Blue Suns are a "private security o...	Skyllian Verge
Cerberus	Illusive Man	Human Paramilitary Group	Cerberus supports the principle that an...	Earth Alliance Space
Citadel Council	Tevos	Galactic Government	The Citadel Council is the governing b...	Milky Way
Citadel Security Services	Executor Pallin	Citadel Law Enforcement	C-Sec handles law enforcement on the...	Citadel
Eclipse	Jona Sederis	Mercenary Group	Eclipse is a mercenary corporation that...	Omega
Reaper	HULL	Reaper	The Reapers are a highly-advanced m...	Intergalactic Dark Space
Salarian Union	Dalatrass Linron	Salarian Government	The Salarian Union, also known as the...	Attican Traverse
Systems Alliance	David Anderson	Human Government	The Systems Alliance is the representa...	Earth Alliance Space

Armor Table

ArmorName	ArmorEffect	BodyLocation	Cost	Description
Capacitor Chestplate	Reduces the delay before your shields start reg...	Chest	4000	Micro wells developed by Armax Arsenal store p...
Heavy Damping Gauntlets	Increases shields by 5%	Arms	4000	Armax Arsenal added micro-harmonic oscillator...
Kestrel Torso Sheath	Increases melee damage by 10%, Increases we...	Chest	10000	The Kestrel armor system spinal-mount process...
Kuwashii Visor	Increases headshot damage by 10%	Head	2000	Developed by Ariake Technologies, the wearer...
N7 Chestplate	Increases power damage by 3%.	Chest	<div>HULL</div>	Interlocking plates of thick, ablative ceramic plat...
N7 Gauntlets	Increases health by 3%	Arms	<div>HULL</div>	A combination of fabric armor with kinetic paddi...
N7 Greaves	Increases shield strength by 3%.	Legs	<div>HULL</div>	Dual layer of fabric armor and kinetic padding b...
N7 Helmet	Increases health by 5%	Head	<div>HULL</div>	Dual layer of fabric armor and kinetic padding wi...
Ordnance Packs	Increases spare heavy weapon ammo by 10%.	Legs	2000	Co-developed by the Rahael Group and Beckm...
Recon Hood	Increases weapon damage by 5%	Head	<div>HULL</div>	A hood issued to covert action teams, this mode...

Class Table

CName	CStyle	PrimaryWeaponType	PrimaryAbility	Description
Adept	Biotic	Pistol	Singularity	Adepts are durable and powerful manipulators o...
Engineer	Support	SMG	Combat Drone	Engineers are tech specialists, the most effectiv...
Infiltrator	Stealth	Sniper	Tactical Cloak	Infiltrators are tech and combat specialists with t...
Sentinel	Tank	Pistol	Tech Armor	The Sentinel class combines both tech expertis...
Soldier	Offense	Assault Rifle	Adrenaline Rush	Soldiers are pure combat specialists: no one is t...
Vanguard	Biotic	Shotgun	Biotic Charge	The Vanguard is a powerful combatant, able to...

Commander Table

CrewID	Rank	Gender	Background	Class	Wears	Uses
203	N7	M	Spacer	Adept	N7 Helmet	1008
210	N7	M	War Hero	Soldier	Kestrel Torso Sheath	1001

Crewmate Table

CrewID	CrewFname	CrewLname	CrewAge	Job	CrewSpecies	Pilots
200	Jeff	Moreau	29	Pilot	Human	103
201	Liara	Tsoni	106	Prothean Specialist	Asari	<div>HULL</div>
202	Steve	Cortez	27	Shuttle Pilot	Human	101
203	Commander	Shepard	28	Executive Officer	Human	107
204	Thane	Krios	39	Assassin	Drell	<div>HULL</div>
205	Grunt	<div>HULL</div>	1	Soldier	Krogan	<div>HULL</div>
206	Garrus	Vakarian	25	Weapons Expert	Turian	<div>HULL</div>
207	EDI	<div>HULL</div>	1	Ship AI	<div>HULL</div>	<div>HULL</div>
208	Legion	<div>HULL</div>	300	Reaper Expert	Geth	<div>HULL</div>
209	Tali	Zorah	22	Tech Engineer	Quarian	<div>HULL</div>
210	David	Anderson	48	Captain	Human	<div>HULL</div>

Enemy Table

EnemyID	EnemyFName	EnemyLName	EnemyOrganization	EnemySpecies
50	Saren	Arterius	Reaper	Turian
51	Soverign	NULL	Reaper	Reaper
52	Harbinger	NULL	Reaper	Reaper
53	Benezia	NULL	Reaper	Asari
54	Vido	Santiago	Blue Suns	Human
55	Kahairal	Balak	Batarian Hegemony	Batarian
56	Jack	Harper	Cerberus	Human
57	Marauder	Shields	Reaper	Turian
58	Harkin	NULL	Citadel Security Services	Human
59	Elnora	NULL	Eclipse	Asari

Planet Table

PlanetName	GalaxyLocation	Temp_celcius	DayLength_hours	Radius_km	OrbitalPeriod_earth_ye...	AtmosphericPressure_a..
Dekuuna	Phontes System	29	68.40	10387	1.10	1
Earth	Sol System	23	23.90	6378	1.00	1
Kharshan	Harsha System	33	18.50	5222	1.70	1
Palaven	Trebia System	31	28.30	8990	1.20	1
Pluto	Sol System	-229	9.40	1151	247.70	0
Rakhana	Pompeii System	45	26.00	6543	1.40	2
Rannoch	Tikkun System	48	32.30	6021	0.64	1
Suen	Maskim Xul System	40	0.20	3029	0.30	1
SurKesh	Pranas System	25	21.50	6709	1.20	1
Thessia	Parnitha System	25	27.60	5940	0.90	1
Tuchanka	Aralakh System	72	21.40	8293	16.70	1

SpaceShip Table

ShipID	ShipName	ShipType	Weapons	Capacity
100	SSV Normandy SR-1	frigate	spinal mass accelerator cannon	50
101	UT-47 Kodiak Drop Shuttle	personnel carrier	NULL	12
102	Destiny Ascension	dreadnought	FTL Fusion Particle Accelerators	10000
103	SSV Normandy SR-2	frigate	Thanix Cannon	75
104	SX3 Alliance Fighter	fighter	Type I Mass Accelerator Cannons	1
105	Anxo	freighter	NULL	144
106	M-44 Hammerhead	infantry fighting vehicle	Burst Cannon	3
107	M35 Mako	infantry fighting vehicle	155mm mass accelerator cannon	3

Species Table

SpeciesName	Lifespan_years	FTLDiscoveryYear	Specialty	OriginPlanet
Asari	1000	580	Diplomacy	Thessia
Batarian	100	300	Slavery	Kharshan
Drell	85	1980	Loyalty	Rakhana
Geth	1000000	1895	Artificial Intelligence	Rannoch
Human	150	2148	Individuality	Earth
Krogan	1500	600	Strength	Tuchanka
Quarian	150	1895	Technology	Rannoch
Rachni	500	1	Hive Mind	Suen
Reaper	1000000000	0	Indoctrination	NULL
Salarian	40	600	Intelligence	SurKesh
Turian	150	700	Militaristic	Palaven

Weapon Table

WeaponID	WeaponName	Manufacturer	Damage	AmmoCapacity	WeaponType
1000	M-8 Avenger	Elkoss Combine	10.80	400	Assault Rifle
1001	M-96 Mattock	NULL	50.40	64	Assault Rifle
1002	Collector Assault Rifle	Collectors	17.40	280	Assault Rifle
1003	M-92 Mantis	Devlon Industries	263.10	9	Sniper Rifle
1004	M-98 Widow	NULL	368.30	12	Sniper Rifle
1005	M-23 Katana	Ariake Technologies	220.00	10	Shotgun
1006	M-300 Claymore	Krogan	400.80	10	Shotgun
1007	M-9 Tempest	Elanus Risk Control Services	14.00	450	SMG
1008	M-6 Carnifex	NULL	85.40	18	Pistol
1009	M-3 Predator	Elanus Risk Control Services	37.20	60	Pistol

8. Implementation Code

HTML Code:

1. <https://ix.cs.uoregon.edu/~mgao2/MassEffectDB/MassEffect.txt>

Connection Data:

1. <https://ix.cs.uoregon.edu/~mgao2/MassEffectDB/connectionData.txt>

Query Code in Order of Appearance:

1. <https://ix.cs.uoregon.edu/~mgao2/MassEffectDB/CommanderWeapons.txt>
2. <https://ix.cs.uoregon.edu/~mgao2/MassEffectDB/CrewEnemySpecies.txt>
3. <https://ix.cs.uoregon.edu/~mgao2/MassEffectDB/PlanetFlight.txt>
4. <https://ix.cs.uoregon.edu/~mgao2/MassEffectDB/PlanetaryLifespan.txt>
5. <https://ix.cs.uoregon.edu/~mgao2/MassEffectDB/WeaponInfo.txt>

9. Conclusion

I have created a database and its respective entries of the complex Mass Effect Universe via MYSQL. I modeled some of the possible relationships between characters, such

as common squadmates, weaponry used, armor worn, enemies fought, and ships flown. In a broader scope, I also modeled the connections between various species and planets, and the specificities of both. I interfaced it with PHP to be able to return MYSQL queries from the front end, by letting users input specific keywords.