

Project Summary

In the context of the 5th edition of Dungeons and Dragons, this database models a game with a DM, players, and player characters. It includes all player character skills, attributes, inventory, and other game-relevant aspects, such as status effects and character class and race.

The submitted version of the project has a log-in screen (index.php) with four options:

- a player login
- a dm login
- a debugging button
- an 'add player' button

If a player logs in, they are able to view all of their characters on the player screen (main.php). The sidebar on this screen allows the player to add, delete, and sort characters. The sidebar also allows the player to filter their characters by a specified qualification.

Clicking the "view details" button on the player screen leads to the selected character's "details" screen (chardetails.php), which displays all of the character's attributes. The player is also allowed to edit each attribute individually. There is also a button allowing them to return to the login screen.

If a dm logs in, they are able to see a table of all of their current games and their attributes (dm.php).

The sidebar contains three search options:

- Finding the min/avg/max character attribute of their choosing in each game.
- Finding the min/avg/max character attribute of their choosing across all characters fulfilling an inputted attribute comparison.
- Finding the number of characters suffering from a specified status effect in each game.

There is also a button allowing them to return to the login screen.

Clicking the 'debug' button takes the user to a page (debug.php) containing several programming tools, including:

- A 'reset and create database' button that clears the database.
- an 'add default values' button that repopulates the database with information
- a 'view table' button that displays any chosen table
- and a search option that returns all players who are in every game a specified player is in (our DIVISION query)

Clicking 'Add Player' auto-generates a new player id and adds the new player to the database.

Final Schema v. Early Schema

- Changed attribute domain names to match typical style; e.g., 'INTEGER' -> 'int'.
 - This was for pure readability and style reasons.
- Removed "ON DELETE CASCADE" and "ON UPDATE CASCADE"
 - This was done to make the schema compatible with Oracle rather than MySQL.
 - Generally considered better practice to avoid such statements, were unnecessary for function.

- Changed 'BOOLEAN' domain to 'number' domain; 0=False, 1=True
 - Done for compatibility with Oracle SQL.
- Added foreign key constraint/reference to 'Race' table in 'Chr' table
 - This was just an oversight in the original schema. Now characters are associated with their race.
- Merged 'MemberOf' table into 'Chr' table
 - This was a one-to-many relationship, so now 'Chr' just has a reference to 'Race'
- Added 'className' attribute to 'AssignedTo' table
 - Now 'AssignedTo' properly references its associated 'Class' tuple
- Changed 'startTime' and 'endTime' domains from 'DATETIME' to 'timestamp' in 'AfflictedBy' table
 - Done for compatibility with Oracle SQL domains.
- Removed 'skillRole' attribute from 'Skill' table
 - This was a redundant attribute; skillType already expressed the intended information.
- Added 'quantity' attribute to 'Has' table
 - This is to represent if a character has multiple of the same skill.

Copy of Schema and Data Screenshots

To test schema and table creation, run deleteAll.sql to reset the database

SCHEMA (Located in createTablesData.sql)

```
SET DEFINE OFF;
```

```
-- CREATE TABLE STATEMENTS
```

```
CREATE TABLE DM
(
    dmID int,
    dmName char(100) NOT NULL,
    PRIMARY KEY (dmID)
);
```

```
CREATE TABLE GameDMdBy
(
    gameID int,
    gameName char(100) NOT NULL,
    since date,
    dmID int,
    PRIMARY KEY (gameID),
    FOREIGN KEY (dmID) REFERENCES DM(dmID)
);
```

```
CREATE TABLE Player
(
    playerID int,
    playerName char(100) NOT NULL,
    PRIMARY KEY (playerID)
);

CREATE TABLE PlayedBy
(
    playerID int,
    gameID int,
    PRIMARY KEY (playerID, gameID),
    FOREIGN KEY (playerID) REFERENCES Player(playerID),
    FOREIGN KEY (gameID) REFERENCES GameDMdBy(gameID)
);

CREATE TABLE Race
(
    raceName char(100),
    raceDesc char(255),
    PRIMARY KEY (raceName),
    UNIQUE (raceDesc)
);

CREATE TABLE XPToLevel
(
    totalXP int,
    lv int NOT NULL,
    PRIMARY KEY (totalXP)
);

CREATE TABLE IsEncumbered
(
    weightLimit int,
    currentWeight int DEFAULT 0,
    overencumber number,
    PRIMARY KEY (weightLimit, currentWeight)
```

```
);

CREATE TABLE Chr
(
    charID int,
    playerID int,
    charName char(100) NOT NULL,
    dexterity int,
    constitution int,
    intelligence int,
    strength int,
    charisma int,
    wisdom int,
    weightLimit int,
    currentWeight int DEFAULT 0,
    totalXP int DEFAULT 0,
    raceName char(100) NOT NULL,
    PRIMARY KEY (charID, playerID),
    FOREIGN KEY (playerID) REFERENCES Player(PlayerID),
    FOREIGN KEY (totalXP) REFERENCES XPToLevel(totalXp),
    FOREIGN KEY (weightLimit, currentWeight) REFERENCES IsEncumbered(weightLimit,
    currentWeight),
    FOREIGN KEY (raceName) REFERENCES Race(raceName)
);

CREATE TABLE Class
(
    className char(100),
    classDesc char(255),
    PRIMARY KEY (className),
    UNIQUE (classDesc)
);

CREATE TABLE AssignedTo
(
    charID int,
    playerID int,
    className char(100),
```

```

PRIMARY KEY (className, charID, playerID),
FOREIGN KEY (className) REFERENCES Class(className),
FOREIGN KEY (playerID, charID) REFERENCES Chr(playerID, charID)
);

CREATE TABLE StatusEffect
(
    effectName char(100),
    duration real DEFAULT 0,
    PRIMARY KEY (effectName)
);

CREATE TABLE AfflictedBy
(
    charID int,
    playerID int,
    effectName char(100),
    startTime timestamp,
    endTime timestamp,
    PRIMARY KEY (playerID, charID, effectName),
    FOREIGN KEY (playerID, charID) REFERENCES Chr(playerID, charID),
    FOREIGN KEY (effectName) REFERENCES StatusEffect(effectName)
);

CREATE TABLE Item
(
    itemName char(100),
    requirements char(255),
    itemDesc char(255),
    itemValue real,
    PRIMARY KEY (itemName),
    UNIQUE (itemDesc)
);

CREATE TABLE IsWeaponRanged
(
    needsAmmo number,
    ranged number,

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```
        PRIMARY KEY (needsAmmo)
    );

CREATE TABLE Weapon
(
    itemName char(100),
    damage int,
    needsAmmo number,
    PRIMARY KEY (itemName),
    FOREIGN KEY (itemName) REFERENCES Item(itemName),
    FOREIGN KEY (needsAmmo) REFERENCES IsWeaponRanged(needsAmmo)
);

CREATE TABLE IsArmourForStealth
(
    armourType char(100),
    stealthDisadv number,
    PRIMARY KEY (armourType)
);

CREATE TABLE Armour
(
    itemName char(100),
    armourType char(100),
    PRIMARY KEY (itemName),
    FOREIGN KEY (itemName) REFERENCES Item(itemName),
    FOREIGN KEY (armourType) REFERENCES IsArmourForStealth(armourType)
);

CREATE TABLE Tool
(
    itemName char(100),
    PRIMARY KEY (itemName),
    FOREIGN KEY (itemName) REFERENCES Item(itemName)
);

CREATE TABLE Owns
(
```

```
itemName char(100),
charID int,
playerID int,
quantity int,
PRIMARY KEY (itemName, playerID, charID),
FOREIGN KEY (itemName) REFERENCES Item(itemName),
FOREIGN KEY (playerID, charID) REFERENCES Chr(playerID, charID)
);

CREATE TABLE Skill
(
skillName char(100),
skillDesc char(255),
skillType char(100),
targets char(255),
active number NOT NULL,
PRIMARY KEY (skillName),
UNIQUE (skillDesc)
);

CREATE TABLE Attack
(
skillName char(100),
damage int,
PRIMARY KEY (SkillName),
FOREIGN KEY (SkillName) REFERENCES Skill(SkillName)
);

CREATE TABLE Feature
(
skillname char(100),
PRIMARY KEY (SkillName),
FOREIGN KEY (SkillName) REFERENCES Skill(SkillName)
);

CREATE TABLE Spell
(
skillName char(100),
```

```

    manaCost int,
    PRIMARY KEY (SkillName),
    FOREIGN KEY (SkillName) REFERENCES Skill(SkillName)
);

CREATE TABLE Has
(
    skillName char(100),
    charID int,
    playerID int,
    quantity int,
    PRIMARY KEY (skillName, playerID, charID),
    FOREIGN KEY (skillName) REFERENCES Skill(skillName),
    FOREIGN KEY (playerID, charID) REFERENCES Chr(playerID, charID)
);

-- INSERT STATEMENTS
INSERT INTO DM
VALUES
    (10000, 'Jane Doe');
INSERT INTO DM
VALUES
    (10001, 'Marc Garneau');
INSERT INTO DM
VALUES
    (10002, 'Gord Downie');
INSERT INTO DM
VALUES
    (10003, 'Hidetaka Miyazaki');
INSERT INTO DMBy
VALUES
    (10004, 'Yuji Horii');
INSERT INTO GameDMdBy
VALUES
    (10000, 'The Five Friends', TO_DATE('2023-02-28', 'YYYY-MM-DD'), 10003);
INSERT INTO GameDMdBy
VALUES
    (10001, 'Gun City', TO_DATE('2019-06-10', 'YYYY-MM-DD'), 10004);

```

```
INSERT INTO GameDMdBy
VALUES
    (10002, 'Trebuchet Village', TO_DATE('2021-12-25', 'YYYY-MM-DD'), 10003);
INSERT INTO GameDMdBy
VALUES
    (10003, 'The Crazy Wizard', TO_DATE('2015-11-02', 'YYYY-MM-DD'), 10000);
INSERT INTO GameDMdBy
VALUES
    (10004, 'AwesomeLand', TO_DATE('1999-02-22', 'YYYY-MM-DD'), 10002);
INSERT INTO Player
VALUES
    (100000, 'Mitch Hedberg');
INSERT INTO Player
VALUES
    (100001, 'Lu Bu');
INSERT INTO Player
VALUES
    (100002, 'Rachel Smith');
INSERT INTO Player
VALUES
    (100003, 'Cao Cao');
INSERT INTO Player
VALUES
    (100004, 'Guan Yu');
INSERT INTO Player
VALUES
    (100005, 'Rebecca Washington');
INSERT INTO Player
VALUES
    (100006, 'Cecil McKinley');
INSERT INTO PlayedBy
VALUES
    (100006, 10000);
INSERT INTO PlayedBy
VALUES
    (100004, 10000);
INSERT INTO PlayedBy
VALUES
```

```
(100003, 10000);
INSERT INTO PlayedBy
VALUES
(100000, 10000);
INSERT INTO PlayedBy
VALUES
(100001, 10000);
INSERT INTO PlayedBy
VALUES
(100000, 10001);
INSERT INTO PlayedBy
VALUES
(100003, 10001);
INSERT INTO PlayedBy
VALUES
(100004, 10001);
INSERT INTO PlayedBy
VALUES
(100006, 10002);
INSERT INTO PlayedBy
VALUES
(100005, 10002);
INSERT INTO PlayedBy
VALUES
(100004, 10002);
INSERT INTO PlayedBy
VALUES
(100003, 10003);
INSERT INTO PlayedBy
VALUES
(100002, 10003);
INSERT INTO PlayedBy
VALUES
(100001, 10003);
INSERT INTO PlayedBy
VALUES
(100000, 10004);
INSERT INTO PlayedBy
```

```
VALUES
(100005, 10004);
INSERT INTO Race
VALUES
('Dragonborn', 'Humanoid dragons.');
INSERT INTO Race
VALUES
('Dwarf', 'Bold & hardy.');
INSERT INTO Race
VALUES
('Elf', 'Magical graceful people.');
INSERT INTO Race
VALUES
('Gnome', 'Tiny & energetic.');
INSERT INTO Race
VALUES
('Half-Elf', 'Kind of an elf.');
INSERT INTO Race
VALUES
('Halfling', 'Little guys & gals.');
INSERT INTO Race
VALUES
('Half-Orc', 'Kind of an orc.');
INSERT INTO Race
VALUES
('Human', 'Homo sapiens.');
INSERT INTO XPToLevel
VALUES
('Tiefling', 'Devilish.');
INSERT INTO XPToLevel
VALUES
(253665, 17);
INSERT INTO XPToLevel
VALUES
(120, 1);
INSERT INTO XPToLevel
VALUES
(40892, 8);
```

```
INSERT INTO XPToLevel
VALUES
(115067, 12);
INSERT INTO XPToLevel
VALUES
(125432, 13);
INSERT INTO XPToLevel
VALUES
(6547, 5);
INSERT INTO XPToLevel
VALUES
(23010, 7);
INSERT INTO XPToLevel
VALUES
(67031, 10);
INSERT INTO XPToLevel
VALUES
(85441, 11);
INSERT INTO XPToLevel
VALUES
(2756, 4);
INSERT INTO IsEncumbered
VALUES
(225, 104, 0);
INSERT INTO IsEncumbered
VALUES
(120, 157, 1);
INSERT INTO IsEncumbered
VALUES
(300, 178, 0);
INSERT INTO IsEncumbered
VALUES
(105, 44, 0);
INSERT INTO IsEncumbered
VALUES
(165, 39, 0);
INSERT INTO IsEncumbered
VALUES
```

```
(255, 17, 0);
INSERT INTO IsEncumbered
VALUES
(210, 92, 0);
INSERT INTO IsEncumbered
VALUES
(210, 119, 0);
INSERT INTO IsEncumbered
VALUES
(165, 210, 1);
INSERT INTO IsEncumbered
VALUES
(225, 201, 0);
INSERT INTO Chr
VALUES
(100000, 100000, 'Bartibus Beetleby', 13, 11, 12, 7, 17, 9, 225, 104, 253665, 'Halfling');
INSERT INTO Chr
VALUES
(100001, 100000, 'The Smiling Giggler', 14, 12, 15, 9, 7, 13, 120, 157, 120, 'Human');
INSERT INTO Chr
VALUES
(100002, 100001, 'Crusher McSmashy', 10, 17, 6, 19, 7, 6, 300, 178, 40892, 'Half-Orc');
INSERT INTO Chr
VALUES
(100003, 100002, 'Kyra Darkblade', 16, 11, 15, 13, 9, 12, 105, 44, 115067, 'Tiefling');
INSERT INTO Chr
VALUES
(100004, 100002, 'Ynnead Malekith', 19, 12, 16, 9, 11, 14, 165, 39, 125432, 'Elf');
INSERT INTO Chr
VALUES
(100005, 100003, 'Zhao Ming', 15, 13, 14, 15, 9, 16, 255, 17, 6547, 'Dragonborn');
INSERT INTO Chr
VALUES
(100006, 100004, 'Sir Thaddeus von Totalerquatsch', 12, 14, 7, 14, 10, 9, 210, 92, 23010,
'Human');
INSERT INTO Chr
VALUES
(100007, 100005, 'Belac Sprinkles', 14, 7, 4, 5, 20, 8, 210, 119, 67031, 'Gnome');
```

```
INSERT INTO Chr
VALUES
    (100008, 100006, 'Martha Aleguzzler', 9, 15, 17, 15, 8, 9, 165, 210, 85441, 'Dwarf');
INSERT INTO Chr
VALUES
    (100009, 100005, 'Patricia Petunia', 7, 18, 16, 15, 19, 4, 225, 201, 2756, 'Halfling');
INSERT INTO Class
VALUES
    ('Barbarian', 'A raging warrior.');
INSERT INTO Class
VALUES
    ('Bard', 'An inspiring magician.');
INSERT INTO Class
VALUES
    ('Cleric', 'A priestly champion.');
INSERT INTO Class
VALUES
    ('Druid', 'A priest of nature.');
INSERT INTO Class
VALUES
    ('Fighter', 'A master of martial combat.');
INSERT INTO Class
VALUES
    ('Monk', 'A master of martial arts.');
INSERT INTO Class
VALUES
    ('Paladin', 'A holy warrior.');
INSERT INTO Class
VALUES
    ('Ranger', 'A warrior of the wilderness.');
INSERT INTO Class
VALUES
    ('Rogue', 'A stealthy scoundrel.');
INSERT INTO Class
VALUES
    ('Sorcerer', 'A gifted spellcaster');
```

```
('Warlock', 'A magic wielder with a supernatural bargain.');
INSERT INTO Class
VALUES
    ('Wizard', 'A scholarly magic user.');
INSERT INTO AssignedTo
VALUES
    (100000, 100000, 'Bard');
INSERT INTO AssignedTo
VALUES
    (100001, 100000, 'Bard');
INSERT INTO AssignedTo
VALUES
    (100002, 100001, 'Barbarian');
INSERT INTO AssignedTo
VALUES
    (100003, 100002, 'Warlock');
INSERT INTO AssignedTo
VALUES
    (100004, 100002, 'Ranger');
INSERT INTO AssignedTo
VALUES
    (100005, 100003, 'Paladin');
INSERT INTO AssignedTo
VALUES
    (100006, 100004, 'Fighter');
INSERT INTO AssignedTo
VALUES
    (100007, 100005, 'Sorcerer');
INSERT INTO AssignedTo
VALUES
    (100008, 100006, 'Fighter');
INSERT INTO AssignedTo
VALUES
    (100009, 100005, 'Monk');
INSERT INTO StatusEffect
VALUES
    ('Blinded', 200);
INSERT INTO StatusEffect
```

```
VALUES
    ('Charmed', 50);
INSERT INTO StatusEffect
VALUES
    ('Deafened', 75);
INSERT INTO StatusEffect
VALUES
    ('Frightened', 90);
INSERT INTO StatusEffect
VALUES
    ('Invisible', 75);
INSERT INTO AfflictedBy VALUES (100003, 100002, 'Invisible', TO_TIMESTAMP('2023-02-26
13:22:00', 'YYYY-MM-DD HH24:MI:SS.FF'), TO_TIMESTAMP('2023-02-26 13:22:15',
'YYYY-MM-DD HH24:MI:SS.FF'));
INSERT INTO AfflictedBy VALUES (100000, 100000, 'Blinded', TO_TIMESTAMP('2023-02-14
17:02:23', 'YYYY-MM-DD HH24:MI:SS.FF'), TO_TIMESTAMP('2023-02-16 19:02:23',
'YYYY-MM-DD HH24:MI:SS.FF'));
INSERT INTO AfflictedBy VALUES (100000, 100000, 'Frightened', TO_TIMESTAMP('2023-02-14
05:18:41', 'YYYY-MM-DD HH24:MI:SS.FF'), TO_TIMESTAMP('2023-02-14 05:19:41',
'YYYY-MM-DD HH24:MI:SS.FF'));
INSERT INTO AfflictedBy VALUES (100008, 100006, 'Frightened', TO_TIMESTAMP('2023-01-14
12:32:17', 'YYYY-MM-DD HH24:MI:SS.FF'), TO_TIMESTAMP('2023-01-14 12:32:27',
'YYYY-MM-DD HH24:MI:SS.FF'));
INSERT INTO AfflictedBy VALUES (100001, 100000, 'Deafened', TO_TIMESTAMP('2023-01-29
04:47:02', 'YYYY-MM-DD HH24:MI:SS.FF'), TO_TIMESTAMP('2023-02-06 04:47:02',
'YYYY-MM-DD HH24:MI:SS.FF'));
INSERT INTO Item
VALUES
    ('Battleaxe', null, 'A big axe for killing things.', 10);
INSERT INTO Item
VALUES
    ('Warhammer', 'Strength 12+', 'A big hammer that can bludgeon.', 15);
INSERT INTO Item
VALUES
    ('Longbow', 'Dexterity 8+', 'A bow that can shoot things.', 50);
INSERT INTO Item
VALUES
    ('Dull Dagger', null, 'A dull dagger that seems to once hold value...', 0.5);
```

```
INSERT INTO Item
VALUES
    ('Spear', 'Dexterity 3+', 'A basic spear.', 5);
INSERT INTO Item
VALUES
    ('Ring Mail', 'Strength 10+', 'Leather armor with heavy rings sewn into it.', 30);
INSERT INTO Item
VALUES
    ('Leather', null, 'Armour made out of leather boiled in oil.', 10);
INSERT INTO Item
VALUES
    ('Chain Mail', 'Strength 13+', 'Armour made of metal rings chained together', 40);
INSERT INTO Item
VALUES
    ('Studded Leather', null, 'Armour made out of leather with studs.', 15);
INSERT INTO Item
VALUES
    ('Basic Shield', null, 'A standard shield.', 10);
INSERT INTO Item
VALUES
    ('Gold Piece', null, 'A single piece of gold. Used to buy things.', 1);
INSERT INTO Item
VALUES
    ('Jewelers Tools', null, 'A jewelry artisans toolkit.', 25);
INSERT INTO Item
VALUES
    ('Disguise Kit', 'Dexterity 3+', 'A kits to disguise yourself with', 25);
INSERT INTO Item
VALUES
    ('Flute', null, 'A neatly crafted wooden flute.', 2);
INSERT INTO Item
VALUES
    ('Basic Alchemy Set', 'Intelligence 5+', 'Standard kit for alchemy', 50);
INSERT INTO IsWeaponRanged
VALUES
    ('Painters Tools', null, 'A painters supplies.', 10);
```

```
(1, 1);
INSERT INTO IsWeaponRanged
VALUES
(0, 0);
INSERT INTO Weapon
VALUES
('Battleaxe', 10, 0);
INSERT INTO Weapon
VALUES
('Warhammer', 14, 0);
INSERT INTO Weapon
VALUES
('Longbow', 8, 1);
INSERT INTO Weapon
VALUES
('Dull Dagger', 1, 0);
INSERT INTO Weapon
VALUES
('Spear', 5, 0);
INSERT INTO IsArmourForStealth
VALUES
('Heavy Armour', 1);
INSERT INTO IsArmourForStealth
VALUES
('Light Armour', 0);
INSERT INTO IsArmourForStealth
VALUES
('Heavy Shield', 1);
INSERT INTO IsArmourForStealth
VALUES
('Light Shield', 0);
INSERT INTO Armour
VALUES
('Ring Mail', 'Heavy Armour');
INSERT INTO Armour
VALUES
('Leather', 'Light Armour');
INSERT INTO Armour
```

```
VALUES
    ('Chain Mail', 'Heavy Armour');
INSERT INTO Armour
VALUES
    ('Studded Leather', 'Light Armour');
INSERT INTO Armour
VALUES
    ('Basic Shield', 'Light Shield');
INSERT INTO Tool
VALUES
    ('Jewelers Tools');
INSERT INTO Tool
VALUES
    ('Disguise Kit');
INSERT INTO Tool
VALUES
    ('Flute');
INSERT INTO Tool
VALUES
    ('Basic Alchemy Set');
INSERT INTO Tool
VALUES
    ('Painters Tools');
INSERT INTO Owns
VALUES
    ('Warhammer', 100002, 100001, 1);
INSERT INTO Owns
VALUES
    ('Warhammer', 100005, 100003, 1);
INSERT INTO Owns
VALUES
    ('Gold Piece', 100000, 100000, 142);
INSERT INTO Owns
VALUES
    ('Gold Piece', 100001, 100000, 6);
INSERT INTO Owns
VALUES
    ('Gold Piece', 100002, 100001, 12);
```

```
INSERT INTO Owns
VALUES
    ('Gold Piece', 100003, 100002, 533);
INSERT INTO Owns
VALUES
    ('Gold Piece', 100004, 100002, 543);
INSERT INTO Owns
VALUES
    ('Gold Piece', 100005, 100003, 96);
INSERT INTO Owns
VALUES
    ('Gold Piece', 100006, 100004, 457);
INSERT INTO Owns
VALUES
    ('Gold Piece', 100007, 100005, 1363);
INSERT INTO Owns
VALUES
    ('Gold Piece', 100008, 100006, 86);
INSERT INTO Owns
VALUES
    ('Gold Piece', 100009, 100005, 2);
INSERT INTO Owns
VALUES
    ('Longbow', 100003, 100002, 1);
INSERT INTO Owns
VALUES
    ('Ring Mail', 100006, 100004, 1);
INSERT INTO Owns
VALUES
    ('Leather', 100005, 100003, 1);
INSERT INTO Owns
VALUES
    ('Jewelers Tools', 100001, 100000, 1);
INSERT INTO Skill
VALUES
    ('Black Tentacles', 'Creepy black tentacles...', 'Spell', '90ft', 1);
INSERT INTO Skill
VALUES
```

```
('Confusion', 'Makes people confused!!', 'Spell', '10ft Sphere', 1);
INSERT INTO Skill
VALUES
('Heal', 'Heal chosen character', 'Spell', 'Single character', 1);
INSERT INTO Skill
VALUES
('Light', 'Create a ball of light to illuminate your path', 'Spell', '10ft', 1);
INSERT INTO Skill
VALUES
('Zone of Truth', 'Make people tell the truth within zone', 'Spell', '5ft Sphere', 1);
INSERT INTO Skill
VALUES
('Slashing Attack', 'Slices someone with a sharp blade.', 'Attack', '5ft', 1);
INSERT INTO Skill
VALUES
('Bludgeoning Attack', 'Hits someone with a dull, hard object.', 'Attack', '5ft', 1);
INSERT INTO Skill
VALUES
('Kick', 'Kick them.', 'Attack', '3ft', 1);
INSERT INTO Skill
VALUES
('Thrust', 'Lunge forward to pierce enemy', 'Attack', '15ft', 1);
INSERT INTO Skill
VALUES
('Punch', 'Hit someone with fists.', 'Attack', '2ft', 1);
INSERT INTO Skill
VALUES
('Disguised', 'This character is disguised.', 'Feature', null, 0);
INSERT INTO Attack
VALUES
('Slashing Attack', 8);
INSERT INTO Attack
VALUES
('Bludgeoning Attack', 5);
INSERT INTO Attack
VALUES
('Kick', 2);
INSERT INTO Attack
```

```
VALUES
    ('Thrust', 4);
INSERT INTO Attack
VALUES
    ('Punch', 1);
INSERT INTO Feature
VALUES
    ('Disguised');
INSERT INTO Spell
VALUES
    ('Black Tentacles', 15);
INSERT INTO Spell
VALUES
    ('Confusion', 10);
INSERT INTO Spell
VALUES
    ('Heal', 5);
INSERT INTO Spell
VALUES
    ('Light', 2);
INSERT INTO Spell
VALUES
    ('Zone of Truth', 10);
INSERT INTO Has
VALUES
    ('Black Tentacles', 100001, 100000, 1);
INSERT INTO Has
VALUES
    ('Black Tentacles', 100003, 100002, 1);
INSERT INTO Has
VALUES
    ('Confusion', 100005, 100003, 1);
INSERT INTO Has
VALUES
    ('Disguised', 100001, 100000, 1);
INSERT INTO Has
VALUES
    ('Bludgeoning Attack', 100008, 100006, 3);
```

COMMIT;

SCREENSHOTS AFTER createTablesData.sql HAS BEEN RUN

DM

Projection Attributes

dmID dmName

Filter Attributes

10000	Jane Doe
10001	Marc Garneau
10002	Gord Downie
10003	Hidetaka Miyazaki
10004	Yuji Horii

GameDMdBy

Projection Attributes

gameID gameName since dmID

Filter Attributes

10000	The Five Friends	28-FEB-23	10003
10001	Gun City	10-JUN-19	10004
10002	Trebuchet Village	25-DEC-21	10003
10003	The Crazy Wizard	02-NOV-15	10000
10004	AwesomeLand	22-FEB-99	10002

Player

Projection Attributes

playerID playerName

Filter Attributes

100000 Mitch Hedberg
100001 Lu Bu
100002 Rachel Smith
100003 Cao Cao
100004 Guan Yu
100005 Rebecca Washington
100006 Cecil McKinley

PlayedBy

Projection Attributes

playerID gameID

Filter Attributes

10000010000

10000010001

10000010004

10000110000

10000110003

10000210003

10000310000

10000310001

10000310003

10000410000

10000410001

10000410002

10000510002

10000510004

10000610000

10000610002

Race

Projection Attributes

raceName raceDesc

Filter Attributes

Dragonborn	Humanoid dragons.
Dwarf	Bold & hardy.
Elf	Magical graceful people.
Gnome	Tiny & energetic.
Half-Elf	Kind of an elf.
Halfling	Little guys & gals.
Half-Orc	Kind of an orc.
Human	Homo sapiens.
Tiefling	Devilish.

XPToLevel

Projection Attributes

totalXP lv

Filter Attributes

253665 17

120 1

40892 8

115067 12

125432 13

6547 5

23010 7

67031 10

85441 11

2756 4

253 1

IsEncumbered

Projection Attributes

weightLimit currentWeight overencumber

Filter Attributes

2251040
1201571
3001780
10544 0
16539 0
25517 0
21092 0
2101190
1652101
2252010

Chr

Projection Attributes

charID playerID charName dexterity constitution intelligence strength charisma wisdom weightLimit currentWeight totalXP raceName

Filter Attributes

100000100000Bartibus Beetleby	13 11 12 7 179 225 104 253 665	Halfling
100001100000The Smiling Giggler	14 12 159 7 13 120 157 120	Human
100002100001Crusher McSmashy	10 176 197 6 300 178 40892	Half-Orc
100003100002Kyra Darkblade	16 11 15 139 12 105 44 115 067	Tiefling
100004100002Ynnead Malekith	19 12 169 11 14 165 39 125 432	Elf
100005100003Zhao Ming	15 13 14 159 162 5517 6547	Dragonborn
100006100004Sir Thaddeus von Totalerquatsch	12 14 7 14 109 210 92 230 10	Human
100007100005Belac Sprinkles	147 4 5 208 210 119 67031	Gnome
100008100006Martha Aleguzzler	9 15 17 158 9 165 210 85441	Dwarf
100009100005Patricia Petunia	7 18 16 15 194 225 201 2756	Halfling
100010100005Patritch Yodar	3 13 12 11 205 300 178 233	Gnome
100011100005Evil Stevil	5 12 12 16 149 105 44 2756	Human
100012100005Sullivan the Frog	149 9 11 114 165 210 85441	Elf
100013100005Ms Orc	197 126 109 300 178 2756	Half-Orc
100014100005Lady Firebreath	12 10 13 5 10 18 120 157 230 10	Dragonborn
100015100005Lucy Fir	11 11 16 17 137 165 39 120	Tiefling

Class

Projection Attributes

className classDesc

Filter Attributes

Barbarian	A raging warrior.
Bard	An inspiring magician.
Cleric	A priestly champion.
Druid	A priest of nature.
Fighter	A master of martial combat.
Monk	A master of martial arts.
Paladin	A holy warrior.
Ranger	A warrior of the wilderness.
Rogue	A stealthy scoundrel.
Sorcerer	A gifted spellcaster.
Warlock	A magic wielder with a supernatural bargain.
Wizard	A scholarly magic user.

AssignedTo

Projection Attributes

charID playerID className

Filter Attributes

100002 100001 Barbarian
100000 100000 Bard
100001 100000 Bard
100010 100005 Bard
100013 100005 Bard
100006 100004 Fighter
100008 100006 Fighter
100009 100005 Monk
100005 100003 Paladin
100014 100005 Paladin
100004 100002 Ranger
100011 100005 Rogue
100007 100005 Sorcerer
100003 100002 Warlock
100015 100005 Warlock
100012 100005 Wizard

StatusEffect

Projection Attributes

effectName duration

Filter Attributes

Blinded	200
Charmed	50
Deafened	75
Frightened	90
Invisible	75

AfflictedBy

Projection Attributes

playerID charID effectName startTime endTime

Filter Attributes

100003 100002 Invisible	26-FEB-23 01.22.00.000000 PM	26-FEB-23 01.22.15.000000 PM
100000 100000 Blinded	14-FEB-23 05.02.23.000000 PM	16-FEB-23 07.02.23.000000 PM
100000 100000 Frightened	14-FEB-23 05.18.41.000000 AM	14-FEB-23 05.19.41.000000 AM
100008 100006 Frightened	14-JAN-23 12.32.17.000000 PM	14-JAN-23 12.32.27.000000 PM
100001 100000 Deafened	29-JAN-23 04.47.02.000000 AM	06-FEB-23 04.47.02.000000 AM

Item			
Projection Attributes			
<input type="checkbox"/> itemName <input type="checkbox"/> requirements <input type="checkbox"/> itemDesc <input type="checkbox"/> itemValue			
<input type="button" value="Filter Attributes"/>			
Battleaxe	A big axe for killing things.	10	
Warhammer	Strength 12+	A big hammer that can bludgeon.	15
Longbow	Dexterity 8+	A bow that can shoot things.	50
Dull Dagger	A dull dagger that seems to once hold value???.5		
Spear	Dexterity 3+	A basic spear.	5
Ring Mail	Strength 10+	Leather armor with heavy rings sewn into it.	30
Leather	Armour made out of leather boiled in oil.	10	
Chain Mail	Strength 13+	Armour made of metal rings chained together	40
Studded Leather	Armour made out of leather with studs.	15	
Basic Shield	A standard shield.	10	
Gold Piece	A single piece of gold. Used to buy things.	1	
Jewelers Tools	A jewelry artisans toolkit.	25	
Disguise Kit	Dexterity 3+	A kits to disguise yourself with	25
Flute	A neatly crafted wooden flute.	2	
Basic Alchemy Set	Intelligence 5+	Standard kit for alchemy	50
Painters Tools	A painters supplies.	10	

IsWeaponRanged
Projection Attributes
<input type="checkbox"/> needsAmmo <input type="checkbox"/> ranged
<input type="button" value="Filter Attributes"/>
11
00

Weapon

Projection Attributes

itemName damage needsAmmo

Filter Attributes

Battleaxe	100
Warhammer	140
Longbow	8 1
Dull Dagger	1 0
Spear	5 0

IsArmourForStealth

Projection Attributes

armourType stealthDisadv

Filter Attributes

Heavy Armour	1
Light Armour	0
Heavy Shield	1
Light Shield	0

Armour

Projection Attributes

itemName armourType

Filter Attributes

Ring Mail	Heavy Armour
Leather	Light Armour
Chain Mail	Heavy Armour
Studded Leather	Light Armour
Basic Shield	Light Shield

Tool

Projection Attributes

itemName

Filter Attributes

Basic Alchemy Set
Disguise Kit
Flute
Jewelers Tools
Painters Tools

Owns

Projection Attributes

itemName playerID charID quantity

Filter Attributes

Warhammer	100002	100001	1
Warhammer	100005	100003	1
Gold Piece	100000	100000	142
Gold Piece	100001	100000	6
Gold Piece	100002	100001	12
Gold Piece	100003	100002	533
Gold Piece	100004	100002	543
Gold Piece	100005	100003	96
Gold Piece	100006	100004	457
Gold Piece	100007	100005	1363
Gold Piece	100008	100006	86
Gold Piece	100009	100005	2
Gold Piece	100010	100005	34
Gold Piece	100011	100005	124
Gold Piece	100012	100005	44
Gold Piece	100013	100005	12
Gold Piece	100014	100005	769954
Gold Piece	100015	100005	23
Longbow	100003	100002	1
Ring Mail	100006	100004	1
Ring Mail	100012	100005	1
Ring Mail	100015	100005	1
Leather	100005	100003	1
Leather	100015	100005	1
Leather	100010	100005	1
Jewelers Tools	100001	100000	1
Flute	100011	100005	1
Flute	100013	100005	1
Disguise Kit	100014	100005	1

Skill

Projection Attributes

skillName skillDesc skillType targets active

Filter Attributes

Black Tentacles	Creepy black tentacles...	Spell	90ft	1
Confusion	Makes people confused!!	Spell	10ft Sphere	1
Heal	Heal chosen character	Spell	Single character	1
Light	Create a ball of light to illuminate your path	Spell	10ft	1
Zone of Truth	Make people tell the truth within zone	Spell	5ft Sphere	1
Slashing Attack	Slices someone with a sharp blade.	Attack	5ft	1
Bludgeoning Attack	Hits someone with a dull, hard object.	Attack	5ft	1
Kick	Kick them.	Attack	3ft	1
Thrust	Lunge forward to pierce enemy	Attack	15ft	1
Punch	Hit someone with fists.	Attack	2ft	1
Disguised	This character is disguised.	Feature	0	

Attack

Projection Attributes

skillName damage

Filter Attributes

Slashing Attack	8
Bludgeoning Attack	5
Kick	2
Thrust	4
Punch	1

Feature

Projection Attributes

skillName

Filter Attributes

Disguised

Spell

Projection Attributes

skillName manaCost

Filter Attributes

Black Tentacles 15

Confusion 10

Heal 5

Light 2

Zone of Truth 10

Has	
Projection Attributes	
<input type="checkbox"/> skillName	<input type="checkbox"/> charID
<input type="checkbox"/> playerID	<input type="checkbox"/> quantity
Filter Attributes	
Black Tentacles	100001 1000001
Black Tentacles	100003 1000021
Confusion	100005 1000031
Disguised	100001 1000001
Bludgeoning Attack	100008 1000063

SQL Queries Used and Their Locations

- INSERT: add-character.php (lines 393-418)
- DELETE: main.php (lines 195-215)
- UPDATE: charDetails.php (lines 277 - 297)
- Selection: main.php (lines 292-307)
- Projection: debug.php (line 159)
- Join: main.php (lines 139-153)
- Aggregation with Group By: dm.php (lines 182 - 192)
- Aggregation with Having: dm.php (lines 159 - 168)
- Nested Aggregation with Group By: dm.php (lines 207 - 221)
- Division: debug.php (lines 181 - 193)

GUI Functionality Screenshots

INSERT:

Before

Player
Goergies Blueboots
Swengkl
100005

Character Search
Character whose charID is greater than
AND contains in their charName
Search Clear

Characters
Select charID, charName, dexterity, constitution, intelligence, strength, charisma, wisdom, weightLimit, currentWeight, totalXP, raceName, raceDesc, className, classDesc, lv, overencumber

charID	charName	dexterity	constitution	intelligence	strength	charisma	wisdom	weightLimit	currentWeight	totalXP	raceName	raceDesc	className	classDesc	lv	overencumber
100011	Evil Stevil	5	12	12	16	14	9	105	44	2756	Human	Homo sapiens.	Rogue	A stealthy scoundrel.	4	0
100007	Jimmy Johns	14	7	4	5	20	8	210	119	67031	Gnome	Tiny & energetic.	Sorcerer	A gifted spellcaster.	100	
100014	Lady Firebreath	12	10	13	5	10	18	120	157	23010	Dragonborn	Humanoid dragons.	Paladin	A holy warrior.	7	1
100015	Lucy Fir	11	11	16	17	13	7	165	39	120	Tiefling	Devilish.	Warlock	A magic wielder with a bit of a supernatural bargain.	1	0
100009	Patricia Petunia	7	18	16	15	19	4	225	201	2756	Halfling	Little guys & gals.	Monk	A master of martial arts.	4	0

View Details Delete

Add Character
Goergies Blueboots Swengkl
100005

Character Creation Form
* indicates required
Character ID: 100016
charName: Alphanumeric *
dexterity: Number
constitution: Number
intelligence: Number
strength: Number
charisma: Number
wisdom: Number
weightLimit: Number *
currentWeight: Number
totalXP: Number
raceName: Races: *
className: Classes: *

Add Character

During

Add Character

Goergies Blueboots Swengkl
100005

[LOGOUT](#)

Character Creation Form

* indicates required

Character ID: 100016
charName: *

dexterity: Number

constitution: 2 21

intelligence: Num 1

strength: 334

charisma:

wisdom:

weightLimit: *

currentWeight:

totalXP: *

raceName: *

className: *

[Add Character](#)

After

Player

Goergies Blueboots
Swengkl
100005

[ADD](#)

[LOGOUT](#)

Character Search

Character whose is
 contains in their

[Search](#) [Clear](#)

Characters

Select charID	charName	dexterity	constitution	intelligence	strength	charisma	wisdom	weightLimit	currentWeight	totalXP	raceName	raceDesc	className	classDesc	lv	overencumber
<input checked="" type="radio"/> 100016	Candace Beezy	13	2	0	20	0	0	1	0	123456	Human	Homo sapiens.	Rogue	A stealthy scoundrel.	130	
<input type="radio"/> 100011	Evil Stevil	5	12	12	16	14	9	105	44	2756	Human	Homo sapiens.	Rogue	A stealthy scoundrel.	4 0	
<input type="radio"/> 100007	Jimmy Johns	14	7	4	5	20	8	210	119	67031	Gnome	Tiny & energetic.	Sorcerer	A gifted spellcaster.	100	
<input type="radio"/> 100014	Lady Firebreath	12	10	13	5	10	18	120	157	23010	Dragonborn	Humanoid dragons.	Paladin	A holy warrior.	7 1	
<input type="radio"/> 100015	Lucy Fir	11	11	16	17	13	7	165	39	120	Tiefling	Devilish.	Warlock	A magic wielder with a supernatural bargain.	1 0	
<input checked="" type="radio"/> 100009	Patricia Petunia	7	18	16	15	19	4	225	201	2756	Halfling	Little guys & gals.	Monk	A master of martial arts.	4 0	

[View Details](#) [Delete](#)

DELETE:

Before

Player	Characters
Georges Blueboots Swengkl 100005	<p><input checked="" type="radio"/> 100007 Belac Sprinkles 147 4 5 208 210 119 67031 Gnome Tiny & energetic. Sorcerer A gifted spellcaster. 100</p> <p><input type="radio"/> 100011 Evil Stevil 5 12 12 16 149 10544 2756 Human Homo sapiens. Rogue A stealthy scoundrel. 4 0</p> <p><input type="radio"/> 100014 Lady Firebreath 12 10 13 5 10 18 120 157 23010 Dragonborn Humanoid dragons. Paladin A holy warrior. 7 1</p> <p><input type="radio"/> 100015 Lucy Fir 11 11 16 17 137 16539 120 Tiefling Devilish. Warlock A magic wielder with a supernatural bargain. 1 0</p> <p><input type="radio"/> 100013 Ms Orc 197 12 6 109 300 178 2756 Half-Orc Kind of an orc. Bard An inspiring magician. 4 0</p> <p><input type="radio"/> 100009 Patricia Petunia 7 18 16 15 194 225 201 2756 Halfling Little guys & gals. Monk A master of martial arts. 4 0</p> <p><input type="radio"/> 100010 Patrich Yodar 3 13 12 11 205 300 178 253 Gnome Tiny & energetic. Bard An inspiring magician. 1 0</p> <p><input type="radio"/> 100012 Sullivan the Frog 149 9 11 114 165 210 85441 Elf Magical graceful people. Wizard A scholarly magic user. 11 1</p>
ADD	View Details Delete
SORT BY: Character ▾	
LOGOUT	

During

Characters
<input type="radio"/> 100007 Belac Sprinkles 147 4 5 208 210 119 67031 Gnome Tiny & energetic. Sorcerer A gifted spellcaster. 100
<input type="radio"/> 100011 Evil Stevil 5 12 12 16 149 10544 2756 Human Homo sapiens. Rogue A stealthy scoundrel. 4 0
<input type="radio"/> 100014 Lady Firebreath 12 10 13 5 10 18 120 157 23010 Dragonborn Humanoid dragons. Paladin A holy warrior. 7 1
<input type="radio"/> 100015 Lucy Fir 11 11 16 17 137 16539 120 Tiefling Devilish. Warlock A magic wielder with a supernatural bargain. 1 0
<input checked="" type="radio"/> 100013 Ms Orc 197 12 6 109 300 178 2756 Half-Orc Kind of an orc. Bard An inspiring magician. 4 0
<input type="radio"/> 100009 Patricia Petunia 7 18 16 15 194 225 201 2756 Halfling Little guys & gals. Monk A master of martial arts. 4 0
<input type="radio"/> 100010 Patrich Yodar 3 13 12 11 205 300 178 253 Gnome Tiny & energetic. Bard An inspiring magician. 1 0
<input type="radio"/> 100012 Sullivan the Frog 149 9 11 114 165 210 85441 Elf Magical graceful people. Wizard A scholarly magic user. 11 1

After

Player	Characters
Georges Blueboots Swengkl 100005	<p><input type="radio"/> 100011 Evil Stevil 5 12 12 16 149 10544 2756 Human Homo sapiens. Rogue A stealthy scoundrel. 4 0</p> <p><input checked="" type="radio"/> 100007 Jimmy Johns 147 4 5 208 210 119 67031 Gnome Tiny & energetic. Sorcerer A gifted spellcaster. 100</p> <p><input type="radio"/> 100014 Lady Firebreath 12 10 13 5 10 18 120 157 23010 Dragonborn Humanoid dragons. Paladin A holy warrior. 7 1</p> <p><input type="radio"/> 100015 Lucy Fir 11 11 16 17 137 16539 120 Tiefling Devilish. Warlock A magic wielder with a supernatural bargain. 1 0</p> <p><input type="radio"/> 100009 Patricia Petunia 7 18 16 15 194 225 201 2756 Halfling Little guys & gals. Monk A master of martial arts. 4 0</p> <p><input type="radio"/> 100010 Patrich Yodar 3 13 12 11 205 300 178 253 Gnome Tiny & energetic. Bard An inspiring magician. 1 0</p> <p><input type="radio"/> 100012 Sullivan the Frog 149 9 11 114 165 210 85441 Elf Magical graceful people. Wizard A scholarly magic user. 11 1</p>
ADD	View Details Delete
SORT BY: Character ▾	
LOGOUT	

UPDATE:

Before

Character Details

Player ID: 100005
Character ID: 100007

[LOGOUT](#)

Belac Sprinkles

charID	charName	dexterity	constitution	intelligence	strength	charisma	wisdom	weightLimit	currentWeight	totalXP	raceName	raceDesc	className	classDesc	lv	overencumber
100007	Belac Sprinkles	14	7	4	5	20	8	210	119	67031	Gnome	Tiny & energetic.	Sorcerer	A gifted spellcaster.	100	

Edit Character

charName: Belac Sprinkles
dexterity: 14
constitution: 7
intelligence: 4
strength: 5
charisma: 20
wisdom: 8
weightLimit: 210
currentWeight: 119
totalXP: 67031
raceName: Gnome
className: Sorcerer

[Submit Edits](#)

During

Edit Character

charName:
dexterity: 14
constitution: 7
intelligence: 4
strength: 5
charisma: 20
wisdom: 8
weightLimit: 210
currentWeight: 119
totalXP: 67031
raceName: Gnome
className: Sorcerer

[Submit Edits](#)

After

Character Details

Player ID: 100005
Character ID: 100007

[LOGOUT](#)

Jimmy Johns

charID	charName	dexterity	constitution	intelligence	strength	charisma	wisdom	weightLimit	currentWeight	totalXP	raceName	raceDesc	className	classDesc	lv	overencumber
100007	Jimmy Johns	14	7	4	5	20	8	210	119	67031	Gnome	Tiny & energetic.	Sorcerer	A gifted spellcaster.	100	

Edit Character

charName: Jimmy Johns
dexterity: 14
constitution: 7
intelligence: 4
strength: 5
charisma: 20
wisdom: 8
weightLimit: 210
currentWeight: 119
totalXP: 67031
raceName: Gnome
className: Sorcerer

[Submit Edits](#)

Selection:

Before

Character Search

Character whose charID is greater than 10
 contains in their charName

charID	charName	dexterity	constitution	intelligence	strength	charisma	wisdom	weightLimit	currentWeight	totalXP	raceName	raceDesc	className	classDesc	lv	overencumber
100016	Candace Beezy	13	2	0	20	0	0	1	0	123456	Human	Homo sapiens.	Rogue	A stealthy scoundrel.	130	
100011	Evil Stevil	5	12	12	16	14	9	105	44	2756	Human	Homo sapiens.	Rogue	A stealthy scoundrel.	4 0	
100007	Jimmy Johns	14	7	4	5	20	8	210	119	67031	Gnome	Tiny & energetic.	Sorcerer	A gifted spellcaster.	100	
100014	Lady Firebreath	12	10	13	5	10	18	120	157	23010	Dragonborn	Humanoid dragons.	Paladin	A holy warrior.	7 1	
100015	Lucy Fir	11	11	16	17	13	7	165	39	120	Tiefling	Devilish.	Warlock	A magic wielder with a supernatural bargain.	1 0	
100009	Patricia Petunia	7	18	16	15	19	4	225	201	2756	Halfling	Little guys & gals.	Monk	A master of martial arts.	4 0	

During

Character Search

Character whose strength is greater than 10
 contains e in their charName

charID	charName	dexterity	constitution	intelligence	strength	charisma	wisdom	weightLimit	currentWeight	totalXP	raceName	raceDesc	className	classDesc	lv	overencumber
100016	Candace Beezy	13	2	0	20	0	0	1	0	123456	Human	Homo sapiens.	Rogue	A stealthy scoundrel.	130	
100011	Evil Stevil	5	12	12	16	14	9	105	44	2756	Human	Homo sapiens.	Rogue	A stealthy scoundrel.	4 0	
100007	Jimmy Johns	14	7	4	5	20	8	210	119	67031	Gnome	Tiny & energetic.	Sorcerer	A gifted spellcaster.	100	
100014	Lady Firebreath	12	10	13	5	10	18	120	157	23010	Dragonborn	Humanoid dragons.	Paladin	A holy warrior.	7 1	
100015	Lucy Fir	11	11	16	17	13	7	165	39	120	Tiefling	Devilish.	Warlock	A magic wielder with a supernatural bargain.	1 0	
100009	Patricia Petunia	7	18	16	15	19	4	225	201	2756	Halfling	Little guys & gals.	Monk	A master of martial arts.	4 0	

After

Character Search

Character whose charID is greater than 10
 contains e in their charName

charID	charName	dexterity	constitution	intelligence	strength	charisma	wisdom	weightLimit	currentWeight	totalXP	raceName	raceDesc	className	classDesc	lv	overencumber
100016	Candace Beezy	13	2	0	20	0	0	1	0	123456	Human	Homo sapiens.	Rogue	A stealthy scoundrel.	130	
100011	Evil Stevil	5	12	12	16	14	9	105	44	2756	Human	Homo sapiens.	Rogue	A stealthy scoundrel.	4 0	
100009	Patricia Petunia	7	18	16	15	19	4	225	201	2756	Halfling	Little guys & gals.	Monk	A master of martial arts.	4 0	

Projection:

Before

Debug Page

BACK

Reset the entire database

Reset and Create Database

Populate the database with default values

Add Default Values

View Table

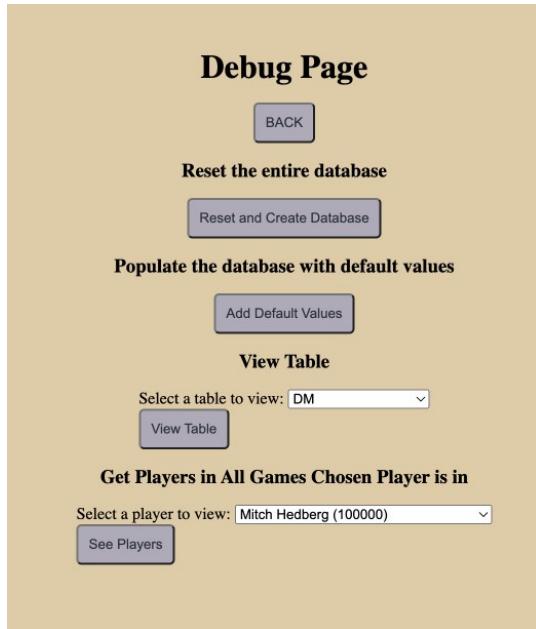
Select a table to view: DM

View Table

Get Players in All Games Chosen Player is in

Select a player to view: Mitch Hedberg (100000)

See Players



During

View Table

Select a table to view: AfflictedBy

View Table

Debug Page

BACK

Reset the entire database

Reset and Create Database

Populate the database with default values

Add Default Values

View Table

Select a table to view: DM

View Table

AfflictedBy

Projection Attributes

playerID charID effectName startTime endTime

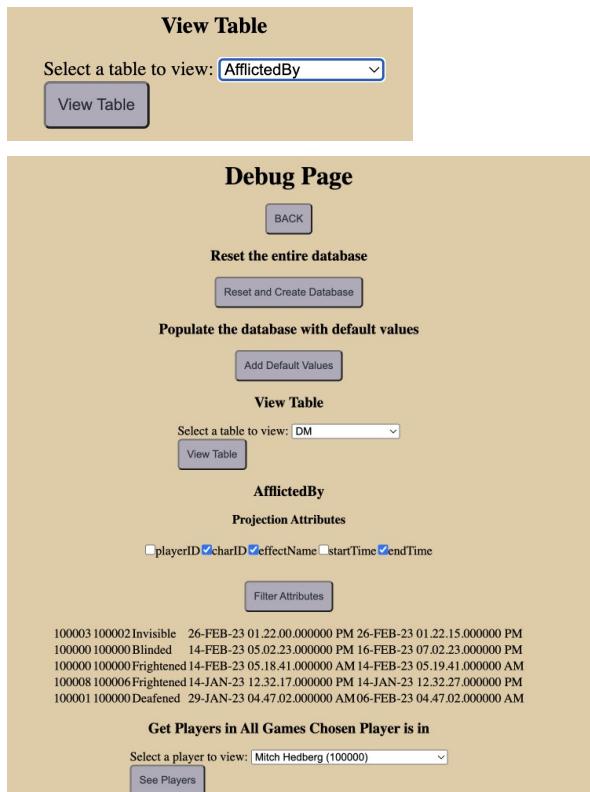
Filter Attributes

100003 100002 Invisible 26-FEB-23 01.22.00.000000 PM 26-FEB-23 01.22.15.000000 PM
100000 100000 Blinded 14-FEB-23 05.02.23.000000 PM 16-FEB-23 07.02.23.000000 PM
100000 100000 Frightened 14-FEB-23 05.18.41.000000 AM 14-FEB-23 05.19.41.000000 AM
100008 100006 Frightened 14-JAN-23 12.32.17.000000 PM 14-JAN-23 12.32.27.000000 PM
100001 100000 Deafened 29-JAN-23 04.47.02.000000 AM 06-FEB-23 04.47.02.000000 AM

Get Players in All Games Chosen Player is in

Select a player to view: Mitch Hedberg (100000)

See Players



After

Debug Page

[BACK](#)

Reset the entire database

[Reset and Create Database](#)

Populate the database with default values

[Add Default Values](#)

View Table

Select a table to view: DM

[View Table](#)

AfflictedBy

Projection Attributes

playerID charID effectName startTime endTime

[Filter Attributes](#)

```
100003 100002 Invisible 26-FEB-23 01:22:00.000000 PM 26-FEB-23 01:22:15.000000 PM
100000 100000 Blinded 14-FEB-23 05:02:23.000000 PM 16-FEB-23 07:02:23.000000 PM
100000 100000 Frightened 14-FEB-23 05:18:41.000000 AM 14-FEB-23 05:19:41.000000 AM
100008 100006 Frightened 14-JAN-23 12:32:17.000000 PM 14-JAN-23 12:32:27.000000 PM
100001 100000 Deafened 29-JAN-23 04:47:02.000000 AM 06-FEB-23 04:47:02.000000 AM
```

Get Players in All Games Chosen Player is in

Select a player to view: Mitch Hedberg (100000)

[See Players](#)

Join:

Before

D&D DATABASE

Welcome, adventurers. First time?

Player Login
Player ID:

Dungeon Master Login
Dungeon Master ID:



Adventure hinges on more than just a throw of the dice..

During

Player Login

Player ID:

After

Player		Character Search																	
Goergies Blueboots Swengkl		Character whose charID is greater than <input type="text"/> AND contains <input type="text"/> in their charName																	
100005		Search Clear																	
<input type="button" value="ADD"/>		Characters																	
<input type="button" value="LOGOUT"/>		Select charID, charName, dexterity, constitution, intelligence, strength, charisma, wisdom, weightLimit, currentWeight, totalXP, raceName, raceDesc, classDesc, className, classDesc, lv, overencumber																	
<input type="radio"/>	100016 Candace Beezy	13	2	0	20	0	0	1	0	123456	Human Homo sapiens.	Rogue	A stealthy scoundrel.	130					
<input type="radio"/>	100011 Evil Stevil	5	12	12	16	14	9	105	44	2756	Human Homo sapiens.	Rogue	A stealthy scoundrel.	40					
<input type="radio"/>	100007 Jimmy Johns	14	7	4	5	20	8	210	119	67031	Gnome Tiny & energetic	Sorcerer	A gifted spellcaster.	100					
<input type="radio"/>	100014 Lady Firebreath	12	10	13	5	10	18	120	157	23010	Dragonborn Humanoid dragons.	Paladin	A holy warrior.	71					
<input type="radio"/>	100015 Lucy Fir	11	11	16	17	13	7	165	39	120	Tiefling Devilish.	Warlock	A magic wielder with a supernatural bargain.	10					
<input checked="" type="radio"/>	100009 Patricia Petunia	7	18	16	15	19	4	225	201	2756	Halfling Little guys & gals.	Monk	A master of martial arts.	40					

Aggregation with Group By:

Before

DM	Games
Jane Doe	10003 The Crazy Wizard 02-NOV-15 10005 The Weird Adventure 28-FEB-23 10006 The Biggest Lollipop in the Entire World (and its free) 14-FEB-22 10007 One Hundred Septillion Bad Guys 19-NOV-17 10008 Giant Bees VS A Tiny Me 05-APR-01
10000	
Find the Maximum ✓ dexterity ✓ in each game with at least 2 characters	
See Statistics	
Find the Maximum ✓ across all characters with dexterity ✓ > ✓ 0 ✓ in each game	
See Statistics	
Find the number of characters in each game who are afflicted with Blinded ✓	
See Statistics	
LOGOUT	

During

Find the
Average ✓ dexterity ✓
in each game with at least 2 characters
See Statistics

After

DM	Games
Jane Doe	10003 The Crazy Wizard 02-NOV-15 10005 The Weird Adventure 28-FEB-23 10006 The Biggest Lollipop in the Entire World (and its free) 14-FEB-22 10007 One Hundred Septillion Bad Guys 19-NOV-17 10008 Giant Bees VS A Tiny Me 05-APR-01
10000	
Find the Average ✓ dexterity ✓ in each game with at least 2 characters	
See Statistics	
Find the Maximum ✓ across all characters with dexterity ✓ > ✓ 0 ✓ in each game	
See Statistics	
Find the number of characters in each game who are afflicted with Blinded ✓	
See Statistics	
LOGOUT	

Aggregation with Having:

Before

DM

Jane Doe
10000

Find the
Maximum dexterity
in each game with at least 2 characters
[See Statistics](#)

Find the
Maximum
across all characters with
dexterity > 0
in each game
[See Statistics](#)

Find the number of characters in each game who are afflicted with
Blinded
[See Statistics](#)

LOGOUT

Games

10003 The Crazy Wizard	02-NOV-15
10005 The Weird Adventure	28-FEB-23
10006 The Biggest Lollipop in the Entire World (and its free)	14-FEB-22
10007 One Hundred Septillion Bad Guys	19-NOV-17
10008 Giant Bees VS A Tiny Mc	05-APR-01

During

Find the
Maximum
across all characters with
dexterity > 5
in each game
[See Statistics](#)

After

DM

Jane Doe
10000

Find the
Maximum dexterity
in each game with at least 2 characters
[See Statistics](#)

Find the
Maximum
across all characters with
dexterity > 0
in each game
[See Statistics](#)

Find the number of characters in each game who are afflicted with
Blinded
[See Statistics](#)

LOGOUT

Games

10003 The Crazy Wizard	02-NOV-15
10005 The Weird Adventure	28-FEB-23
10006 The Biggest Lollipop in the Entire World (and its free)	14-FEB-22
10007 One Hundred Septillion Bad Guys	19-NOV-17
10008 Giant Bees VS A Tiny Mc	05-APR-01

MAX of All Characters With dexterity > 5 in Each Game

Game	Count
Giant Bees VS A Tiny Mc	19
One Hundred Septillion Bad Guys	19
The Biggest Lollipop in the Entire World (and its free)	19
The Crazy Wizard	19
The Weird Adventure	19

Nested Aggregation with Group By:

Before

DM	Games
Jane Doe	10003 The Crazy Wizard 02-NOV-15 10005 The Weird Adventure 28-FEB-23 10006 The Biggest Lollipop in the Entire World (and its free) 14-FEB-22 10007 One Hundred Septillion Bad Guys 19-NOV-17 10008 Giant Bees VS A Tiny Me 05-APR-01
10000	
Find the Maximum <input type="text"/> dexterity <input type="text"/> in each game with at least 2 characters	
See Statistics	
Find the Maximum <input type="text"/> across all characters with dexterity <input type="text"/> > <input type="text"/> 0 <input type="text"/> in each game	
See Statistics	
Find the number of characters in each game who are afflicted with Blinded <input type="text"/> See Statistics	
LOGOUT	

During

Find the number of characters in each game who are afflicted with
Deafened <input type="text"/>
See Statistics

After

DM	Games
Jane Doe	10003 The Crazy Wizard 02-NOV-15 10005 The Weird Adventure 28-FEB-23 10006 The Biggest Lollipop in the Entire World (and its free) 14-FEB-22 10007 One Hundred Septillion Bad Guys 19-NOV-17 10008 Giant Bees VS A Tiny Me 05-APR-01
10000	
Find the Maximum <input type="text"/> dexterity <input type="text"/> in each game with at least 2 characters	
See Statistics	
Find the Maximum <input type="text"/> across all characters with dexterity <input type="text"/> > <input type="text"/> 0 <input type="text"/> in each game	
See Statistics	
Find the number of characters in each game who are afflicted with Deafened <input type="text"/> See Statistics	
LOGOUT	

Division:

Before

Debug Page

[BACK](#)

Reset the entire database

[Reset and Create Database](#)

Populate the database with default values

[Add Default Values](#)

View Table

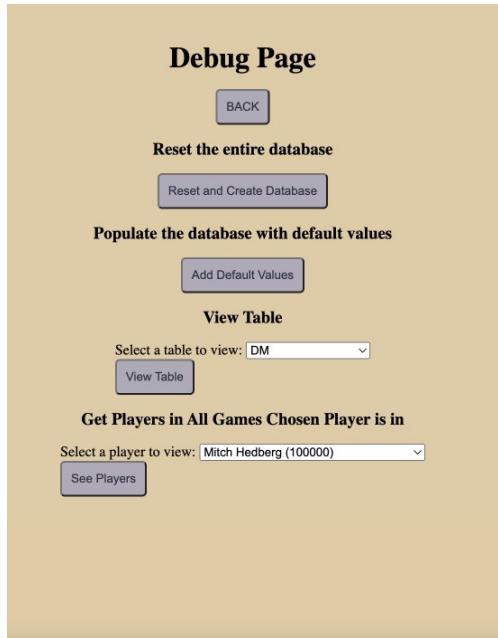
Select a table to view: DM

[View Table](#)

Get Players in All Games Chosen Player is in

Select a player to view: Mitch Hedberg (100000)

[See Players](#)

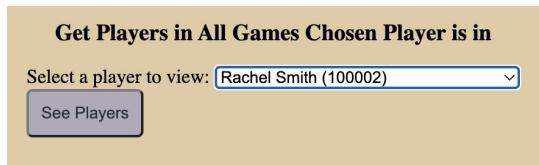


During

Get Players in All Games Chosen Player is in

Select a player to view: Rachel Smith (100002)

[See Players](#)



After

Debug Page

[BACK](#)

Reset the entire database

[Reset and Create Database](#)

Populate the database with default values

[Add Default Values](#)

View Table

Select a table to view: DM

[View Table](#)

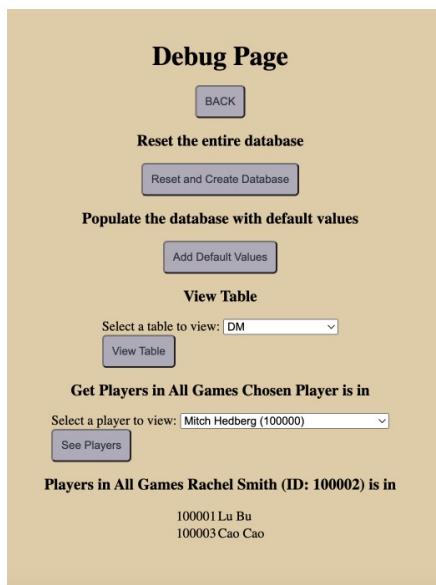
Get Players in All Games Chosen Player is in

Select a player to view: Mitch Hedberg (100000)

[See Players](#)

Players in All Games Rachel Smith (ID: 100002) is in

100001 Lu Bu
100003 Cao Cao



Other:

IMPORTANT EXTRA BITS!!

- Demo rubric has 2 pt category called “Basic Security Practices”: Values from the user are not directly used in the database. Basic security practices have been followed.
 - <https://piazza.com/class/lcfob0rgtel508/post/639>
- Also has “Basic Error Handling” (2 pts): The user receives notifications about user errors such as trying to insert a duplicate value, invalid input (e.g., invalid characters or an int when only strings are allowed etc.), etc.
- Also has “General Queries” (2 pts): Queries are designed to only return the data that is needed and in the right order if required. The client does not do any processing of the data such as filtering/sorting etc.
- Also has “User Friendliness (3 pts): The application is designed for someone who has no knowledge of Computer Science. The interaction and required inputs are reasonable for a non-Computer Scientists (e.g., the user is not required to input a condition such as attributeName <op> value to do a search). The application is designed in a way that is reasonable for users (e.g., having everything on a really long page is not reasonable).
- Also has “General: User Notification” (2 pts): The user will receive a success or failure notification upon the completion of an insert, update, delete action and will have a way to verify the action's effect on the database.
 - <https://piazza.com/class/lcfob0rgtel508/post/629>
- Your queries should give you the data required without any extraneous information I.e., we do not want you to have your application parse through (and strip down) the returned SQL query results.
- Every SQL query must have one or more host variables as part of the expression (e.g., :empNum in the expression WHERE empID = :empNum), so that the condition is specified at run time when the user enters the value. In other words, do not “hard code” your queries in your code. Instead, allow for user input by letting the user enter (type in) some of the values to be searched for, or use a drop-down box, or buttons, etc. to allow the user to select from a few values. Any of these will provide a better user experience, and a more realistic, flexible, and dynamic application.

Rubric Checklist (23 points total)

- Cover page (0.5 pts)
- Repository Link: submitted and contains all code and deliverables (0.5 pts)
- SQL script to create all tables and data in database (2 pts)
 - SQL DDL and INSERT statements submitted for full marks
- Project Description (2 pts)
 - Shorthand description of the final project and what it accomplished in a PDF. Description must address the topic in a detailed manner for full marks.

- **Project Description: Schema Changes (2 pts)**
 - A description of how your final schema differed from the schema you turned in. If the final schema differed, explain why. Must have error free, detailed justifications for changes to receive full marks.
- **Project Description: Schema Data Screenshots (3 pts)**
 - A copy of the schema and screenshots that show what data is present in each relation after the SQL initialization script is run. Must include everything for full marks.
- **Queries: INSERT (0.5 pts)**
 - The query is clearly listed and there is a reference to where the TA can find the implementation of this query in the code. Screenshots have been provided to demonstrate the functionality of this query. The operation meets the requirements laid out in the project documentation.
 - The user should be able to specify what values to insert. The insert operation should affect more than one table (i.e., an insert should occur on a table with a foreign key). The chosen query and table(s) should make sense given the context of the application.
 - The tables that the insert operation will run on can be pre-chosen by the group.
- **Queries: DELETE (0.5 pts)**
 - Same as prior
 - Implement a cascade-on-delete situation (or an alternative that was agreed to by the TA if the DB system doesn't provide this). The user should be able to choose what values to delete. The tables that the delete operation will run on can be chosen by the group. The chosen query and table(s) should make sense given the context of the application.
- **Queries: UPDATE (1 pt)**
 - Same as prior.
 - The user should be able to specify whichever value(s) to update (i.e., any number of values in one or more columns). The group can choose which table to run this query on. The chosen query and table(s) should make sense given the context of the application.
- **Queries: Selection (1 pt)**
 - Same as prior.
 - The user is able to specify the filtering conditions for a given table. That is, the user is able to determine what shows up in the WHERE clause.
 - The group can choose which table to run this query on. The query and chosen table(s) should make sense given the context of the application.
- **Queries: Projection (1 pt)**
 - Same as prior.
 - The user is able to choose any number of attributes to view from any relation in the database. Non-selected attributes must not appear in the result. One or more tables in the relation must contain at least four attributes.
- **Queries: Join (1 pt)**
 - Same as prior
 - Create one query in this category, which joins at least 2 tables and performs a meaningful query, and provide an interface for the user to execute this query. The user

must provide at least one value to qualify in the WHERE clause (e.g. join the Customer and the Transaction table to find the names and phone numbers of all customers who have purchased a specific item). The group can choose which tables will be affected by the query. The query and chosen table(s) should make sense given the context of the application.

- Queries: Aggregation with Group By (1 pt)
 - Same as prior
 - Create one query that requires the use of aggregation (min, max, average, or count are all fine), and provide an interface (e.g., HTML button/dropdown, etc.) for the user to execute this query. The group can choose which table to run this query on. The query and chosen table(s) should make sense given the context of the application.
- Queries: Aggregation with Having (1 pt)
 - Same as prior
 - Create one meaningful query that requires the use of a HAVING clause, and provide an interface (e.g., HTML button/dropdown, etc.) for the user to execute this query.
 - The query and chosen table(s) should make sense given the context of the application.
- Queries: Nested Aggregation with Group By (1 pt)
 - Same as prior
 - Create one query that finds some aggregated value for each group (e.g., use a nested subquery, such as finding the average number of items purchased per customer, subject to some constraint). Some examples for the Sailors table are given in the project specs. Note the difference between this query and the above Aggregation Query. You must use separate distinct queries for this criterion and the Aggregation Query (i.e., do not double dip).
 - It is fine to use a view to get the desired behaviour.
 - The query and chosen table(s) should make sense given the context of the application.
- Queries: Division (1 pt)
 - Same as prior
 - Create one query of this category and provide an interface (i.e., HTML button, etc.) for the user to execute this query (e.g., find all the customers who bought all the items).
 - The query and chosen table(s) should make sense given the context of the application.
- Screenshots of query results (3 pts)
 - Screenshots of the sample output of the queries using the GUI (for example, you can show what data is in your table before you run the query, and then show another screenshot after running the query, from some kind of GUI input like a button).
 - You need only to include screenshots for the required queries – if you implemented more than what was required, screenshots are not needed for those extra queries.
- README (1 pt)
 - A README.txt file that contains information that has not been included in your other project deliverables. In the event that there is no "extra" information to include in this file, you can submit a txt file that says "No extra information".