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CS 340 Project

Outline

The database is designed for a computer game where there are multiple players on multiple worlds. In addition, players have jobs and items that can change fairly frequently. In this imaginary game I imagine player being able to go from one world to another, taking world exclusive items with them. Essentially creating a universal trade as players exchange/sell items from one world to another. Besides some items being world specific, there are also job specific item. This means that even if a play has an item, they may not be able to use, further increasing the likelihood of the items spreading as players travel.

Database Outline in Words

Players have names as well as different species (since there are multiple worlds), they have a relationship with jobs and worlds and items. Since player have jobs, are on a world, and carry items.

Jobs – jobs have specialization skills and possible level ups(promotions?), have a close relationship with players and items, as both can be associated with 1 job.

Worlds – different worlds have different climates (wet, dry, cold, …), it has a close relationship with both the players and the items, as players are found on a world and items are made by a world.

Items – items have names, classes, and levels, and jobs. Each item can only have at most 1 job. However, item types can either world specific or general. In addition item can be carried by anyone (even if they don't have the job class the item requires).

Players can have 1 job, but many players can have the same job (players all start out uncategorized (none)).

Players are on 1 world, where worlds can hold many people. This is not their home world, this is the world they are currently on (like a server) so is volatile.

Some items belong to many worlds because those items are basic enough to be found on multiple worlds. While at the same time some items are world specialties.

All jobs have specific items.

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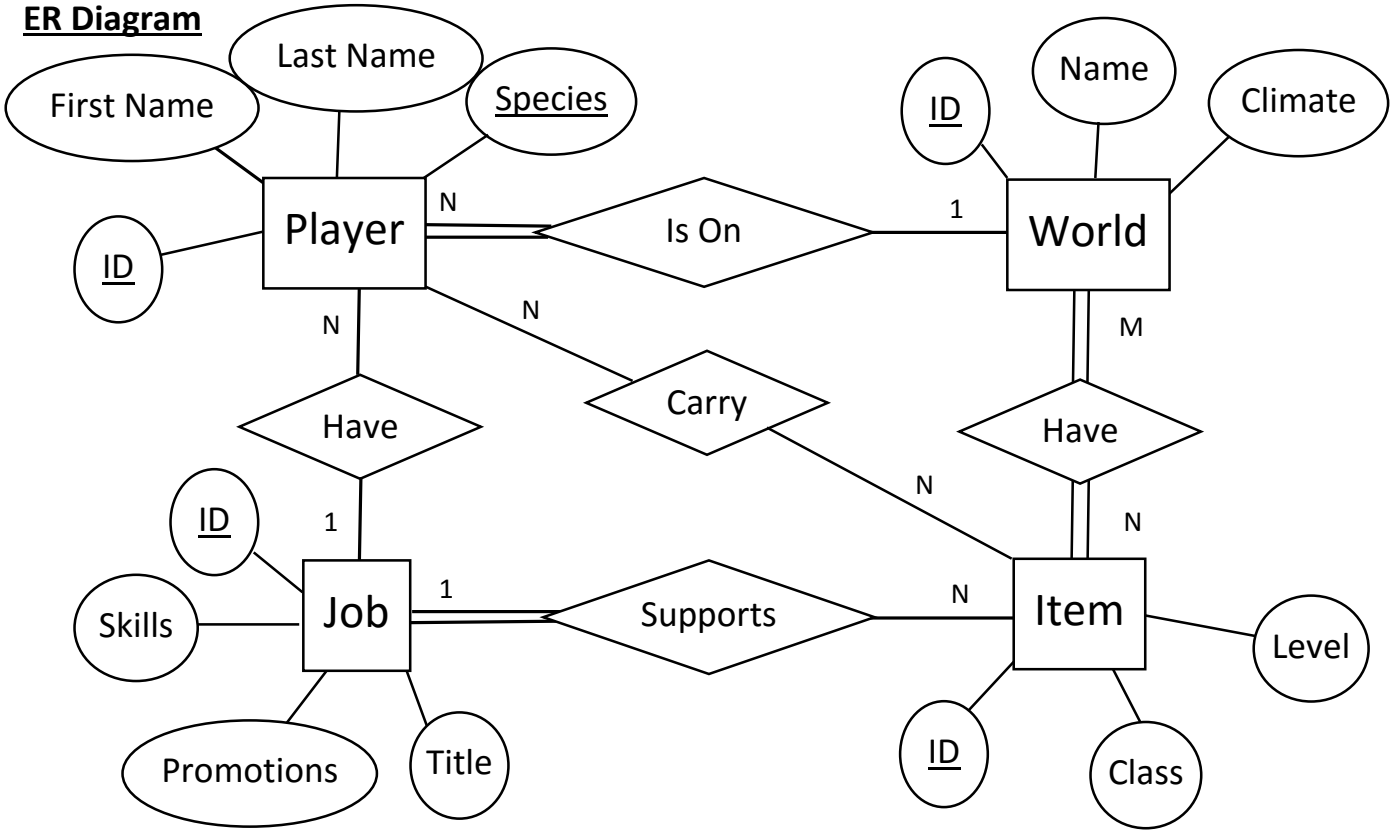
ER Diagram



Schema

Player

ID	First Name	Last Name	Species	WID	JID

World

ID	Name	Climate

Job

ID	Title	Skills	Promotions

Item

ID	Class	Level	JID

World Item

IID	WID

Player Item

PID	IID	ID

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Table Creation Queries

```
SET FOREIGN_KEY_CHECKS = 0;
DROP TABLE IF EXISTS `player`;
DROP TABLE IF EXISTS `job`;
DROP TABLE IF EXISTS `world`;
DROP TABLE IF EXISTS `item`;
DROP TABLE IF EXISTS `world_item`;
DROP TABLE IF EXISTS `player_item`;
SET FOREIGN_KEY_CHECKS = 1;

CREATE TABLE `job` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `title` varchar(255) NOT NULL UNIQUE,
  `skills` TEXT,
  `levels` TEXT,
  PRIMARY KEY (`id`)
);

CREATE TABLE `world` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `name` varchar(255) NOT NULL UNIQUE,
  `climate` varchar(255) NOT NULL,
  PRIMARY KEY (`id`)
);

CREATE TABLE `item` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `name` varchar(255) NOT NULL UNIQUE,
  `class` varchar(255),
  `level` int(11) DEFAULT '1',
  `jid` int(11),
  PRIMARY KEY (`id`),
  FOREIGN KEY (`jid`) REFERENCES `job`(`id`)
);

CREATE TABLE `world_item`(
  `wid` int(11) NOT NULL DEFAULT '0',
  `iid` int(11) NOT NULL DEFAULT '0',
  PRIMARY KEY (`wid`,`iid`),
  FOREIGN KEY (`wid`) REFERENCES `world`(`id`),
  FOREIGN KEY (`iid`) REFERENCES `item`(`id`)
);
```

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```
CREATE TABLE `player` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `first_name` varchar(255) NOT NULL,
  `last_name` varchar(255) NOT NULL,
  `jid` int(11) NOT NULL DEFAULT '1',
  `wid` int(11) NOT NULL DEFAULT '1',
  `species` varchar(255),
  PRIMARY KEY (`id`),
  CONSTRAINT uq_name UNIQUE (`first_name`, `last_name`),
  FOREIGN KEY (`jid`) REFERENCES `job`(`id`),
  FOREIGN KEY (`wid`) REFERENCES `world`(`id`)
);

CREATE TABLE `player_item`(
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `pid` int(11) NOT NULL DEFAULT '0',
  `iid` int(11) NOT NULL DEFAULT '0',
  PRIMARY KEY (`id`),
  FOREIGN KEY (`pid`) REFERENCES `player`(`id`),
  FOREIGN KEY (`iid`) REFERENCES `item`(`id`)
);

INSERT INTO world(name, climate) VALUES ("None", "varies");
INSERT INTO world(name, climate) VALUES ("Clip", "dry");
INSERT INTO world(name, climate) VALUES ("Glup","wet");
INSERT INTO world(name, climate) VALUES ("Oxe","moderate");
INSERT INTO job(title, skills, levels) VALUES ("none","","anything");
INSERT INTO job(title, skills, levels) VALUES ("archer","bow","scout");
INSERT INTO job(title, skills, levels) VALUES ("farmer","planting, and plant identification","");
INSERT INTO job(title, skills, levels) VALUES ("hunter","","");
INSERT INTO item(name, class, level, jid) VALUES ("bone knife","basic",2, 1);
INSERT INTO item(name, class, level, jid) VALUES ("plow","tool", 1, 3);
INSERT INTO item(name, class, level, jid) VALUES ("bow","super",34, 2);
INSERT INTO player(first_name, last_name, jid, wid, species) VALUES ("Jess","Cri",1,1, NULL);
INSERT INTO player(first_name, last_name, jid, wid, species) VALUES ("Thunder","Hill",3,2, "Mer");
INSERT INTO player(first_name, last_name, jid, wid, species) VALUES ("Po","Ret",3,3, NULL);
INSERT INTO world_item(wid, iid) VALUES (2, 1);
INSERT INTO world_item(wid, iid) VALUES (2, 3);
INSERT INTO world_item(wid, iid) VALUES (4, 2);
INSERT INTO player_item(pid, iid) VALUES (2, 1);
INSERT INTO player_item(pid, iid) VALUES (2, 3);
INSERT INTO player_item(pid, iid) VALUES (3, 2);
INSERT INTO player_item(pid, iid) VALUES (3, 1);
```

```
INSERT INTO player_item(pid, iid) VALUES (1, 3);
INSERT INTO player_item(pid, iid) VALUES (3, 3);
```

General Use Queries

```
SELECT id, title FROM job;
SELECT id, name FROM world;
INSERT INTO player(first_name, last_name, jid, wid, species) VALUES ([[fname],[lname],[job
    Id],[world id],[speciesName/desc]);
SELECT player.id, player.jid, player.wid, player.species FROM player WHERE first_name=[fname]
    AND last_name=[lname];
UPDATE player SET jid = [jobID], wid = [worldID], species = [speciesName/desc] WHERE id =
    [from Select above];
DELETE FROM player WHERE first_name=[fname] AND last_name=[lname];
INSERT INTO player_item(pid, iid) VALUES ([playerId],[ItemId]);
SELECT id FROM player_item WHERE pid=[playerId] AND iid=[itemId];
DELETE FROM player_item WHERE id=[player_itemId]
INSERT INTO job(title, skills, levels) VALUES ([jobTitle],[givenSkills],[promotions]);
SELECT skills, levels FROM job WHERE title=[name of job];
UPDATE job SET skills = [given skills], levels = [given level] WHERE title = [name of job];
DELETE FROM job WHERE title=[name of job];
INSERT INTO world(name, climate) VALUES ([world name],[given climate]);
UPDATE world SET climate = [given climate] WHERE name = [world name];
DELETE FROM world WHERE name=[world name];
SELECT id, name FROM item;
INSERT INTO item(name, class, level, jid) VALUES ([itemName],[given class],[numeric level], [job
    id]);
SELECT class, level, jid FROM item WHERE name=[itemName];
UPDATE item SET class = [given class], level = [numeric level], jid = [jobID] WHERE name =
    [itemName];
DELETE FROM item WHERE name=[itemName];
INSERT INTO world_item(wid, iid) VALUES ([worldID],[itemID]);
DELETE FROM world_item WHERE wid=[worldID] AND iid=[itemID];
SELECT title, skills, levels FROM job;
SELECT player.first_name, player.last_name, job.title, world.name, player.species
    FROM player
    INNER JOIN world ON player.wid = world.id
    INNER JOIN job ON player.jid = job.id;
SELECT player.first_name, player.last_name, job.title, world.name, player.species
    FROM player
    INNER JOIN world ON player.wid = world.id
```

```
        INNER JOIN job ON player.jid = job.id
        WHERE world.id = [worldID];
SELECT player.first_name, player.last_name, job.title, world.name, player.species
        FROM player
        INNER JOIN world ON player.wid = world.id
        INNER JOIN job ON player.jid = job.id;
SELECT player.first_name, player.last_name, job.title, world.name, player.species
        FROM player
        INNER JOIN world ON player.wid = world.id
        INNER JOIN job ON player.jid = job.id
        WHERE job.id = [jobId];
SELECT name, climate FROM world;
SELECT item.name, item.class, item.level, job.title, world.name
        FROM item
        INNER JOIN world_item ON item.id = world_item.iid
        INNER JOIN world ON world_item.wid = world.id
        INNER JOIN job ON job.id = item.jid;
SELECT item.name, item.class, item.level, world.name
        FROM item
        INNER JOIN world_item ON item.id = world_item.iid
        INNER JOIN world ON world_item.wid = world.id
        WHERE world.id = [worldID];
SELECT item.name, item.class, item.level, job.title
        FROM item
        INNER JOIN job ON item.jid = job.id;
SELECT item.name, item.class, item.level, job.title
        FROM item
        INNER JOIN job ON item.jid = job.id
        WHERE job.id = [jobID];
SELECT item.name, item.class, item.level, job.title, player.first_name, player.last_name
        FROM item
        INNER JOIN job ON job.id = item.jid
        INNER JOIN player_item ON item.jid = player_item.iid
        INNER JOIN player ON player_item.pid = player.id
        WHERE player.id = [playerId];
```