# Dungeons and Dragons Database

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### Project Outline

This is a database for many game elements for Dungeons and Dragons 5th Edition (D&D). While there are many items in the game that are out of the scope of this project, like individual weapons and armor, it does store information on the defining attributes of a D&D character. The database also keeps track of players, with whom the players play, and their characters.

### Database Outline

### The entities in our database are:

* Players -- These are the people playing our imaginary game of Dungeons and Dragons. Each player has the following attributes:
  + ID: The primary key by which we keep track of the players. This will be automatically assigned and auto-incrementing as players are added.
  + Player Name: The name of the person playing the game (as opposed to character name). This will be a string of up to 100 characters which can’t be left blank and has no default.
  + Role: Each person has one of two roles: Player or Dungeon Master (DM). It cannot be blank and defaults to player.
* Characters -- Also known as Player Characters (PC’s), these are the in-game characters controlled by the players. Each character has the following attributes:
  + ID: A number automatically assigned and auto-incrementing to serve as the primary key.
  + Character Name: The name of the character, which is a string of up to 100 characters and can’t be left blank nor does it have a default.
  + Race: The species of the character, such as human, elf, or half-orc. This is a string of up to 10 characters and will contain a Race Name from the Race entity. It cannot be left blank and there is no default.
  + Primary Class: The defining playstyle for a character, such as fighter, rogue, or wizard. It cannot be blank and there is no default. This will contain the ID of the class to which the character belongs at the start of the game. They may gain experience in other classes, but their foundation remains the same.
  + Background: Each character has a background to represent their lives before they became adventurers, whether they were soldiers, charlatans, or anything in between. This will be a string of up to 100 characters and can’t be left blank and there is no default.
* Classes -- The “type” or “profession” of the character and the thing that defines the character’s playstyle the most. Each class has the following attributes:
  + ID: A number automatically assigned and auto-incrementing to serve as the primary key.
  + Class Name: The name of the class. This is a string of up to 20 characters. It cannot be left blank and there is no default. Examples include barbarian and rogue.
  + Hit Die: The die rolled each level to determine the character’s hit points. The higher the die the more hit points the character tends to have, so the more attacks they can take in combat. This will be an int of either 6, 8, 10, or 12 for the number of sides of the die. It cannot be left blank and there is no default.
  + Armor: The heaviest armor the class can wear. It will be either light, medium, or heavy. It cannot be left blank and defaults to light.
  + Saving Throw 1: Each class has two “saving throws” tied to an attribute that helps them avoid damage or other adverse effects. This will be a string of up to 15 characters. It cannot be left blank and there is no default.
  + Saving Throw 2: The second saving throw the class has. This will be a string of up to 15 characters. It cannot be left blank and there is no default.
* Race -- The species of the character. Each race has the following attributes:
  + ID: A number automatically assigned and auto-incrementing to serve as the primary key.
  + Race Name: The named race. This is a string of up to 10 characters. It cannot be blank and there is no default. Examples include orc, elf, human, and halfling.
  + Lifespan: The average racial lifespan in years. This is an unsigned integer value. It is unsigned to allow for “immortal” designation with a value of -1. It cannot be blank, and there is no default.
  + Height: The average height for the race in meters. This is a floating point value. It cannot be left blank, and there is no default.
  + Weight: The average weight for the race in kilograms. This is a floating point value. It cannot be blank and there is no default value.
  + Speed: The average speed for the race in meters per second. This is a floating point value, and there is no default.
* Special Attributes -- Special attributes granted to races and their descriptions.
  + ID: A number automatically assigned and auto-incrementing to serve as the primary key.
  + Special Name: This is the name of the special racial attribute. It is a string of up to 50 characters. It cannot be blank, and there is no default.
  + Special Description: This is a brief description of the special attribute. It is a string of up to 255 characters. It cannot be blank.

The relationships in this database are:

* Players can have many characters -- Players may create more than one character to round off the party or for a change of pace. This is a *one-to-many* relationship as each character belongs to only one player.
* Dungeon Masters have several players -- DMs and players cannot exist without each other. This is a *one-to-many* relationship, as it is considered base treachery in this Project Universe to have more than one DM.
* Characters have classes -- Each time a character levels up, the player chooses a class in which to gain experience. A character starts with one class, but can gain others as the game goes on, so this is a *many-to-many* relationship.
* Characters have a race -- A character can have only one race, but a race can be assigned to many characters, so this is a one-to-many relationship.
* Races have special attributes -- Each race can have more than one special attribute, and it is possible that a special attribute can be assigned to more than one race. This is a many-to-many relationship.