

## Write up of the mini world

Project: Design & implement a database for a chosen domain, using MySQL RDBMS.

Chosen domain: ✕ Fantasy Game ✕

The game consists of PLAYER controlled CHARACTERS. Players access the game using their unique username, and password. Players can be identified by a unique player id.

CHARACTERS are identified by a unique character ID. Characters belong to one player and players may play as multiple characters. We keep track of a player's Class, level, experience, strength, agility, intelligence, armor class, hit points, mana, abilities, and current map coordinates. Characters have an inventory of items they have access to.

INVENTORY items are uniquely identified by their name. A character controls their inventory items. We keep track of an item's quantity in inventory and value in gold pieces. Additionally information about an item's damage, armor class bonus, and effect(s) if applicable to the item.

In order to succeed in combat against Creatures, Players can acquire ABILITIES to use. An ability is uniquely identified by its ability name. We keep track of an ability description, mana cost and whether a character knows this ability.

Characters can specialize as various character types such as Warriors, Mages and Rogues. Warriors keep track of their attack bonus, and armor bonus. Mages keep track of their known spells and magic resistance value. Rogues track their agility bonus and stealth bonus.

Characters form ADVENTURE\_PARTIES in order to take on QUESTS. A party is formed with a party leader and party name to take on a specific named quest.

A QUEST is uniquely identified by its quest name. We track a quest's description, experience bonus and rewards.

Characters are always at a single current LOCATION. We track a location with its unique area on the game world and a location description. Locations can contain a single CREATURE which characters may be interested in fighting.

CREATURES are uniquely identified by their name/type. We track a creature's strength, agility, weakness, experience value when slain, and its coordinates in a location.

### Keep in mind requirements:

- Minimum of five (5) strong entities.
  - At least one (1) multivalued attribute.
  - At least one (1) composite attribute.

- Minimum of one (1) weak entity.
- Minimum of three (3) relationships.
  - At least one (1) ternary relationship.
- Minimum of one (1) specialization.

Domain Description: A fantasy game with adventurers, monsters, magic and items.

Entities 1-5 and so on:

1. PLAYER
2. CHARACTER
3. INVENTORY
4. ABILITY
5. LOCATION

And more.

Example multivalued attribute: a character's ABILITIES

Weak entities:

1. INVENTORY

Relationships 1-3 and more:

1. PARTY FORMATION
2. CHARACTER HAS ABILITY
3. CREATURE HAS LOCATION

Ternary relationship: ADVENTURE\_PARTY: PARTIES are formed from a CHARACTER, to take on a QUEST on a LOCATION.

Specialization:

1. CHARACTER CAN SPECIALIZE AS WARRIOR, MAGE, OR ROGUE