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Description of ERD

A player must have a character and a character must belong to a player. As a player cannot do anything without a character, we have total participation on that end. As the character is dependent on player, it is a weak entity. A player can have one character or more than one character, so is denoted by a 1:N relation. Many characters engage in CombatActivities. Therefore, this is denoted by a M:N relation. CombatActivities are dependent on the presence of characters. Therefore, we have total participation on that end. A character may possess an item or more than 1 item. A character doesn't have to have an item; however, it will make it easy to engage in combat with items. So, item is not represented by a weak entity. The relation is denoted by a 1:N relation where we have total participation on the Item end. Many items (more than 1) can engage in more than 1 combat activities. For example: if a character has a weapon, this can be used in different combat activities. If an item is of a specific type, then it has more attributes. We introduce the entities: Armour and Weapon. The relation between item and these entities is represented by an ISA hierarchy as those entities will inherit all the attributes of item. So, item has specific attributes and if those items happen to be armour and weapon, they have more attributes. I decided to introduce these entities in particular because we can relate them with attack and defence score which in turn is related to combat activities.

Each player has their personal details, such as: name, Account Number, Email Address etc. These are attributes that help us to distinguish players from each other. Creation Date is added on the relation 'has' as each character must have a creation date.

A character has attributes such as: health, level and experience points, money bank. Expiry Date is added to character as an attribute as a character may have this attribute if the player unsubscribes. It is not appropriate to put it on the relation as not all characters have an expiry date. Money bank denotes the bill that the player will receive at the end of a calendar month.

An item has its general attributes such as: price, quantity, ManaScore etc. If the item is an armour or weapon, then we have specific properties associated with it. For example: Armour has 'defend score' as an attribute because armour is used to help a character defend themselves. Comparatively, weapon has 'AttackScore', and range associated with it, as a weapon is used to attack another character and range is associated with a projectile. The attribute equipped is not included as it seen as a triviality in comparison to other attributes. This is because the relation possessed considers whether they are equipped with an item or not.

A combat activity has damage and result as attributes as the whole purpose of going into combat is to see who wins and losses (result). A combat activity must have a battle number as this keeps us up to date with what battle we are currently having. During the combat activity we have an Attacker and Defender. These are denoted as multivalued attributes as we can have more than 1 player acting as an attacker or defender in a multi-player game.

E-R DIAGRAM

Defender

Attacker

Result

Damage

Battle_Date

BattleNo

CombatActivities

N — EngagesIn — M

M

Defend Score

BodyPart

Armour

Weapon

Range

AttackScore

ISA

Item

ItemName

Price

Quantity

ManaScore

Healing Score

Possess

N

1

ForeName

Surname

Account Number

Email_Address

Player

Creation_Date

has

1 — N

Character

Character_Name

Level

Health

MaxHealth

Character_Type

AttackinScore

DefenceScore

ManaScore

money_bank

ExperiencePoints