

# The EverCraft Kata

In this exercise, you will build out a domain model for a MMORPG called EverCraft for the company Blizzards of the Coast. Just follow the requirements below, pairing and test driving your code of course, and have fun.

This document and template projects for several programming languages can be found on-line at <https://github.com/PuttingTheDnDInTDD/EverCraft-Kata>.

May all your rolls be 20s.

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## Requirements

### Iteration 1 - Core

This iteration covers core functionality for leveling, combat, and character attributes.

#### Feature: Create a Character

As a character I want to have a name so that I can be distinguished from other characters

- can get and set Name

#### Feature: Alignment

As a character I want to have an alignment so that I have something to guide my actions

- can get and set alignment
- alignments are Good, Evil, and Neutral

# Feature: Armor Class & Hit Points

As a combatant I want to have an armor class and hit points so that I can resist attacks from my enemies

- has an Armor Class that defaults to 10
- has 5 Hit Points by default

# Feature: Character Can Attack

As a combatant I want to be able to attack other combatants so that I can survive to fight another day

- roll a 20 sided die (don't code the die)
- roll must meet or beat opponents armor class to hit

# Feature: Character Can Be Damaged

As an attacker I want to be able to damage my enemies so that they will die and I will live

- If attack is successful, other character takes 1 point of damage when hit
- If a roll is a natural 20 then a critical hit is dealt and the damage is doubled
- when hit points are 0 or less, the character is dead

# Feature: Character Has Abilities Scores

As a character I want to have several abilities so that I am not identical to other characters except in name

- Abilities are Strength, Dexterity, Constitution, Wisdom, Intelligence, Charisma
- Abilities range from 1 to 20 and default to 10
- Abilities have modifiers according to the following table

Score	Modifier	Score	Modifier	Score	Modifier	Score	Modifier
1	-5	6	-2	11	0	16	+3
2	-4	7	-2	12	+1	17	+3
3	-4	8	-1	13	+1	18	+4
4	-3	9	-1	14	+2	19	+4

<b>5</b>	-3	<b>10</b>	0	<b>15</b>	+2	<b>20</b>	+5
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## Feature: Character Ability Modifiers Modify Attributes

As a character I want to apply my ability modifiers improve my capabilities in combat so that I can vanquish my enemy with extreme prejudice

- add Strength modifier to:
  - attack roll and damage dealt
  - double Strength modifier on critical hits
  - minimum damage is always 1 (even on a critical hit)
- add Dexterity modifier to armor class
- add Constitution modifier to hit points (always at least 1 hit point)

## Feature: A Character can gain experience when attacking

As a character I want to accumulate experience points (xp) when I attack my enemies so that I can earn bragging rights at the tavern

- When a successful attack occurs, the character gains 10 experience points

## Feature: A Character Can Level

As a character I want my experience points to increase my level and combat capabilities so that I can bring vengeance to my foes

- Level defaults to 1
- After 1000 experience points, the character gains a level
  - 0 xp -> 1st Level
  - 1000 xp -> 2nd Level
  - 2000 xp -> 3rd Level
  - etc.
- For each level:
  - hit points increase by 5 plus Con modifier
  - 1 is added to attack roll for every even level achieved

## Iteration 2 - Classes

Classes that a character can have.

# Feature: Characters Have Classes

As a player I want a character to have a class that customizes its capabilities so that I can play more interesting characters

## Ideas

- changes in hit points
- changes in attack and damage
- increased critical range or damage
- bonuses/penalties versus other classes
- special abilities
- alignment limitations

## Samples

As a player I want to play a Fighter so that I can kick ass and take names

- attacks roll is increased by 1 for every level instead of every other level
- has 10 hit points per level instead of 5

As a player I want to play a Rogue so that I can defeat my enemies with finesse

- does triple damage on critical hits
- ignores an opponents Dexterity modifier (if positive) to Armor Class when attacking
- adds Dexterity modifier to attacks instead of Strength
- cannot have Good alignment

As a player I want to play a Monk so that I can enjoy being an Asian martial-arts archetype in a Medieval European setting

- has 6 hit point per level instead of 5
- does 3 points of damage instead of 1 when successfully attacking
- adds Wisdom modifier (if positive) to Armor Class in addition to Dexterity
- attack roll is increased by 1 every 2nd and 3rd level

As a player I want to play a Paladin so that I can smite evil, write wrongs, and be a self-righteous jerk

- has 8 hit points per level instead of 5
- +2 to attack and damage when attacking evil characters
- does triple damage when critting on an evil character (i.e. add the +2 bonus for a regular attack, and then triple that)
- attacks roll is increased by 1 for every level instead of every other level
- can only have Good alignment

# Iteration 3 - Races

Races that a character can be.

## Feature: Characters Have Races

As a player I want to play a Human so that I can be boring and unoriginal

- all characters default to Human

As a player I want a character to have races other than Human that customize its capabilities so that I can play more interesting characters and won't be boring and unoriginal

## Ideas

- changes in abilities
- increased critical range or damage
- bonuses/penalties versus other races
- special abilities
- alignment limitations

## Samples

As a player I want to play an Orc so that I can be crude, drunk, and stupid

- +2 to Strength Modifier, -1 to Intelligence, Wisdom, and Charisma Modifiers
- +2 to Armor Class due to thick hide

As a player I want to play a Dwarf so that I can drink more than the orc

- +1 to Constitution Modifier, -1 to Charisma Modifier
- doubles Constitution Modifier when adding to hit points per level (if positive)
- +2 bonus to attack/damage when attacking orcs (Dwarves hate Orcs)

As a player I want to play an Elf so that I can drink wine and snub my nose at the crude dwarf and orc

- +1 to Dexterity Modifier, -1 to Constitution Modifier
- does add 1 to critical range for critical hits (20 -> 19-20, 19-20 -> 18-20)
- +2 to Armor Class when being attacked by orcs

As a player I want to play a Halfling so that I can steal from the other drunk characters

- +1 to Dexterity Modifier, -1 to Strength Modifier

- +2 to Armor Class when being attacked by non Halfling (they are small and hard to hit)
- cannot have Evil alignment

## Iteration 4 - Weapons, Armor & Items

Items that enhance a characters capabilities.

### Feature: Weapons

As a character I want to be able to wield a single weapon so that I can achieve victory through superior firepower

- character can wield only one weapon

### Ideas

- basic weapons that improve damage (dagger)
- basic weapons that improve to attacks (+1 sword)
- magic weapons with special properties (knife of ogre slaying)
- weapons that certain classes or races can or cannot wield

### Samples

As a character I want to be able to wield a longsword so that I can look cool

- does 5 points of damage

As a character I want to be able to wield a +2 waraxe that so that I can *be* cool

- does 6 points of damage
- +2 to attack
- +2 to damage
- triple damage on a critical (quadruple for a Rogue)

As an elf I want to be able to wield a elven longsword that so I can stick it to that orc with the waraxe

- does 5 points of damage
- +1 to attack and damage
- +2 to attack and damage when wielded by an elf *or* against an orc
- +5 to attack and damage when wielded by an elf *and* against orc

As a monk I want nun chucks that work with my martial arts so that I can kick ass like Chuck

Norris

- does 6 points of damage
- when used by a non-monk there is a -4 penalty to attack

###Feature: Armor

As a character I want to be able to don armor and shield so that I can protect myself from attack

- character can only don one shield and wear one suit of armor

## Ideas

- basic armor that improves armor class (plate)
- magic armor that has special properties
- armor and shields that are or are not usable by certain races or classes

## Samples

As a character I want to be able to wear leather armor so that I can soften attacks against me

- +2 to Armor Class

As a fighter (or dwarf) I want to be able to wear plate armor so that I can ignore the blows of my enemies

- +8 to Armor Class
- can only be worn by fighters (of any race) and dwarves (of any class)

As a character I want to be able to wear magical leather armor of damage reduction so that I can soften attacks against me

- +2 to Armor Class
- -2 to all damage received

As an elf I want to be able to wear elven chain mail so that I can fit in with all the other elves

- +5 to Armor Class
- +8 to Armor Class if worn by an elf
- +1 to attack if worn by an elf

As a fighter I want to be able to hold a shield in my off-hand so that I can block incoming blows

- +3 to Armor Class
- -4 to attack

- -2 to attack if worn by a fighter

## Feature: Items

As a character I want to be able to have items that enhance my capabilities so that I can be more bad-ass

- can carry multiple items

## Ideas

- items that improve combat with types of weapons
- items that improve stats against enemies with a certain alignment or race
- items that improve abilities

## Samples

As a character I want to be able to wear a ring of protection so that I can be protected from attack

- adds +2 to armor class

As a character I want to be able to wear a belt of giant strength so that I can be even stronger in combat

- add +4 to Strength Score

As a character I want to be able to wear an amulet of the heavens so that I can strike down evil with holy power

- +1 to attack against neutral enemies
- +2 to attack against evil enemies
- double above bonuses if worn by a paladin

## Bonus Iteration - Battle Grid

Build your own features here. Multiple characters can be on a grid-based map. Each square on the map had terrain that impacts the occupant or opponents attacking into it. Characters can move and weapons have ranges.