

# MMA Simulation - Turn Based, Text Format

Anh Nguyenle, Rohan Chaudhary, Erwin Cheng  
Period 7

## Overall Game Description:

In this turn-based game, make a character with stats and a specific fighting style and battle against the world's greatest fighters in a tournament, working your way up to the final boss, to take him down and claim his fighting style. It is a text based game, with a turn based system akin to games such as Pokemon, with a unique reaction system. Players progress through the game by unlocking new moves and stats, slowly moving up towards harder and harder fights as they do so, until the end of the game.

## Basic Rules (Description of the game):

1. The player is asked if they want a tutorial
  - a. If they say yes, the game displays some basic information detailing how to play.
2. Player is told to make a character, inputting their name.
  - a. The game states what each stat does, and tells you to distribute them. You have 36 points to distribute among six stats, with a minimum of one in each stat.
  - b. You are given a description of all the styles, and are told to choose one.
  - c. The game shows the attacks and reactions of your style.
3. The tournament progresses in the loop as follows
  - a. You are given a description of your opponent (STYLE), who has a set amount of stats, and style.
    - i. e.x "Renowned Boxer, John Smith"
  - b. The Battle Process begins
    - i. Whoever has the higher Speed Stat goes first
      1. They can do as many attacks as their speed stat dictates.
      2. An attack is a move that does damage with a % chance to hit and an AP cost.
      3. Each attack can be dodged or blocked via a reaction, a move that costs stamina and lowers the accuracy % to hit or damage, as well as draining stamina.
      4. You can choose to not react
      5. Turns continue until one persons HP reaches 0
        - a. If you defeat the enemy, you move on to step 4C
        - b. Else, you are told you are defeated, and asked if you want to play again. If yes, get sent back to step 2.
    6. Some Notes...
      - a. When AP reaches 0, their turn automatically ends.

- b. Every time the attacker and defender switch, they each regenerate HP and AP.
    - c. After the battle, they can choose a reward.
      - i. If it is round 3 or 6, they get a new attack or reaction.
      - ii. Else, there is a pool of six perks, where they are given a perk at random.
    - d. They move on to the next battle
  - 4. At Round 9, they have to fight the boss, who has a custom style, and a high stat pool.
    - a. If they win, they get a victory screen, and are asked if they want to play again, unlocking the boss's style.

### Example:

Do you want a tutorial? (y/n)

y

This is a turn based text fighter, where you battle against different opponents. Each turn, you can do attacks at the cost of your AP (action points), with the goal of reducing your opponent's HP (health points) to 0. When your opponent attacks you, you can block or dodge to take less damage, but be careful! If you run out of AP, your turn automatically ends if you are attacking.

Defeat your opponents and claim your rightful position as THE GREATEST FIGHTER IN THE WORLD!

Create your character:

Select your stats. Each affects gameplay in a different way, and can be set from 1-10. There are six stats that all start at 1, and you have 30 points to upgrade them. Here is what they do:

VIGOR - Affects how many hits you can take.

CONSTITUTION - Affects how easy it is for you to get back on your feet.

ENDURANCE - Affects how many attacks you can throw out without getting tired.

PERCEPTION - Determines how accurate your moves are.

SPEED - Affects speed of your attacks, and effectiveness of your dodges.

STRENGTH - How much power your attacks have.

Please input in the format of six space separated integers summing up to 36, with a max of 10 and min of 1 for each:

**2 2 2 10 10 10**

CHOOSE YOUR STYLE:

Boxing - A punch focused style - using different types of slips.

Taekwondo - A style that utilizes multiple styles of kicks, with guards that deflect attacks away from the user.  
Muay Thai - A versatile style that uses a mix of punches, kicks, elbows, and knees, with a focus on low kicks and high damage.  
Kung Fu - An hard-hitting style based on animal powers, learned from Master Oogway.  
Karate - A japanese art of linear motion, with kicking and punching.  
Aikido - The art of redirection of energy.  
Jiu Jitsu - Uses throws, chokeholds and strikes.  
Judo - Uses throws , pins, joint locks.  
Input which style you want:  
Boxing

Enter your character's name:  
**Gordon Freeman**

Gordon Freeman  
Boxing  
2 VIGOR, 2 CONSTITUTION, 2 ENDURANCE, 10 PERCEPTION, 10 SPEED, 10 STRENGTH.  
HP - 70  
AP - 35  
-----Attacks-----  
JAB (2 AP)  
CROSS (5 AP)  
UPPERCUT (10 AP)  
QUICKSTEP (-5 AP)  
-----Reactions-----  
SLIP (3 AP)  
GUARD (7 AP)  
DISENGAGE (5 AP)

You step into the ring and face your opponent.

Your opponent is...  
John John  
Your opponent's style is: Boxing  
80 HP  
50 AP

Faster than your opponent, you have the advantage.

These are your attacks:

- 1: JAB (2 AP - 4 DMG)
- 2: CROSS (5 AP - 10 DMG)
- 3: UPPERCUT (10 AP - 20 DMG)
- 4: QUICKSTEP (-5 AP - 0 DMG)

What attack sequence would you like to do? (You have 3 moves)

**1 1 4**

John John failed to use GUARD against your JAB  
John John took 2 damage.

John John failed to use DISENGAGE against your JAB  
John John took 3 damage.

John John failed to use DISENGAGE against your QUICKSTEP  
John John took 0 damage.

John John has 75 HP and 33 AP left.  
You have 70 HP and 36 AP left.

John John is attempting to do:  
QUICKSTEP

These are your reactions:

- 1: SLIP (3 AP)
- 2: GUARD (7 AP)
- 3: DISENGAGE (5 AP)
- 4: Nothing

How do you want to react?

**3**

You succeeded in using DISENGAGE against John John's QUICKSTEP  
You took 0 damage.

...

John John has been defeated!  
You got..  
HONED FISTS - You hit harder, dealing more damage on every attack.

...

Your opponent is...  
THE FINAL BOSS  
Your opponent's style is: Драконяя система  
150 HP

50 AP

Your opponent is faster than you, you are at a disadvantage.

ULTIMATE BOSS OF ALL TIME: Chad Mcwomannnn is attempting to do:

ВСЕЛЕЕНСКИЙ ВЕЧНЫЙ ПЛАМЯ

TAIL OF THE DRAGON

TAIL OF THE DRAGON

These are your reactions:

1: SLIP (3 AP)

2: GUARD (7 AP)

3: DISENGAGE (5 AP)

4: DEMPSEY ROLL (8 AP)

5: Nothing

How do you want to react?

4

4

4

You failed in using DEMPSEY ROLL against ВСЕЛЕЕНСКИЙ ВЕЧНЫЙ ПЛАМЯ

You took 24 damage.

You failed in using DEMPSEY ROLL against TAIL OF THE DRAGON

You took 245 damage.

You have no HP left.

You have been defeated in battle.

Would you like to play again? (y/n)

## CLASSES

For all classes, assume there are setter and getter methods for most if not all attributes.

### Game

METHOD	DESCRIPTION
choosePerk(Player player)	Randomly assigns a perk to a player out of a pool of six.
playGame(boolean isComplete)	Starts a tournament sequence, returning

	true if the player wins, and false if they lose.
main	Initializes the player given their stats and style, calls playGame, asks the player if they want to play again, loops.

## PLAYER

ATTRIBUTE	DESCRIPTION
String name	Name of the Player
int[] hp	Array, First Element Dictates Maximum HP, Second Dictates Current HP, Third dictates HP regen.
int[] ap	Array, First Element Dictates Maximum AP, Second Dictates Current AP, Third dictates AP regen.
double blockMod	Block chance modifier
double dodgeMod	Dodge chance modifier
double attackMod	Attack damage modifier.
double accuracyMod	Accuracy modifier.
int order	Integer that dictates order of movement.
int numMoves	Integer that dictates how many moves one can make in a turn.
ArrayList<Attack> attackList	ArrayList that holds all Attacks the player can execute.
ArrayList<Reaction> reactionList	ArrayList that holds all Reactions the player can execute.
Attack sAttack	Attack object that holds the unlockable special attack
Reaction sReaction	Reaction object that holds the unlockable special reaction.

Style style	Style object that dictates player's style.
int[] stats	Integer array of size six that holds stats.

METHOD	DESCRIPTION
Player(String n, int[] s, Style istyle)	Initializes player instance, setting attributes based off of stats, setting the name based off a, and setting attacks and reactions via the style methods, storing the special attacks in a different attribute until it is unlocked.
getName()	Returns Name
regenHP(), setHP(int newHP), getHP()	Methods that regenerate, get, and set HP.
regenAP(), setAP(int newAP), getAP()	Methods that regenerate, get, and set AP
getAcc(), getDod(), getStr(), getRed(), getOrder(), getNumMoves(), getStyle(), getAttacks(). getReactions()	Methods that get various attributes.
throwAttack(Attack attack, Player target, Reaction reaction)	Throws an attack given an enemy and a player with the attack and reaction, returning true if it hits, and false if it doesn't. Takes into account all modifiers as well as the attack and reaction bonuses, calculating the chance to hit and dealing the damage to the affected target (if any).
unlockSpecA()	Unlocks the special attack, taking it from the variable into the attackList.
unlockSpecR()	Unlocks the special reaction, taking it from the variable into the reactionList.
toString()	Prints out the player with the name, stats, and style.
givePerkOne, givePerk Two, givePerk Three, givePerk Four, givePerk, Five, givePerk Six	Gives the bonus based off of the perk, such as increasing the number of moves. For specific perk bonuses, check the perk section below.

## Roster

ATTRIBUTE	DESCRIPTION
Player[] Opponents	Array size 9 of opponents that are Player objects.

METHOD	DESCRIPTION
Roster()	Initializes Each Opponent in the array, initializing their stats, names, and styles.
getNextOpponent()	Gets each opponent in a chronological sequence, returning the Player object next in sequence.

## Style

ATTRIBUTE	DESCRIPTION
attacks	Array of Attacks meant to hold Attack objects based on the initialized stats.
reactions	Array of Reactions meant to hold Attack objects based on the initialized stats.
name	Name of the style

METHOD	DESCRIPTION
Style(String a)	Initializes everything, based on a (the style name), creates the attacks and reactions needed for the style.
getAttacks()	Returns the array of Attacks
getReactions()	Returns the array of Reactions



getName()	Returns the name
-----------	------------------

## Attack

ATTRIBUTE	DESCRIPTION
name	String name of attack
damage	Int damage number that dictates the base damage of the attack
accuracy	A double that dictates how accurate the chance is (probability it has to hit)
cost	Int that dictates the AP cost of the move.

METHOD	DESCRIPTION
Attack(String atkName, int dmg, double acc, int atkCost)	Initializes everything based on the parameters given.
getName(), getDamage(), getAccuracy, getCost()	Standard getters for the attributes.
toString()	Prints out all information.

## Reaction

ATTRIBUTE	DESCRIPTION
name	The name of the reaction.
dodgeChance	Decimal that detracts from accuracy when reacting to a move.
damageMitigation	Decimal that modifies damage when reacting to a move.
cost	The AP cost of the reaction.

METHOD	DESCRIPTION
Reaction(String reactName, double dodge, double dmgMitigation, int reactCost)	Initializes everything based on input parameters.
getName(), getCost(), getDodgeChance(), getDamageMitigation()	Standard getters for variables / attributes in the class.
toString()	String override that prints out attributes in a neat format.

## Battle

ATTRIBUTE	DESCRIPTION
p	Player object designating the player
o	Player object designating the opponent.

METHOD	DESCRIPTION
Battle(Player player, Player opponent)	Initializes the player and opponent attributes.
commenceBattle()	Handles the battle logic, returning true if the player wins and false if not. Handles enemy AI / logic, calling methods from the player, as well as accurately relaying the results.
playerAttack()	Method that has the player do an attack sequence, calling methods from the player to handle the attack logic, having the opponent randomly choose a reaction, accurately outputting the results.
playerReact()	Method that has the player do a react sequence, calling methods from player and having the enemy do a random attack from their pool of attacks, and accurately relaying the results.

## **STYLES**

### **BOXING**

Standard style that relies on punching and dodges.

### **TAEKWONDO**

Kick focused style that focuses on high damage at high AP cost.

### **MUAY THAI**

Elbow and Knee focused style, that does heavy damage with low accuracy.

### **KUNG FU**

High accuracy precision based moves that deal relatively low damage.

### **KARATE**

All rounder style. Jack of all trades, master of none.

### **AIKIDO**

Defense focused style that prioritizes HP and AP regen. Hybridizes dodges and blocks.

### **JIU-JITSU**

Grapple focused style that deals heavy damage at the cost of low defense.

### **JUDO**

Low accuracy heavy hitting styles, with an emphasis on counter blocks with a low stamina cost.

### **Драконая система**

Best of all worlds. High in every stat, most moves one shot average players if not reacted to.

### **PERK POOL**

**UNYIELDING SPIRIT** - AP Regeneration is increased by 50%.

**FLOAT LIKE A BUTTERFLY** - All moves have a higher dodge chance.

**ADAMANTIUM SKELETON** - All reactions significantly reduce damage taken.

**HONED FISTS** - You hit harder, dealing more damage on every attack.

**HEIGHTENED SENSES** - It is easier to hit enemies with your attacks

**FASTER THAN A BULLET** - You have one more move per turn.

### **ROLES AND RESPONSIBILITIES**

Anh - Style class, main, style design. Debugging elements, helping with balance. Algorithmic design.

Rohan - Player class, Game class, debugging and enemy design, game balance.

Roster Class. Submissions, project document write-ups,

Erwin - Action class, Reaction class, Battle class, part of Game class

### **PROJECT PROGRESS OVERVIEW**

WEEK 2 - Basic Classes were finished, such as Reaction and Attack

WEEK 3 - We added the main gameflow, and started work on the Battle Class

WEEK 4 - The game was debugged, fixing issues, and finishing the full gameflow, including systems such as perks.