Game Logic – Minimum Viable Product

**Action Gauge:**

* Make a counter variable
* Use setInterval to increase the height frame by frame (use a very small interval e.g. 10), increasing the counter at every frame: [**https://www.w3schools.com/howto/howto\_js\_progressbar.asp**](https://www.w3schools.com/howto/howto_js_progressbar.asp)
* Make height a percentage and have height correspond to the counter value
* Subtract 100 from the counter after attack/defend is executed

**2nd Action Gauge:**

* Connect the 2nd Gauge to values 101-200 of the counter (e.g. if counter <= 100, guage1.height ++. If counter > 100, gauge2.height ++)

**Hp Bar:**

* Similar logic to the action gauge but no need for setInterval.
* Have width be a percentage and correspond to the hp values of player/enemy
* Width = (Current hp/total hp) \* 100%

**Player & Enemy Class:**

* Assign hp variables
* Assign str variables
* Assign armour variables
* Assign Action Gauge counter
* Enemy Attack function
* Check if player defend variable === true
* Do damage calculation (factoring in armour values and defend state)
* Execute Text Log function, with parameters of (“enemyAttack”, dmg value, defend true/false)
* Set player defend variable = false
* Player Attack function
* Set player defend variable = false
* Do damage calculation
* Execute Text Log function, with parameter of (“playerAttack”, dmg value)
* Player Defend function
* Set defend variable to true. Show defend animation.

**Enemy Attack:**

* If Enemy Action Gauge === 100, execute attack function within the Enemy class

**Player Attack:**

* Check first if Attack Button is pressed && Action Gauge >= 100, then execute attack function within the player class

**Player Defend:**

* Check first if Defend Button is pressed && Action Gauge >= 100, then execute defend function within the player class

**Text Log:**

* HTML of many “div”. Each “div” is one line.
* If first parameter === playerAttack, change text1.innerText = “You dealt x damage to the enemy”
* If first parameter === enemyAttack, change text1.innerText = “The enemy dealt x damage to you”
* If defend = true, change text1.innerText = “You defended! The enemy dealt x damage to you. ”

**Attack/Defend Button:**

* Toggle between selected/unselected states(reflected visually) whenever either button is selected and also, after either action is executed

Game Logic – Stretch Goals

**Parry:**

* Add on to Enemy attack function:
* If player defend === true, execute parry function
* Parry function:
* Pass a Boolean into both player and enemy Action Gauge functions to set parry === true
  + Inside the player and enemy Action Gauge functions, add the parameter and stop the counter for setInterval of 1000 (1 second) when parry === true.
* Make a bar appear that ticks down within 1 second
* Make 3 random keys appear in the middle of the screen (letters and numbers)
  + Check for player input and toggle the colour/appearance of the keys on screen when any are inputted correctly
  + Hide the keys when 1 second is over or when the player is successful
* When successful, play parry animation, do damage calc and text log. If failed, do damage calc and text log.

Damage Formula

Take the character’s “strength” value as the base. The outgoing damage will vary from 80% to 120% of the strength value. This outgoing damage then gets mitigated by a % number which is equivalent to the opponent’s “armour” value.

**Code:**

const Modifier = Math.ceil(Math.random() \* 20);

let damage = 0;

If (Math.round(Math.random()) === 0) {

(damage = Math.round((strength \* ((100 – modifier) / 100)) \* opponent armour);

} else {damage = Math.round((strength \* ((100 + modifier) / 100)) \* opponent armour);}

Enemy Attacks & Queue

* Create an array enemyQueue = []
* Make an object inside the Enemy class constructor to store the enemy’s attacks
* Attacks = {swipe: swipeImage}
  + Define all the image variables in main script, storing the image link.

(e.g. const swipeImage = “images/swipeattack”)

* At the start of the game, select 3 random attacks and store them (the image url) into enemyQueue.
* Inside the fillEnemyActionGauge function, shift from the array then pop a new attack. Then update the images
* execute enemy.attack(enemyQueue[0])
* Inside the enemy class, in the attack function: list out all the cases of the different attacks

Different Enemies

* Make different classes for different enemies. Set a default value for all their stats e.g. strength, armour, actionGauge
* Only difference between the enemies would be their attacks and their className
* Also make another attribute called image and store the image url of the enemy
* At the start of each stage, randomly pick an enemy className and multiply their stats by however difficult the stage is meant to be.

Stage Loop

* In the continuousEvents function, check for enemy.hp <= 0. If true, execute the stageLoop function
* stageLoop:

1. Stop action gauges, blur background and show a victory message
2. pickUpgrade function (shows the upgrades on the screen and assigns click events to the upgrade buttons)
3. nextStage function (upon clicking the upgrade button, get rid of all the pickUpgrade html elements. Increase currentStage by 1. Then generateEnemy and startStage.