**Project**: The project is a turn-based RPG attack system framework. This will be part of a larger system that will probably be out of scope for the current time scale. The idea is to write this code in the program Game Maker, but to make this program general enough that it can be part of a suite of RPG game creation and gameplay programs, so that they can be used for more than one game.

**Turns:** Create a turn queue based on factors (Speed, team, other environmental factors such as surprise). This should be a FIFO queue where once popped off the top, they are re-added to the bottom of the queue. This could also be accomplished by creating a list of turns, and just starting over at the beginning once the end is reached. However, characters fainting and being removed from battle would be much cleaner in removing them from a queue than a list and would more easily allow for multiple attacks from one unit per turn.

**Attacking:** Possible moves in a list for the user to choose from. Different attacks will be split up into three categories: Melee, magic, ranged/projectile (magic or regular).

* Melee attacks will require the character to move across the intervening distance between them, thus playing a running animation, and then initiate an attacking animation once a certain distance to the enemy character has been reached. Once the animation reaches a chosen frame, the attacking unit communicates how much damage is dealt to the enemy player. Then once finished attacking, the character retreats back to its previous location.
* Ranged/projectile attacks will initiate an attacking animation immediately and then create a projectile that starts at a certain position on the character and then travels in a straight line towards the targeted enemy. Once the projectile is within a certain distance of the enemy the projectile then tells the character who fired it to tell the enemy unit that it has been hit and for how much damage. The projectile would then stop and play whatever animation specified for when it hits an enemy/create particle effects.
* Magic attacks will initiate an attacking animation immediately and then create an instant effect on the targeted enemy player. This includes such things as debuff spells, certain spells that instantly appear at targeted unit’s locations, etc. These will then be communicated to the enemy unit by the attacking character.

Sprites needed per character:

* Melee: Charge at enemy, attack enemy with melee weapon, retreat
* Projectile: Firing projectile at target, projectile fired, effect produced on target
* Magic: Performing magic, effect on target

**Teams:** Create variable in all characters designating whether team, ally, neutral, or hostile. to allow for different effects. Characters on a team with others will join them in battle when attacked or attacking. Allies will be immune to being attacked. Neutral can be attacked, but will not attack characters on sight. Hostiles will attack on sight and will band together with all nearby hostiles to attack characters.

**Variables needed:**

* Health
* Max number of attacks
* Disposition
* Attack 1…- damage list
* Attack 1…- type of attack list
* Armor
* Resistance
* Objects list
* Movement speed
* Current target
* Current sprite
* State (In Battle, exploring, in cutscene, etc)

**Technical details:** Most of the lists that we are going to utilize are DS maps, which is the Game Maker version of a hash map. This will allow us to access much of the data stored in lists in near constant time.