# Assignment 8: Weapons of Skyrim and Elden Ring

30 Points scaled to 20 Points

## Introduction

This assignment asks you to generate a series of graphs relating to weapon stats within the open world games Skyrim and Elden Ring. The Skyrim dataset ("Skyrim_Weapons.csv") and the Elden Ring dataset ("elden_ring_weapon.csv") were both obtained from Kaggle. Please visit the links below to learn more about the datasets.

Skyrim Data: https://www.kaggle.com/datasets/elmartini/skyrim-weapons-dataset

Elden Ring Data: https://www.kaggle.com/datasets/l3llff/-elden-ring-weapons

### Objectives

- *Query, filter, and summarize data*
- *Recode nominal data*
- *Use a variety of graphical parameters to visualize and compare variables*
- *Generate effective and informative graphs*

### Deliverables

- *Jupyter Notebook (Python) or R Markdown file (R) with all code and graphs embedded. Files can be rendered to HTML webpages if your instructor requires this. Graph prompts should be stated within Markdown cells.*

## Graphs

This assignment can be conducted using either Python (matplotlib, seaborn, and pandas) or R (ggplot2), whichever you prefer or whichever you instructor requires. Generate code to generate the following graphs.

### Skyrim Graphs

You will first need to subset records from the dataset. Extract out only weapons of type ("Type") Bow, Mace, Sword, War Axe, or Warhammer.

Graph 1: Create a scatterplot for all weapons to compare weight ("Weight") and damage ("Damage"). (2 Points)

Graph 2: Create a scatterplot for all weapons to compare cost ("Gold") and damage ("Damage"). (2 Points)

Graph 3: Create a scatterplot for all weapons to compare weight ("Weight") and damage ("Damage"). Differentiate the type of weapon ("Type") using the point color. (2 Points).

Graph 4: Create a grouped box plot to show the distribution of damage ("Damage") grouped by weapon type ("Type"). (2 Points)

Graph 5:  Create a grouped box plot to show the distribution of weapon weight ("Weight") grouped by weapon type ("Type"). (2 Points)

Graph 6: Create a grouped violin plot to show the distribution of damage ("Damage") grouped by weapon type ("Type"). (2 Points)

Graph 7: Create a grouped violin plot plus grouped box plot to show the distribution of damage ("Damage") grouped by weapon type ("Type"). (2 Points)

Graph 8: Create a grouped violin plot plus grouped box plot to show the distribution of damage ("Damage") grouped by weapon Category ("Category"). (2 Points)

Graph 9: Create a scatterplot with weapon weight ("Weight") mapped to the x-axis position, damage ("Damage") mapped to the y-axis position, type ("Type") mapped to the point color, and weapon category ("Category") mapped to the point symbol. (2 Points)

## Elden Ring Graphs

You will first need to subset records from the dataset. Extract out only weapons of type ("Type") Axe, Colossal Sword, Curved Greatsword, Curved Sword, "Greataxe", Greatsword, Hammer, Heavy Thrusting Sword, Katana, Straight Sword, or Warhammer. Next, recode all swords to "Sword" (including Katanas), all hammers to "Hammer", and all axes to "Axe".

Graph 10: Create a grouped box plot to show the distribution of physical damage ("Phy") grouped by recoded weapon types ("Type"). (2 Points)

Graph 11: Create a grouped box plot to show the distribution of weapon weight ("Wgt") grouped by recoded weapon types ("Type"). (2 Points)

Graph 12: Create a scatterplot with weight ("Wgt") mapped to the x-axis position, physical damage ("Phy") mapped to the y-axis position, and recoded weapon type ("Type") mapped to the point color. (2 Points)

Graph 13: Create a histogram for just the swords ("Type") showing the distribution of weapon weight ("Wgt"). (2 Points)

Graph 14: Create a kernel density plot for just the swords ("Type") showing the distribution of weapon weight ("Wgt"). (2 Points)

Graph 15: Create a kernel density plot for all weapons grouped by type ("Type") showing the distribution of weapon weight ("Wgt"). In other words, each weapon type should have its own density curve. (2 Points)