**Project 1 - Proposal**

**Project Title:** Cinematic Heroverse

**Team Members:** Aashish Aryal, Kevin Lopez, Alex De La O, Nathan Payne, Anna Remler  & Reed Zimpfer

**Project Description/Outline:** Box office and financial comparison of MCU & DCEU movies and television series since inception.

**Research Questions:**

1. Which cinematic universe is more “successful”? - Kevin
2. Who has the higher villain to hero ratio? - Anna
3. Who is the richest hero? Richest Villain? - Alex
4. Diversity of characters. Features? All characters in the universes, Gender Identity, eye color. Sexual Orientation - Nate
5. Compare the moral alignment (good, neutral or bad) for marvel vs dc? - Anna
6. When each character was created. - Kamran
7. Which characters are the most popular (at least in comics)? - Nate
8. Where do they come from? - Reed

**Datasets to be Used:**

* <https://www.kaggle.com/datasets/leonardopena/marvel-vs-dc>
* <http://www.omdbapi.com/?i=tt3896198&apikey=e2ea4c15>
* <https://www.superheroapi.com/>
* <https://www.superherodb.com/shdb-api/100-5292/>
* https://datahub.io/five-thirty-eight/comic-characters

**Written Analysis**

**Total Characters and Appearances**

The DC Universe and Marvel Universe contain 6,896 and 16,376 characters, respectively, for a total of 23,272 characters. In the DC Universe, Batman has the most character appearances with 3,093, followed by Superman (2,496), Green Lantern (1,565), James Gordon (1,316), Richard Grayson (1,237).  In the DC Universe, Spider-Man has the most character appearances with 4,043, followed by Captain America (3,360), Wolverine (3,061), Iron Man (2,961), and Thor (2,258).

**Diversity**

The DC Universe has characters identifying as four different genders, male (4,783), female (1,967), genderless (20), and transgender (1). The Marvel Universe has characters identifying as four different genders, male (11,638), female (3,837), agender (45), and genderfluid (2). The DC Universe has characters identifying as three different sexual orientations, straight (6,832), homosexual (54), and bisexual (10). The Marvel Universe has characters identifying as seven different sexual orientations, straight (16,286), homosexual (66), bisexual (19), transgender (2), transvestite (1), pansexual (1), and genderfluid (1). The DC Universe has 17 eye colors represented with blue as the most popular (1,102). The Marvel Universe has 24 eye colors represented with blue as the most popular (1,962). The Marvel Universe has more diversity of hair colors. Bald characters are more heavily represented in the DC universe compared to the Marvel universe.

**Wealthiest Characters: Heroes vs Villains and Income Sources**

The overall wealth of the characters is categorized as hero name, franchise, character type (hero, villain), income source (entrepreneur, inheritance, monarchy, self-made and investments), entity name (Wayne Enterprises, Stark Industries, Kingdom of Atlantis, etc.) and entity type (kingdom, multinational conglomerate, tech conglomerate etc.). Those in the self-made category have made their wealth through being part of criminal organizations or have been able to live through multiple centuries to make their riches. The main created list of wealth shows Aquaman as the wealthiest character overall in comic books at $150 Trillion dollars with Black Panther coming in second overall at $90.7 Trillion dollars. This also makes them the wealthiest in their respective universes. Separating the heroes from the villains, the data frames show Aquaman at number one in overall heros, while a Marvel villain named “Sunspot” has come in as the number one wealthiest villain at $125 Billion dollars. For income sources, the categories and number of characters are Entrepreneurs (13), Inheritance (12), Self-made (6), Monarchs (5) and Investments (1).  The percentages of each of income source are as follows: Entrepreneur (35.2%), Inheritance (32.2%), Self-made (16.2), Monarch (13.5%) and Investments (2.7%).

**Heroes and Villains: Size and strength**

By using an API, I extracted both the biographical data and the power status of characters from both DC and Marvel. I think strengths can come both in size and individually, so I decided to look at both of those parts. Starting with size, I first separated the data frames by “good", “bad" and “neutral“. Having done that, I counted out the amount of villains and heroes in each universe, with Marvel having more of both. Specifically, DC had 153 “good”, 66 “bad”, and 13 “neutral”. By contrast, Marvel had 252 “good”, 113 “bad”, 11 “neutral”. While DC has less characters overall, they had slightly higher percentage of “Neutral“ characters (5.6% versus marvels 2.9%). But size is not everything, pure strength is also a feature. I exported the data frame into a CSV file and in that file, summed up the “intelligence“, “Strength“, “Speed“, “ durability“, “power“, and “Combat“. Naming it total power, it was surprising that superman was the strongest hero in the DC universe with a total power of 579. However, the most powerful hero in the Marvel universe, Captain universe, had a total power of 600. So, if the two universe is ever met, captain of universe would technically win. From the villain‘s perspective, and it’s fitting that superman‘s greatest enemy General Zod was also the most powerful, with his total power being 585. In contrast, marvels strongest villain is a character named Dormammu, who I had never heard of before. He had a total power of 546. So, while DC has stronger villains, marvel has stronger heroes. It is a conclusion that sort of fits my theory that DC has more recognizable villains than marvel and is why, despite the success of the Marvel cinematic universe, people remember DC villains more.

**Successful movie franchise: Marvel vs DC**

When it comes to comic book universes, there are two heavy weights: Marvel and DC. Based on the cinematic universe I have analyzed data using csv files to see what company has achieved the most success in their recent blockbuster films. Using the rating data from IMDB and Metascore, I analyzed that the MARVEL universe outperformed DC in both categories. What about gross revenue international and domestic? I have gathered data from csv files to analyze which franchise achieved the highest income. During my analysis I uncovered that Marvel dominated once again over DC when it comes to gross revenue domestic and international. We easily see with the data used that MARVEL currently is more successful over DC.

**Marvel vs DC - Birthplaces of Heroes & Villains**

By using an api, I found that excessive data exists on the birthplaces of the mighty heroes and villains of the Marvel and DC universes. Although most of them are from earth or from a different dimension’s earth, many are on their own planets. I decided to split up marvel & dc each by heroes and villains and then to compare point of origin from there. There were many heroes and villains with no data for birthplace in the api I pulled from. The Marvel Universe is centered in New York city and similarly the DC universe is centered in Gotham city. It would be really cool to be able to map these places on a universe map for each of them to see even more relationships. Intending to continue working on this problem to further clean up the api dataset and find more relationships.

**Conclusion**

We conclude that the Marvel Universe is much more successful, prominent, and diverse based on our research than the DC Universe. Marvel has characters with more diverse backgrounds, which appeal to a broader audience leading to a continued revenue lead over DC. Marvel also has more characters overall that will allow them to branch off from their current universe plot, leading to more shows and more movies. Based on the data, we anticipate more revenue and greater success for the Marvel Universe.