

**Group:** AAAnime

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**Link to GitHub Repository:** <https://github.com/YaChny/AAAnime>

**1. The goals for your project including what APIs/websites you planned to work with and what data you planned to gather (10 points)**

AnimeChan (<https://github.com/RocktimSaikia/anime-chan>)

- "anime": name of each anime which has "um" in their name
- "character": character of the selected animes
- "quote": quote by the characters of the selected animes

Kitsu (<https://kitsu.docs.apiary.io/#>)

- "canonicalTitle": the title of the anime
- "averageRating": the average rating for the anime
- "userCount": the number of users that watch the anime
- "startDate": the date that the anime started

Danbooru

([https://danbooru.donmai.us/artists.json?login=zhiyew0106&api\\_key=PmSnM9x5qbFD8eR3ExjbbJqs&limit=120&page=1](https://danbooru.donmai.us/artists.json?login=zhiyew0106&api_key=PmSnM9x5qbFD8eR3ExjbbJqs&limit=120&page=1))

- "name": the artist's name
- "other\_names": the nickname / alias of the artists

([https://danbooru.donmai.us/tags.json?login=zhiyew0106&api\\_key=PmSnM9x5qbFD8eR3ExjbbJqs&limit=120&page=1](https://danbooru.donmai.us/tags.json?login=zhiyew0106&api_key=PmSnM9x5qbFD8eR3ExjbbJqs&limit=120&page=1))

- "name": the tag name associate with artist name
- "post\_count": number of post relates to the tag
- "category": the category that tag belongs to
  - five categories in total: General (correspond value: 0), Artist (correspond value: 1), Copyright (correspond value: 3), Character (correspond value: 4), Meta (correspond value: 5)

**2. The goals that were achieved including what APIs/websites you actually worked with and what data you did gather (10 points)**

AnimeChan by Zichen Zang

- I did create three tables, one for Anime Names which contains "um" selected from "anime", one for the characters of the selected animes "character", and one for the quotes by each character from the selected animes "quote".

#### Kitsu by Anca Fu

- I created two tables. The first table contains the "canonicalTitle" which is the title of the anime, "averageRating" which is the average rating for the anime, and "userCount" which is the number of users that watch the anime. The other table contains "episodeCount" which is the number of episodes available for the anime.

#### Danbooru Anime by Violetta Wang

- I created two tables. One is about artist's names, containing the artist's "names" and "other names". Another table is about the information of tags, containing the tag's "name", "post\_count" and "category".

### **3. The problems that you faced (10 points)**

Zichen Zang: One main problem I faced was that the default rate limit is 100 requests per hour for my API. However, if I ran my codes several times to add 25 items each time and gain at least 100 items, the amount of requests I made would definitely exceed this limit. As a result, I have to wait for an hour, again and again, to finally gather all the items I need into the database. This problem was not hard to solve but was really time-consuming.

Anca Fu: The first problem that I faced is thinking about how to put 25 items into the database every time I run the file instead of looping through the function 4 times. However, I found that the solution is finding the largest integer key and setting the start variable equal to the next row. The second problem is finding out what data to calculate and visualize that required me to join the databases. I decided to categorize the first 100 anime in Kitsu by the episode count in a pie chart.

Violetta Wang: I couldn't get the data at first. I thought it might be because the API needs an API key, but I already put my API key. Then, I search this problem online and add 'authority', 'headers' and other information. I acquired data in the end but in HTTP format instead of JSON. Then, I tried to use selenium as it can simulate browser operation to request the artist JSON data instead of request lib, and it works. Another problem is that I found I only gained 20 items from the API, leading to the result of duplicate requests. However, I found instructions from the API website, which states that it needs to add "limit=100" at the end of the link so that I can request for 100 items at one time.

#### 4. The calculations from the data in the database (i.e. a screenshot) (10 points)

Zichen Zang:

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AnimeChanCalculation.txt
Dictionary of total number of each character's quote in each animation which name contains 'um':
{'Akuma To Love Song': {'quote_num': 10, 'char_num': {'Kawai Maria': 9, 'Shin Meguro': 1}}, 'Amaama to Inazuma': {'quote_num': 1, 'char_num': {'Kouhei Inuzuma': 1}}, 'Azumanga Daioh':
{'quote_num': 2, 'char_num': {'Ayumu Kasuga': 2}}, 'Bakuman': {'quote_num': 9, 'char_num': {'Akito Takagi': 3, 'Moritaka Mashiro': 4, 'Miho Azuki': 1, 'Kazuya Hiramaru': 1}}, 'Bubblegum Crisis:
Tokyo 2040': {'quote_num': 1, 'char_num': {'Galatea': 1}}, 'Free! Eternal Summer': {'quote_num': 2, 'char_num': {'Haruka Nanase': 1, 'Rei Ryugazaki': 1}}, 'Hibike! Euphonium': {'quote_num': 3,
'char_num': {'Noboru Taki': 1, 'Kumiko Oumae': 1, 'Kawashima Sapphire': 1}}, 'Himouto! Umaru-chan': {'quote_num': 1, 'char_num': {'Umaru Doma': 1}}, 'His and Her Circumstances': {'quote_num': 1,
'char_num': {'Soichiro Arima': 1}}, 'Inazuma Eleven': {'quote_num': 2, 'char_num': {'Gouenji Shuuya': 1, 'Mark Kluger': 1}}, 'Kakumeiki Valvrave': {'quote_num': 2, 'char_num': {'Senator Figaro':
1, 'L-el': 1}}, 'Kamisama To Umeki Kakumei No Paradox': {'quote_num': 1, 'char_num': {'Renya Kagurazaka': 1}}, 'Ludwig Kakumei': {'quote_num': 1, 'char_num': {'Ludwig Kakumei': 1}}, 'Mawaru
Penguinrump': {'quote_num': 10, 'char_num': {'Keiju Tabuki': 1, 'Himari Takakura': 2, 'Sanetoshi Watase': 6, 'Momoka Oginome': 1}}, 'Mini wo Sumasaba': {'quote_num': 2, 'char_num': {'Shizuku
Tsukishima': 2}}, 'Monster Musume no Iru Nichijou': {'quote_num': 4, 'char_num': {'Rachnera Arachnera': 4}}, 'Natsume Yuujinchou': {'quote_num': 10, 'char_num': {'Takashi Natsume': 6, 'Natsume
Takeshi': 4}}, 'Oyasumi Punpun': {'quote_num': 10, 'char_num': {'Masumi Seki': 1, 'Yuichi Onodera': 2, 'Isogi Toshio': 3, 'Punpun Onodera': 1, 'Oyasumi Punpun': 1, 'Harumi Shuntarou': 1, 'Sachi
Nanjou': 1}}, 'Psychic Detective Yakumo': {'quote_num': 4, 'char_num': {'Yakumo Saito': 2, 'Makoto Hijikata': 1, 'Isshin Saito': 1}}, 'Rokujouma no Shinyakushai?': {'quote_num': 2, 'char_num':
{'Harumi Sakuraba': 1, 'Kirihira Kurano': 1}}, 'Sakurako-san no Ashiato ni wa Shitai ga Umattetaru!': {'quote_num': 4, 'char_num': {'Isosaki Itsuki': 1, 'Sakurako Kujo': 3}}, 'School Rumble':
{'quote_num': 7, 'char_num': {'Kenji Harima': 3, 'Yakumo Tsukamoto': 1, 'Tenma Tsukamoto': 2, 'Imadori Kyousuke': 1}}, 'Steel Angel Kurumi': {'quote_num': 1, 'char_num': {'Saki': 1}}, 'Summer
Wars': {'quote_num': 1, 'char_num': {'Sakae Jinouchi': 1}}, 'Tanaka-kun wa Itsumo Kedaruge': {'quote_num': 3, 'char_num': {'Tanaka': 3}}, 'The Melancholy of Haruhi Suzumiya': {'quote_num': 10,
'char_num': {'Kyon': 4, 'Itsuki Koizumi': 2, 'Haruhi Suzumiya': 3, 'Yuki Nagato': 1}}, 'Trigun: Badlands Rumble': {'quote_num': 1, 'char_num': {'Gasback': 1}}, 'Tsumi to Batsu: A Falsified
Romance': {'quote_num': 1, 'char_num': {'Kai Sudo': 1}}, 'Umineko no Naku Koro ni': {'quote_num': 10, 'char_num': {'Frederica Bernkastel': 1, 'Dlanor A. Knox': 1, 'Claire Bernardus': 2,
'Featherine Augustus Aurora': 1, 'Ushiromiya Lion': 1, 'Beatrice': 1, 'Furudo Erika': 1, 'Gaap': 2}}, 'Utawarerumono': {'quote_num': 1, 'char_num': {'Urutori': 1}}, 'White Album 2':
{'quote_num': 2, 'char_num': {'Touma Kazusa': 1, 'Kitahara Haruki': 1}}}

Number of animation which has more than 5 quotes: 8

Dictionary of animation which has more than 5 quotes:
{'Akuma To Love Song': {'quote_num': 10, 'char_num': {'Kawai Maria': 9, 'Shin Meguro': 1}}, 'Bakuman': {'quote_num': 9, 'char_num': {'Akito Takagi': 3, 'Moritaka Mashiro': 4, 'Miho Azuki': 1,
'Kazuya Hiramaru': 1}}, 'Mawaru Penguinrump': {'quote_num': 10, 'char_num': {'Keiju Tabuki': 1, 'Himari Takakura': 2, 'Sanetoshi Watase': 6, 'Momoka Oginome': 1}}, 'Natsume Yuujinchou':
{'quote_num': 10, 'char_num': {'Takashi Natsume': 6, 'Natsume Takeshi': 4}}, 'Oyasumi Punpun': {'quote_num': 10, 'char_num': {'Masumi Seki': 1, 'Yuichi Onodera': 2, 'Isogi Toshio': 3, 'Punpun
Onodera': 1, 'Oyasumi Punpun': 1, 'Harumi Shuntarou': 1, 'Sachi Nanjou': 1}}, 'School Rumble': {'quote_num': 7, 'char_num': {'Kenji Harima': 3, 'Yakumo Tsukamoto': 1, 'Tenma Tsukamoto': 2,
'Imadori Kyousuke': 1}}, 'The Melancholy of Haruhi Suzumiya': {'quote_num': 10, 'char_num': {'Kyon': 4, 'Itsuki Koizumi': 2, 'Haruhi Suzumiya': 3, 'Yuki Nagato': 1}}, 'Umineko no Naku Koro ni':
{'quote_num': 10, 'char_num': {'Frederica Bernkastel': 1, 'Dlanor A. Knox': 1, 'Claire Bernardus': 2, 'Featherine Augustus Aurora': 1, 'Ushiromiya Lion': 1, 'Beatrice': 1, 'Furudo Erika': 1,
'Gaap': 2}}}

Percentage of animation which has more than 5 quotes: 0.26

Dictionary of percentage of each character's quote in each animation which has more than 5 quotes:
{'Akuma To Love Song': {'quote_num': 10, 'char_percentage': {'Kawai Maria': 0.9, 'Shin Meguro': 0.1}}, 'Bakuman': {'quote_num': 9, 'char_percentage': {'Akito Takagi': 0.33, 'Moritaka Mashiro':
0.44, 'Miho Azuki': 0.11, 'Kazuya Hiramaru': 0.11}}, 'Mawaru Penguinrump': {'quote_num': 10, 'char_percentage': {'Keiju Tabuki': 0.1, 'Himari Takakura': 0.2, 'Sanetoshi Watase': 0.6, 'Momoka
Oginome': 0.1}}, 'Natsume Yuujinchou': {'quote_num': 10, 'char_percentage': {'Takashi Natsume': 0.6, 'Natsume Takeshi': 0.4}}, 'Oyasumi Punpun': {'quote_num': 10, 'char_percentage': {'Masumi
Seki': 0.1, 'Yuichi Onodera': 0.2, 'Isogi Toshio': 0.3, 'Punpun Onodera': 0.1, 'Oyasumi Punpun': 0.1, 'Harumi Shuntarou': 0.1, 'Sachi Nanjou': 0.1}}, 'School Rumble': {'quote_num': 7,
'char_percentage': {'Kenji Harima': 0.43, 'Yakumo Tsukamoto': 0.14, 'Tenma Tsukamoto': 0.29, 'Imadori Kyousuke': 0.14}}, 'The Melancholy of Haruhi Suzumiya': {'quote_num': 10, 'char_percentage':
{'Kyon': 0.4, 'Itsuki Koizumi': 0.2, 'Haruhi Suzumiya': 0.3, 'Yuki Nagato': 0.1}}, 'Umineko no Naku Koro ni': {'quote_num': 10, 'char_percentage': {'Frederica Bernkastel': 0.1, 'Dlanor A. Knox':
0.1, 'Claire Bernardus': 0.2, 'Featherine Augustus Aurora': 0.1, 'Ushiromiya Lion': 0.1, 'Beatrice': 0.1, 'Furudo Erika': 0.1, 'Gaap': 0.2}}}

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Anca Fu:

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KitsuCalculation.txt
Maximum number of episodes: [('Naruto', 220)]

Minimum number of episodes: [('Cowboy Bebop: Knockin' on Heaven's Door', 1), ('Neon Genesis
Evangelion: Death & Rebirth', 1), ('Neon Genesis Evangelion: The End of Evangelion', 1), ('Ghost in
the Shell', 1), ('Rurouni Kenshin: Meiji Kenkaku Romantan - Ishinshishi e no Chinkonka', 1),
('Akira', 1), ('Appleseed (Movie)', 1), ('Mobile Suit Gundam: The 08th MS Team - Miller's Report',
1), ('Mobile Suit Gundam: Char's Counterattack', 1), ('Mobile Suit Gundam F91', 1), ('Mobile Suit
Gundam Wing: Endless Waltz', 1), ('Air Movie', 1)]

The Categories:
1-44 Episodes, 45-88 Episodes, 89-132 Episodes, 133-176 Episodes, 177-220 Episodes, To Be Determined

Number of Anime in Each Category:
{'1-44 Episodes': 78, '45-88 Episodes': 17, '89-132 Episodes': 1, '133-176 Episodes': 1, '177-220
Episodes': 2, 'To Be Determined': 1}

Percentage of Anime in Each Category:
{'1-44 Episodes': 0.78, '45-88 Episodes': 0.17, '89-132 Episodes': 0.01, '133-176 Episodes': 0.01,
'177-220 Episodes': 0.02, 'To Be Determined': 0.01}

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Violetta Wang:

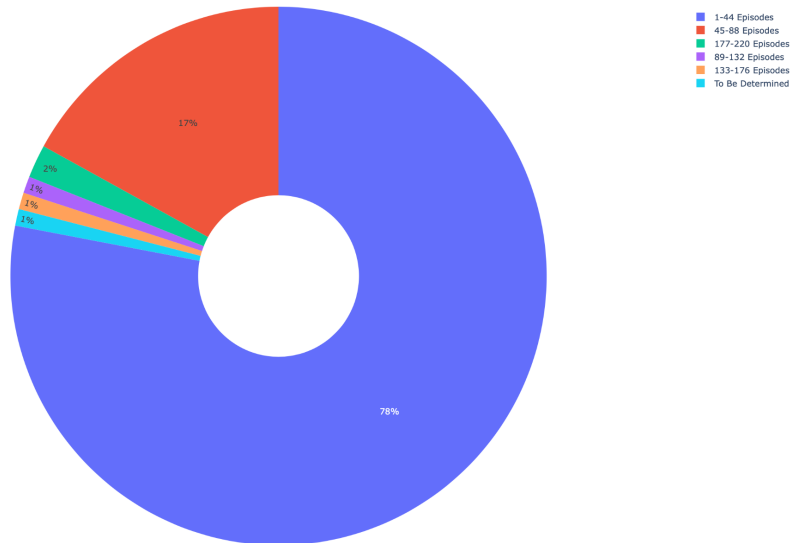
1	category: 0	====	post_count: 185
2	category: 1	====	post_count: 51
3	category: 3	====	post_count: 6
4	category: 4	====	post_count: 61
5	category: 5	====	post_count: 0
6			

## 5. The visualization that you created (i.e. screenshot or image file) (10 points)

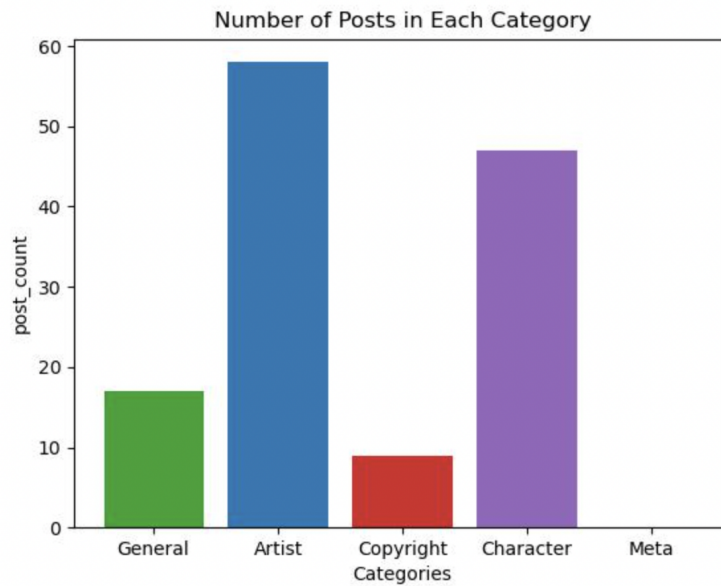
[The Visualizations Created by Zichen Zang](#)

The Visualization Created by Anca Fu

First 100 Anime in Kitsu by Episode Count



The Visualization Created by Violetta Wang:



## 6. Instructions for running your code (10 points)

### For AnimeChan:

1. First, run the *AnimeChan.py* 5 times to gather about 118 items in total into the database.
2. Then, run the *AnimeChanCalculation&Visualization.py* to do the calculations, output the results into the *AnimeChanCalculation.txt*, and generate the visualization graphs by Plotly.

### For Kitsu:

1. Run *Kitsu.py* four times to gather a total of 100 items into *Animeeee.db*.
2. Run *Kitsu (Calculations and Visualization).py* to do the calculations, output the calculation results into *KitsuCalculation.txt*, and generate the pie chart that is visualizing the calculated data by Plotly.

### For Danbooru Anime:

1. Run *Danbooru Anime.py* four times to gather a total of 100 items into *Animeeee.db*.
2. Run *Danbooru (Calculations and Visualization).py* to do the calculations, output the calculation results into *DanbooruCalculation.txt*, and generate the histogram that is visualizing the calculated data by Plotly.

## 7. Documentation for each function that you wrote. This includes describing the input and output for each function (20 points)

☰ AnimeChan Functions Documentation

☰ Kitsu Functions Documentation

☰ Danbooru Anime Functions Documentation

## 8. You must also clearly document all resources you used. The documentation should be of the following form (20 points)

Date	Issue Description	Location of Resource	Result (did it solve the issue)
04/15	How to get the MAX id from the current table (AnimeChan.py)	<a href="#">How do I select an entire row which has the largest ID in the table? - Stack</a>	Yes, solve the issue

		<a href="#">Overflow</a>	
04/15	Why always showing “JSONDecodeError: Expecting value: line 1 column 1 (char 0)” (AnimeChan.py)	<a href="#">JSONDecodeError: Expecting value: line 1 column 1 (char 0) - Stack Overflow</a>	Yes, solve the issue
04/17	How to create a series of pie charts with different titles (AnimeChanCalculation&Visualiz ation.py)	<a href="#">Pie charts in Python</a>	Yes, solve the issue
4.17	How to get the next row of a query result set after 25 items is inserted each time the file is run (Kitsu.py)	<a href="#">Python db-api: fetchone vs fetchmany vs fetchall - Stack Overflow</a>	Yes, solve the issue
4.17	How to access the result set of each selected row and storing them into a list (Kitsu (Calculations and Visualization).py)	<a href="#">Python SQLite3 / Selecting rows from table - Stack Overflow</a>	Yes, solve the issue
4.18	How to make a pie chart with a hole in the middle with the calculated data (Kitsu (Calculations and Visualization).py)	<a href="#">How to create a Pie Chart in Plotly Python - Life With Data</a>	Yes, solve the issue
4.17	How to get access to data from API (DanbooruAnime.py)	<a href="#">Gain Json data by using requests</a>	Yes, solve the issue
4.17	How to make the requested data become JSON format	<a href="#">selenium automates browsers</a>	Yes, solve the issue

	(DanbooruAnime.py)		
4.18	How to request more items from API (DanbooruAnime.py)	<a href="#">Danbooru help:api(locked)</a>	Yes, solve the issue
4.18	How to create histogram with different color in each bar (DanbooruCalculation&Visualizati on.py)	<a href="#">Matplotlib: bar color demo</a>	Yes, solve the issue