Final Project Checklist

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Project code

https://github.com/lishujie18/507_final_project.git

Data sources

1. Billboard website: https://www.billboard.com/
- Billboard website contains various music information like charts, news, video, photos.
- Access technique: Beautiful Soup HTML parser.
- Caching is used when access the data.
- Data summary: Billboard data include top 13 popular charts, and user can choose a chart to look at, then the system would print top 20 items on the chart.

The Billboard data are showed on the right.

Each billboard chart is a chart instant which has chart name, chart URL and detail ranking information.

And each ranking item on the chart is also an item instance which contain name, info, rank.

```python
class Chart:

    def __init__(self, name, url):
        self.name = name
        self.url = url
        self.rank_dic = None
```

```python
class Item:

    def __init__(self, name, info, rank):
        self.name = name
        self.info = info
        self.rank = rank
        self.youtube_info = None

    def content(self):
        return f"rank{self.rank}: {self.name} ({self.info})"
```

```
[1]: The Hot 100
[2]: Billboard 200
[3]: Artist 100
[4]: Social 50
[5]: Streaming Songs
[6]: Radio Songs
[7]: Digital Song Sales
[8]: Top Album Sales
[9]: Top Current Album Sales
[10]: Catalog Albums
[11]: Independent Albums
[12]: Soundtracks
[13]: Vinyl Albums
Using Cache
rank1: Leave The Door Open (Silk Sonic (Bruno Mars & Anderson .Paak))
rank2: Montero (Call Me By Your Name) (Lil Nas X)
rank3: Peaches (Justin Bieber Featuring Daniel Caesar & Giveon)
rank4: Up (Cardi B)
rank5: Drivers License (Olivia Rodrigo)
rank6: Save Your Tears (The Weeknd)
rank7: Levitating (Dua Lipa Featuring DaBaby)
rank8: Deja Vu (Olivia Rodrigo)
rank9: Blinding Lights (The Weeknd)
rank10: Astronaut In The Ocean (Masked Wolf)
rank11: Calling My Phone (Lil Tjay Featuring 6LACK)
rank12: What You Know Bout Love (Pop Smoke)
rank13: Mood (24kGoldn Featuring iann dior)
rank14: Best Friend (Saweetie Featuring Doja Cat)
rank15: 34+35 (Ariana Grande)
rank16: Go Crazy (Chris Brown & Young Thug)
rank17: What's Next (Drake)
rank18: Back In Blood (Pooh Shiesty Featuring Lil Durk)
rank19: Beat Box (SpotemGottem Featuring Pooh Shiesty Or DaBaby)
rank20: Therefore I Am (Billie Eilish)
```

2. YouTube API: https://developers.google.com/youtube/v3/docs/search/list
- YouTube API can be used to search for videos matching specific search terms, topics, locations, publication dates, and much more.
- Access technique: API request.
- Caching is used when access the data.
- Data summary: once user chooses a ranking item on a specific billboard chart, he can get top 20 view counts video related to that ranking item.
- Each video item is a video instance which contain name, videoed, view, counts like counts, and dislike counts

3. Caching evidence:

```python
class Video:

baseurl = 'https://www.billboard.com'
chart_url = 'https://www.billboard.com/charts'
response = make_request_with_cache(chart_url)
        self.views = views
        self.likes = likes
        self.dislikes = dislikes
```

```python
response = make_request_with_cache(url)
soup = BeautifulSoup(response, 'html.parser')
rank_list = soup.find(class_='chart-list__elements').find_all('li', recursive=False)[0:20]
rank_dic = {}
```

```python
baseurl = 'https://www.googleapis.com/youtube/v3/search'
params = {'key': secrets.API_KEY, 'part': 'snippet', 'q': name, 'maxResults': 20, 'type': 'video', 'order': 'viewCount'}
response = make_request_with_cache(baseurl, params)
```

```
Using Cache
rank1: Leave The Door Open (Silk Sonic (Bruno Mars & Anderson .Paak))
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```

Database

1. Database schema:

```sql
CREATE TABLE IF NOT EXISTS "{name}" (
"Id" INTEGER PRIMARY KEY AUTOINCREMENT
UNIQUE,
"VideoName" TEXT NOT NULL,
"VideoId" TEXT NOT NULL,
"Views" INTEGER NOT NULL,
"Likes" INTEGER NOT NULL,
"Dislikes" INTEGER NOT NULL)
```

* table name is search term
(the name of the ranking item)

2. Database data:
The image on the right shows the data collected in the database.

Id	VideoName	VideoId	Views	Likes	Dislikes
Fi...	Filter	Filter	Filter	Filter	Filter
1	1	Bruno Mars, Anderson .Paak, Silk Sonic - Leave the Door ...	adLGHcj_fmA	143528200	3175231	32285
2	2	Leave The Door Open	-7acBvpE2yk	20195099	287971	10020
3	3	Bruno Mars, Anderson .Paak, Silk Sonic - Leave the Door ...	_d4yW6Lz_1o	7198274	244017	2179
4	4	Bruno Mars, Anderson .Paak - Leave The Door Open (Lyrics)	Y0ScH6M_x_g	6841412	110869	1459
5	5	Bruno Mars, Anderson .Paak, Silk Sonic - Leave the Door ...	2vtos1qUnvE	4010562	93334	893
6	6	Bruno Mars, Anderson .Paak, Silk Sonic - Leave the Door ...	ItZZ3M2zQRw	3670267	0	0
7	7	YOU LEFT YOUR DOOR OPEN LAST NIGHT...	Tiny Bunny	KPeVzyK-v_U	3351283	193385	1269
8	8	Bruno Mars, Anderson .Paak, Silk Sonic - Leave the Door ...	AF5laB2_Tk4	2456180	46599	521
9	9	Bruno Mars - Leave The Door Open (ft. Anderson Paak) [1 ...	7cO97JIBbgk	2168665	16682	634
10	10	แปลเพลง Leave the Door Open - Bruno Mars, Anderson ...	UM2dCbBkK8s	1617511	34713	194
11	11	Bruno Mars, Anderson .Paak, Silk Sonic - Leave the Door ...	wnUK9zvtFLg	1627716	73844	412
12	12	BRUNO MARS, ANDERSON .PAAK, SILK SONIC - Leave Th...	C5pH24fF7O0	1327729	52016	1200
13	13	Bruno Mars & Anderson Paak [Silk Sonic] Leave the ...	9FDOtZN-Ivl	1328064	45033	198
14	14	Bruno Mars, Anderson .Paak, Silk Sonic - Leave The Door ...	5JDewVoityQ	1324052	60026	380
15	15	Silk Sonic: "Leave the Door Open" with Bruno Mars and ...	thPqhXjZa4M	1296369	38323	182
16	16	เปิดประตูทิ้งไว้ - Bruno Mars, Anderson .Paak, Silk Sonic [Th...	gueP6Cwl1PQ	1251576	49884	509
17	17	Vocal Coach Reacts to Bruno Mars & Anderson Paak -...	xg8hMIYucTA	1110992	45992	590
18	18	Bruno Mars, Anderson Paak (Silk Sonic) - Leave the Door ...	_2xUwX9bgrM	922967	41183	187
19	19	แปลเพลง Leave the Door Open - Bruno Mars, Anderson ...	v1YtsqpLk4g	866125	23434	137
20	20	MARK - LEAVE THE DOOR OPEN - SPEKTA SHOW TOP 4 -...	jV55mHuRI9E	696356	22627	534

Interaction and Presentation Plans

1. Interaction plan:

The system will first show top 12 popular billboard chart, and user can choose on chart to look at. Then the system will display the ranking information about the chart (top 20 items), And user can choose an item to see the detail information.

The detail information is the top 20 video information about the item, including the views, likes, dislikes of each video

2. Presentation: a stack bar plot shows the like and dislike counts for each video.