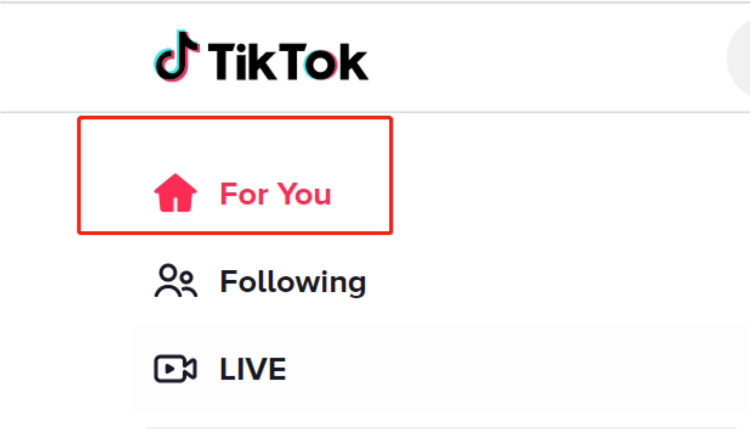
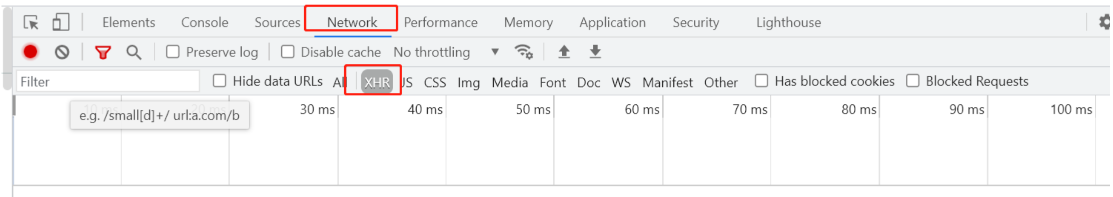
This is the design document for this crawler. I will record the process of how I designed and coded it.

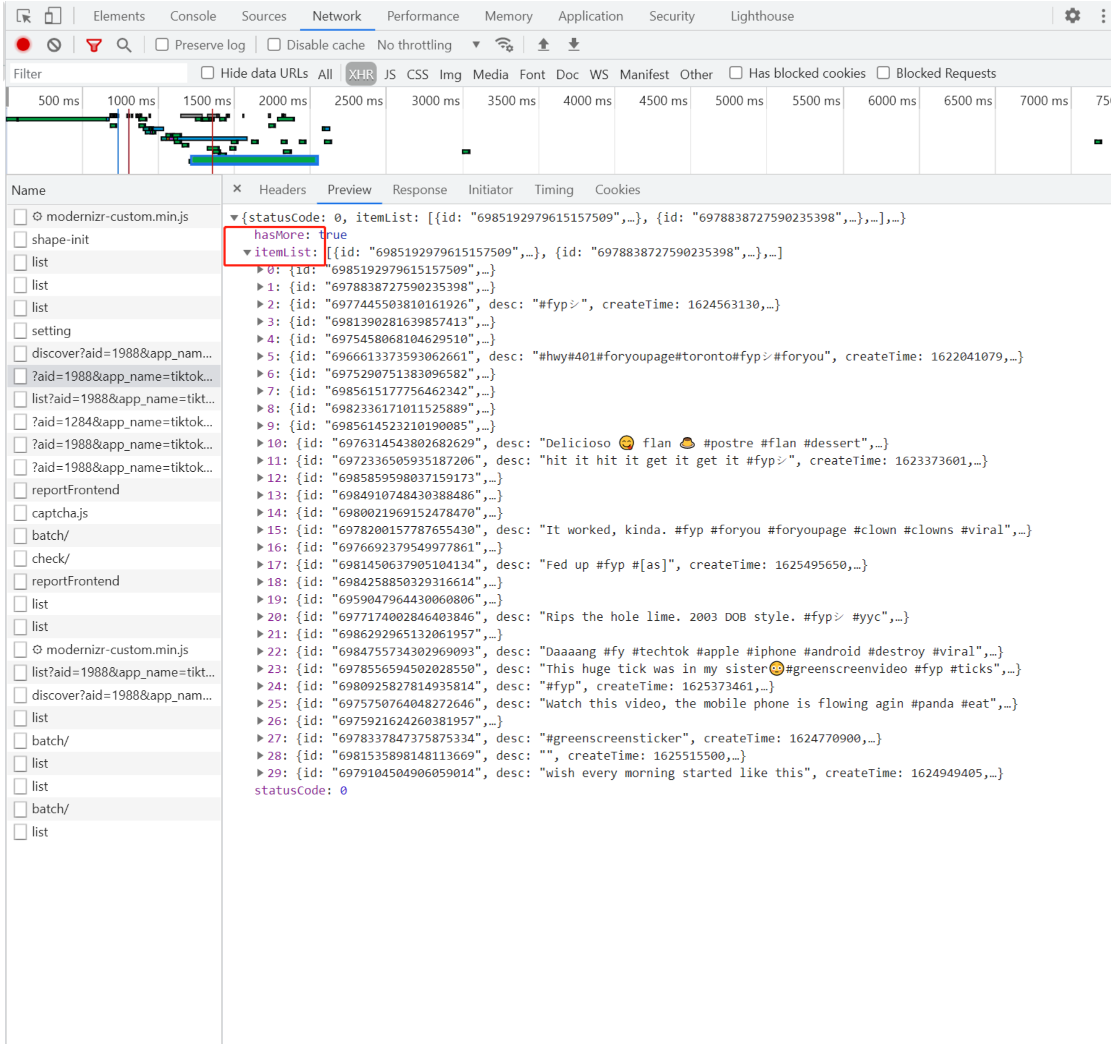
1. Open TikTok in your browser (Chrome prefer) and go to the **For You** page.



2. Go to Inspect and open the Network tab on top, then click on the XHR.

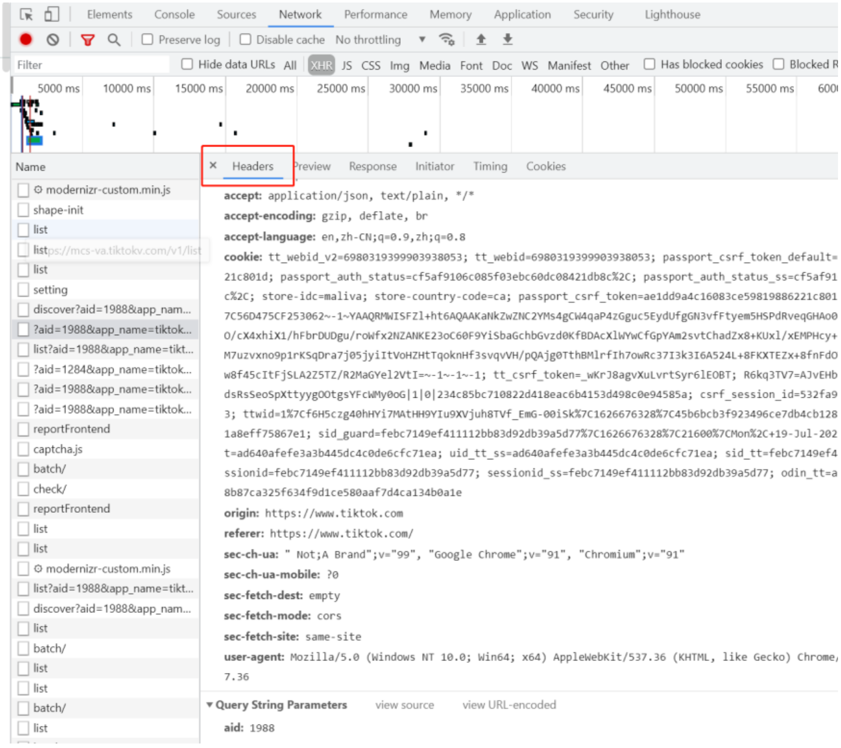


3. Refresh the page to reload. Find the API for the video list. The API is called itemList.



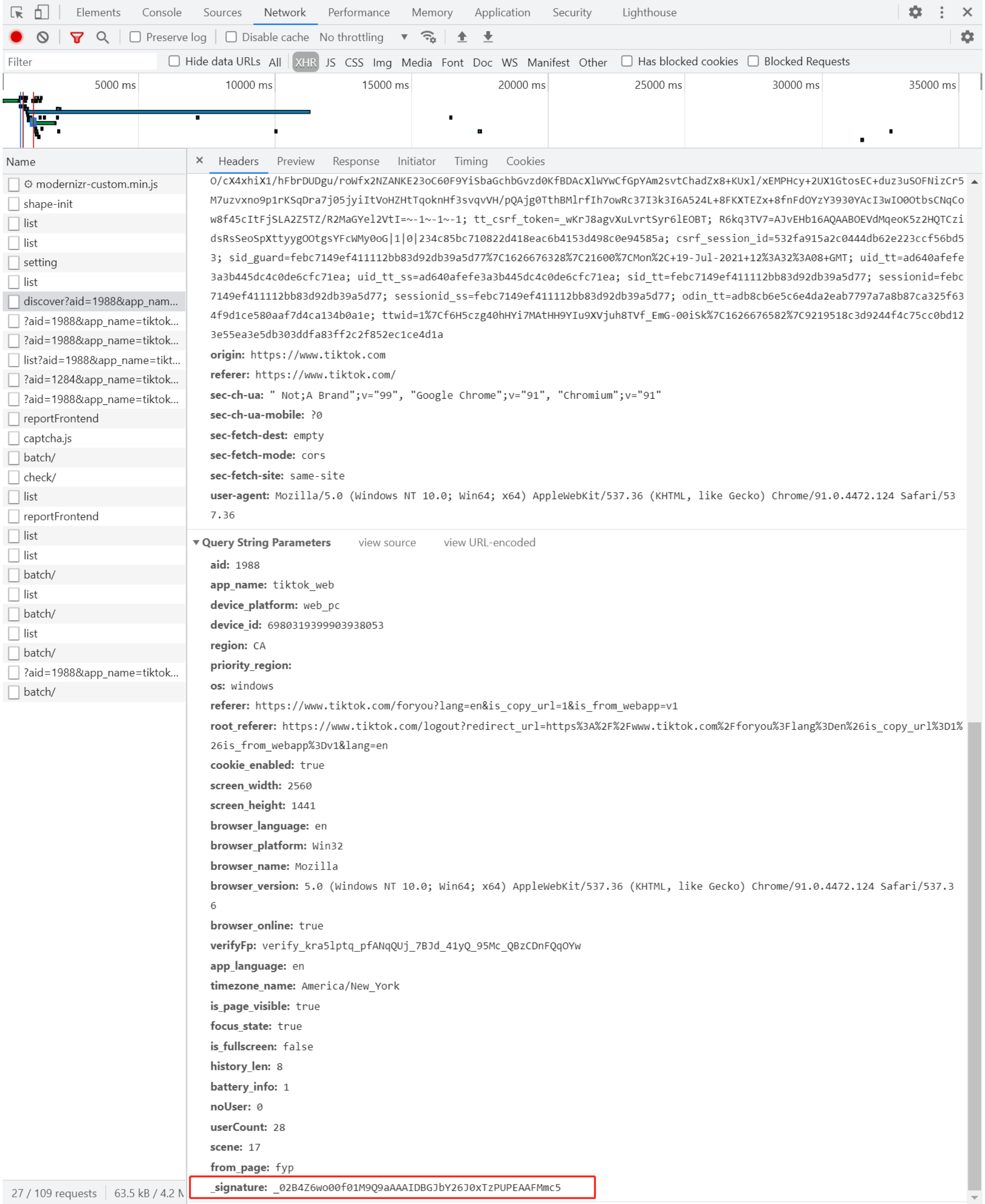
```
▼{statusCode: 0, itemList: [{id: "6985192979615157509",…}, {id: "6978838727590235398",…},…],…}
   hasMore: true
  ▼itemList: [{id: "6985192979615157509",…}, {id: "6978838727590235398",…},…]
    ▶0: {id: "6985192979615157509",…}
    ▶1: {id: "6978838727590235398",…}
    ▶2: {id: "6977445503810161926", desc: "#fypシ", createTime: 1624563130,…}
    ▶3: {id: "6981390281639857413",…}
    ▶4: {id: "6975458068104629510",…}
    ▶5: {id: "6966613373593062661", desc: "#hwy#401#foryoupage#toronto#fypシ#foryou", createTime: 1622041079,…}
    ▶6: {id: "6975290751383096582",…}
    ▶7: {id: "6985615177756462342",…}
    ▶8: {id: "6982336171011525889",…}
    ▶9: {id: "6985614523210190085",…}
    ▶10: {id: "6976314543802682629", desc: "Delicioso 😋 flan 🍮 #postre #flan #dessert",…}
    ▶11: {id: "6972336505935187206", desc: "hit it hit it get it get it #fypシ", createTime: 1623373601,…}
    ▶12: {id: "6985859598037159173",…}
    ▶13: {id: "6984910748430388486",…}
    ▶14: {id: "6980021969152478470",…}
    ▶15: {id: "6978200157787655430", desc: "It worked, kinda. #fyp #foryou #foryoupage #clown #clowns #viral",…}
    ▶16: {id: "6976692379549977861",…}
    ▶17: {id: "6981450637905104134", desc: "Fed up #fyp #[as]", createTime: 1625495650,…}
    ▶18: {id: "6984258850329316614",…}
    ▶19: {id: "6959047964430060806",…}
    ▶20: {id: "6977174002846403846", desc: "Rips the hole lime. 2003 DOB style. #fypシ #yyc",…}
    ▶21: {id: "6986292965132061957",…}
    ▶22: {id: "6984755734302969093", desc: "Daaaang #fy #techtok #apple #iphone #android #destroy #viral",…}
    ▶23: {id: "6978556594502028550", desc: "This huge tick was in my sister😳#greenscreenvideo #fyp #ticks",…}
    ▶24: {id: "6980925827814935814", desc: "#fyp", createTime: 1625373461,…}
    ▶25: {id: "6975750764048272646", desc: "Watch this video, the mobile phone is flowing agin #panda #eat",…}
    ▶26: {id: "6975921624260381957",…}
    ▶27: {id: "6978337847375875334", desc: "#greenscreensticker", createTime: 1624770900,…}
    ▶28: {id: "6981535898148113669", desc: "", createTime: 1625515500,…}
    ▶29: {id: "6979104504906059014", desc: "wish every morning started like this", createTime: 1624949405,…}
   statusCode: 0
```

4. However, there are only under 30 videos in this list so what we need to do is to scroll down to the next page. To do this, we need to find the variable related to the page number. This variable usually would be saved in the headers.



```
accept: application/json, text/plain, */*
accept-encoding: gzip, deflate, br
accept-language: en,zh-CN;q=0.9,zh;q=0.8
cookie: tt_webid_v2=6980319399903938053; tt_webid=6980319399903938053; passport_csrf_token_default=
21c801d; passport_auth_status=cf5af9106c085f03ebc60dc08421db8c%2C; passport_auth_status_ss=cf5af91
c%2C; store-idc=maliva; store-country-code=ca; passport_csrf_token=ae1dd9a4c16083ce5981988622 1c801
7C56D475CF253062~-1~YAAQRMWISFZl+ht6AQAAKaNkZwZNC2YMs4gCW4qaP4zGguc5EydUfgGN3vfFtyem5HSPdRveqGHAo0
O/cX4xhiX1/hFbrDUDgu/roWfx2NZANKE23oC60F9YiSbaGchbGvzd0KfBDAcXlWYwCfGpYAm2svtChadZx8+KUxl/xEMPHcy+
M7uzvxno9p1rKSqDra7j05jyiItVoHZHtTqoknHf3svqvVH/pQAjg0TthBMlrfIh7owRc37I3k3I6A524L+8FKXTEZx+8fnFdO
w8f45cItFjSLA2Z5TZ/R2MaGYel2VtI=~-1~-1~-1; tt_csrf_token=_wKrJ8agvXuLvrtSyr6lEOBT; R6kq3TV7=AJvEHb
dsRsSeoSpXttyygOOtgsYFcWMy0oG|1|0|234c85bc710822d418eac6b4153d498c0e94585a; csrf_session_id=532fa9
3; ttwid=1%7Cf6H5czg40hHYi7MAtHH9YIu9XVjuh8TVf_EmG-00iSk%7C1626676328%7C45b6bcb3f923496ce7db4cb128
1a8eff75867e1; sid_guard=febc7149ef411112bb83d92db39a5d77%7C1626676328%7C21600%7CMon%2C+19-Jul-202
t=ad640afefe3a3b445dc4c0de6cfc71ea; uid_tt_ss=ad640afefe3a3b445dc4c0de6cfc71ea; sid_tt=febc7149ef4
ssionid=febc7149ef411112bb83d92db39a5d77; sessionid_ss=febc7149ef411112bb83d92db39a5d77; odin_tt=a
8b87ca325f634f9d1ce580aaf7d4ca134b0a1e
origin: https://www.tiktok.com
referer: https://www.tiktok.com/
sec-ch-ua: " Not;A Brand";v="99", "Google Chrome";v="91", "Chromium";v="91"
sec-ch-ua-mobile: ?0
sec-fetch-dest: empty
sec-fetch-mode: cors
sec-fetch-site: same-site
user-agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/
7.36
▼ Query String Parameters    view source    view URL-encoded
aid: 1988
```

What we need to do now is to scroll your browser to go to the next page and refresh the browser to see which variable is changed. After doing so, I realized that the only variable changing is the one at the end called _signature

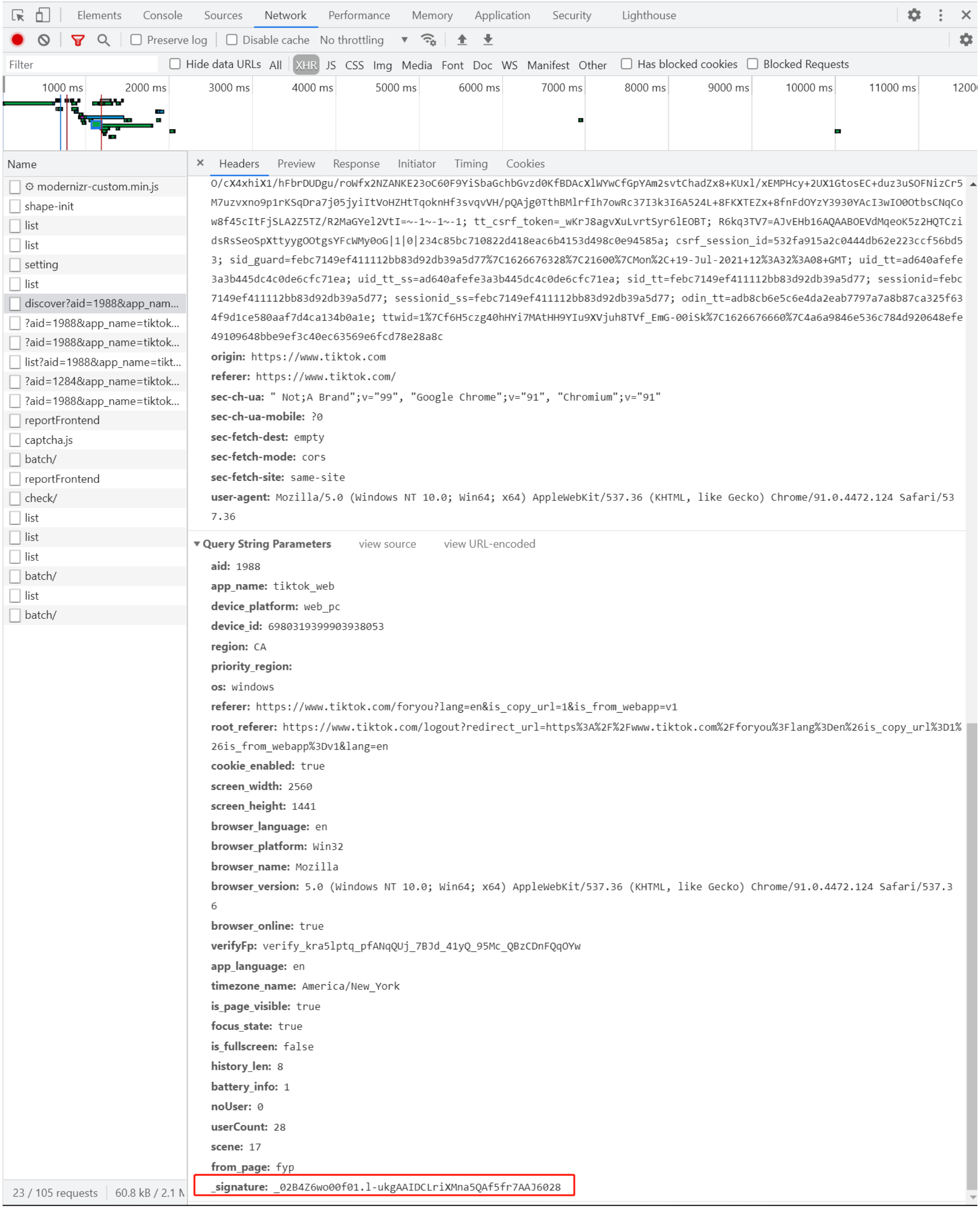


```
modernizr-custom.min.js
shape-init
list
list
setting
list
discover?aid=1988&app_nam...
?aid=1988&app_name=tiktok...
?aid=1988&app_name=tiktok...
list?aid=1988&app_name=tikt...
?aid=1284&app_name=tiktok...
?aid=1988&app_name=tiktok...
reportFrontend
captcha.js
batch/
check/
list
reportFrontend
list
list
batch/
list
batch/
list
batch/
?aid=1988&app_name=tiktok...
batch/
```

```
0/cX4xhiX1/hFbrDUDgu/roWfx2NZANKE23oC60F9YiSbaGchbGvzd0KfBDAcXlWYwCfGpYAm2svtChadZx8+KUxl/xEMPHcy+2UX1GtosEC+duz3uSOFNizCr5
M7uzvxno9p1rKSqDra7j05jyiItVoHZHtTqoknHf3svqvVH/pQAjg0TthBMlrfIh7owRc37I3k3I6A524L+8FKXTEZx+8fnFdOYzY3930YAcI3wIO0OtbsCNqCo
w8f45cItFjSLA2Z5TZ/R2MaGYel2VtI=~-1~-1~-1; tt_csrf_token=_wKrJ8agvXuLvrtSyr6lEOBT; R6kq3TV7=AJvEHb16AQAABOEVdMqeoK5z2HQTCzi
dsRsSeoSpXttyygOOtgsYFcWMy0oG|1|0|234c85bc710822d418eac6b4153d498c0e94585a; csrf_session_id=532fa915a2c0444db62e223ccf56bd5
3; sid_guard=febc7149ef411112bb83d92db39a5d77%7C1626676328%7C21600%7CMon%2C+19-Jul-2021+12%3A32%3A08+GMT; uid_tt=ad640afefe
3a3b445dc4c0de6cfc71ea; uid_tt_ss=ad640afefe3a3b445dc4c0de6cfc71ea; sid_tt=febc7149ef411112bb83d92db39a5d77; sessionid=febc
7149ef411112bb83d92db39a5d77; sessionid_ss=febc7149ef411112bb83d92db39a5d77; odin_tt=adb8cb6e5c6e4da2eab7797a7a8b87ca325f63
4f9d1ce580aaf7d4ca134b0a1e; ttwid=1%7Cf6H5czg40hHYi7MAtHH9YIu9XVjuh8TVf_EmG-00iSk%7C1626676582%7C9219518c3d9244f4c75cc0bd12
3e55ea3e5db303ddfa83ff2c2f852ec1ce4d1a
origin: https://www.tiktok.com
referer: https://www.tiktok.com/
sec-ch-ua: " Not;A Brand";v="99", "Google Chrome";v="91", "Chromium";v="91"
sec-ch-ua-mobile: ?0
sec-fetch-dest: empty
sec-fetch-mode: cors
sec-fetch-site: same-site
user-agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/91.0.4472.124 Safari/53
7.36
```

▼ **Query String Parameters**   view source   view URL-encoded

```
aid: 1988
app_name: tiktok_web
device_platform: web_pc
device_id: 6980319399903938053
region: CA
priority_region:
os: windows
referer: https://www.tiktok.com/foryou?lang=en&is_copy_url=1&is_from_webapp=v1
root_referer: https://www.tiktok.com/logout?redirect_url=https%3A%2F%2Fwww.tiktok.com%2Fforyou%3Flang%3Den%26is_copy_url%3D1%
26is_from_webapp%3Dv1&lang=en
cookie_enabled: true
screen_width: 2560
screen_height: 1441
browser_language: en
browser_platform: Win32
browser_name: Mozilla
browser_version: 5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/91.0.4472.124 Safari/537.3
6
browser_online: true
verifyFp: verify_kra5lptq_pfANqQUj_7BJd_41yQ_95Mc_QBzCDnFQqOYw
app_language: en
timezone_name: America/New_York
is_page_visible: true
focus_state: true
is_fullscreen: false
history_len: 8
battery_info: 1
noUser: 0
userCount: 28
scene: 17
from_page: fyp
_signature: _02B4Z6wo00f01M9Q9aAAAIDBGJbY26J0xTzPUPEAAFMmc5
```

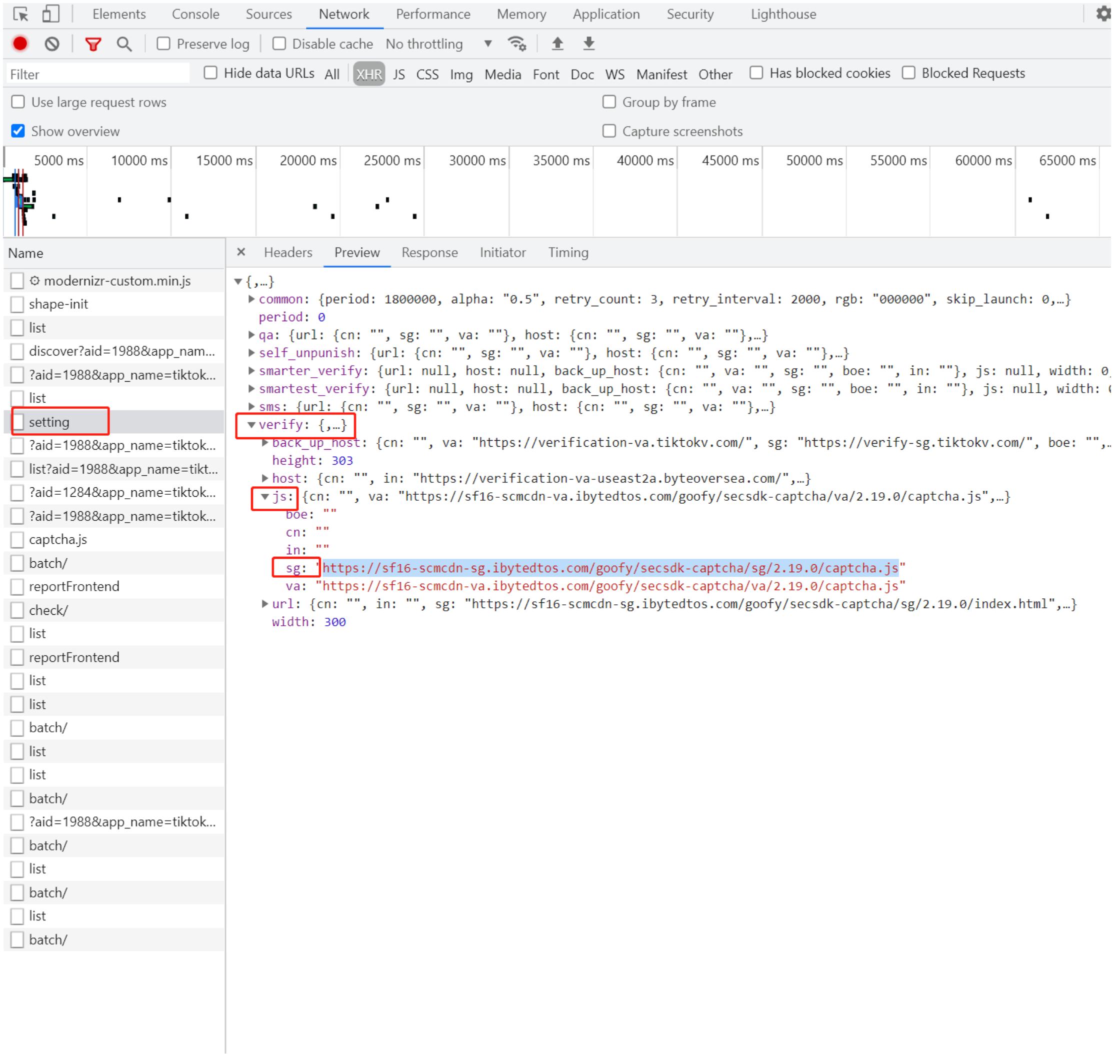


```
0/cX4xhiX1/hFbrDUDgu/roWfx2NZANKE23oC60F9YiSbaGchbGvzd0KfBDAcXlWYwCfGpYAm2svtChadZx8+KUxl/xEMPHcy+2UX1GtosEC+duz3uSOFNizCr5
M7uzvxno9p1rKSqDra7j05jyiItVoHZHtTqoknHf3svqvVH/pQAjg0TthBMlrfIh7owRc37I3k3I6A524L+8FKXTEZx+8fnFdOYzY3930YAcI3wIO0OtbsCNqCo
w8f45cItFjSLA2Z5TZ/R2MaGYel2VtI=~-1~-1~-1; tt_csrf_token=_wKrJ8agvXuLvrtSyr6lEOBT; R6kq3TV7=AJvEHb16AQAABOEVdMqeoK5z2HQTCzi
dsRsSeoSpXttyygOOtgsYFcWMy0oG|1|0|234c85bc710822d418eac6b4153d498c0e94585a; csrf_session_id=532fa915a2c0444db62e223ccf56bd5
3; sid_guard=febc7149ef411112bb83d92db39a5d77%7C1626676328%7C21600%7CMon%2C+19-Jul-2021+12%3A32%3A08+GMT; uid_tt=ad640afefe
3a3b445dc4c0de6cfc71ea; uid_tt_ss=ad640afefe3a3b445dc4c0de6cfc71ea; sid_tt=febc7149ef411112bb83d92db39a5d77; sessionid=febc
7149ef411112bb83d92db39a5d77; sessionid_ss=febc7149ef411112bb83d92db39a5d77; odin_tt=adb8cb6e5c6e4da2eab7797a7a8b87ca325f63
4f9d1ce580aaf7d4ca134b0a1e; ttwid=1%7Cf6H5czg40hHYi7MAtHH9YIu9XVjuh8TVf_EmG-00iSk%7C1626676660%7C4a6a9846e536c784d920648efe
49109648bbe9ef3c40ec63569e6fcd78e28a8c
origin: https://www.tiktok.com
referer: https://www.tiktok.com/
sec-ch-ua: " Not;A Brand";v="99", "Google Chrome";v="91", "Chromium";v="91"
sec-ch-ua-mobile: ?0
sec-fetch-dest: empty
sec-fetch-mode: cors
sec-fetch-site: same-site
user-agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/91.0.4472.124 Safari/53
7.36
```

▼ Query String Parameters   view source   view URL-encoded

```
aid: 1988
app_name: tiktok_web
device_platform: web_pc
device_id: 6980319399903938053
region: CA
priority_region:
os: windows
referer: https://www.tiktok.com/foryou?lang=en&is_copy_url=1&is_from_webapp=v1
root_referer: https://www.tiktok.com/logout?redirect_url=https%3A%2F%2Fwww.tiktok.com%2Fforyou%3Flang%3Den%26is_copy_url%3D1%
26is_from_webapp%3Dv1&lang=en
cookie_enabled: true
screen_width: 2560
screen_height: 1441
browser_language: en
browser_platform: Win32
browser_name: Mozilla
browser_version: 5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/91.0.4472.124 Safari/537.3
6
browser_online: true
verifyFp: verify_kra5lptq_pfANqQUj_7BJd_41yQ_95Mc_QBzCDnFQqOYw
app_language: en
timezone_name: America/New_York
is_page_visible: true
focus_state: true
is_fullscreen: false
history_len: 8
battery_info: 1
noUser: 0
userCount: 28
scene: 17
from_page: fyp
_signature: _02B4Z6wo00f01.l-ukgAAIDCLriXMna5QAf5fr7AAJ6028
```

Obviously, this is an encrypted variable. I found the encrypt method under setting->verify->js->sg



☐ Preserve log ☐ Disable cache ☐ Hide data URLs ☐ Has blocked cookies ☐ Blocked Requests ☐ Use large request rows ☐ Group by frame ☑ Show overview ☐ Capture screenshots

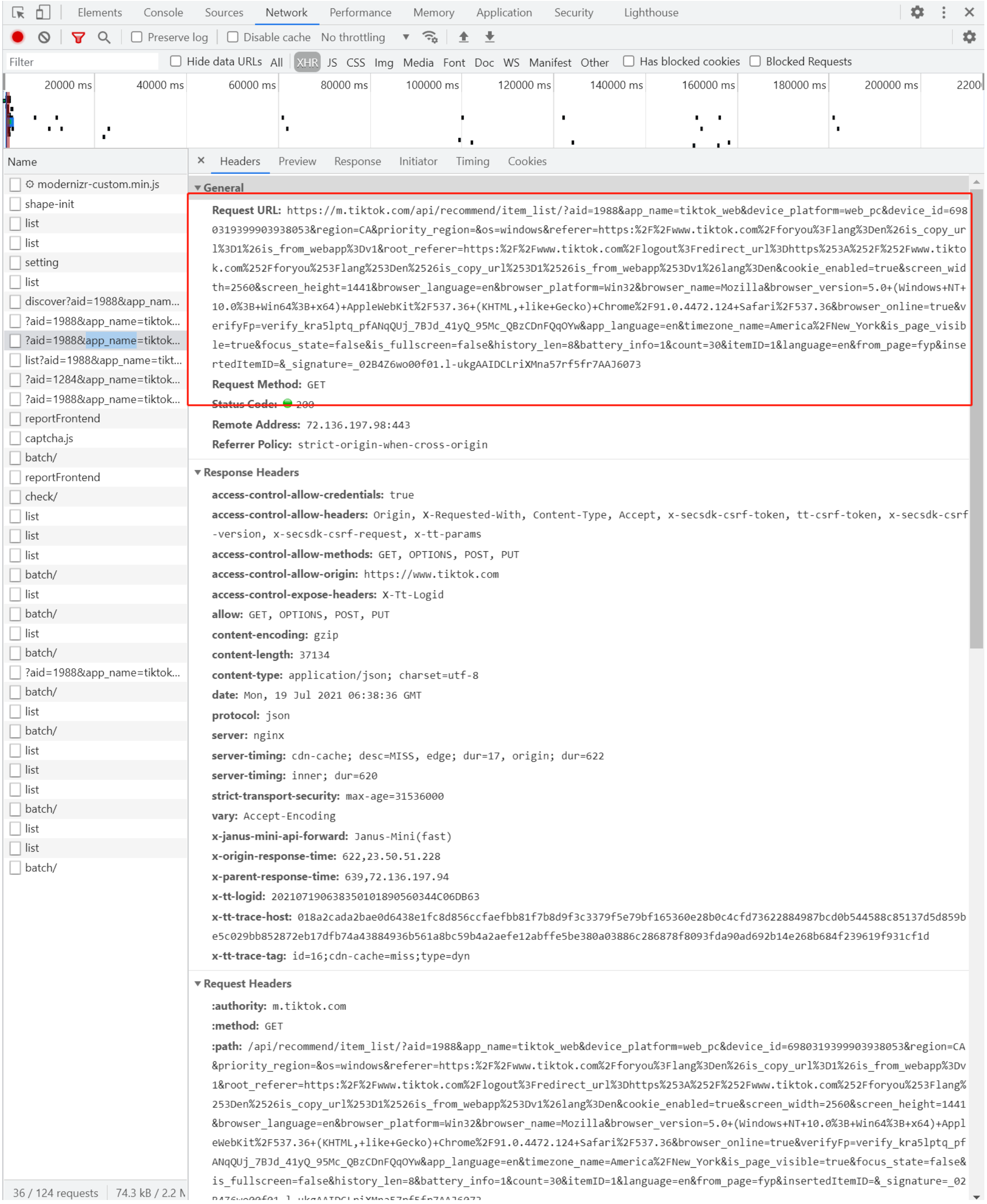
```
modernizr-custom.min.js
shape-init
list
discover?aid=1988&app_nam...
?aid=1988&app_name=tiktok...
list
setting
?aid=1988&app_name=tiktok...
list?aid=1988&app_name=tikt...
?aid=1284&app_name=tiktok...
?aid=1988&app_name=tiktok...
captcha.js
batch/
reportFrontend
check/
list
reportFrontend
list
list
batch/
list
list
batch/
?aid=1988&app_name=tiktok...
batch/
list
batch/
list
batch/
```

```
▼{,…}
  ▶common: {period: 1800000, alpha: "0.5", retry_count: 3, retry_interval: 2000, rgb: "000000", skip_launch: 0,…}
   period: 0
  ▶qa: {url: {cn: "", sg: "", va: ""}, host: {cn: "", sg: "", va: ""},…}
  ▶self_unpunish: {url: {cn: "", sg: "", va: ""}, host: {cn: "", sg: "", va: ""},…}
  ▶smarter_verify: {url: null, host: null, back_up_host: {cn: "", va: "", sg: "", boe: "", in: ""}, js: null, width: 0
  ▶smartest_verify: {url: null, host: null, back_up_host: {cn: "", va: "", sg: "", boe: "", in: ""}, js: null, width: (
  ▶sms: {url: {cn: "", sg: "", va: ""}, host: {cn: "", sg: "", va: ""},…}
  ▼verify: {,…}
    ▶back_up_host: {cn: "", va: "https://verification-va.tiktokv.com/", sg: "https://verify-sg.tiktokv.com/", boe: "",…
     height: 303
    ▶host: {cn: "", in: "https://verification-va-useast2a.byteoversea.com/",…}
    ▼js: {cn: "", va: "https://sf16-scmcdn-va.ibytedtos.com/goofy/secsdk-captcha/va/2.19.0/captcha.js",…}
       boe: ""
       cn: ""
       in: ""
       sg: "https://sf16-scmcdn-sg.ibytedtos.com/goofy/secsdk-captcha/sg/2.19.0/captcha.js"
       va: "https://sf16-scmcdn-va.ibytedtos.com/goofy/secsdk-captcha/va/2.19.0/captcha.js"
    ▶url: {cn: "", in: "", sg: "https://sf16-scmcdn-sg.ibytedtos.com/goofy/secsdk-captcha/sg/2.19.0/index.html",…}
     width: 300
```

Then we could open that file to see how it's encrypted.

Uhm never mind, this is absolutely out of my ability to decrypted it. Therefore, I choose to find some other way to fetch the data.

5. To do so, I first opened an URL with valid video list. (Notice, you can find it under the one has the itemList, just find that one and click on headers)



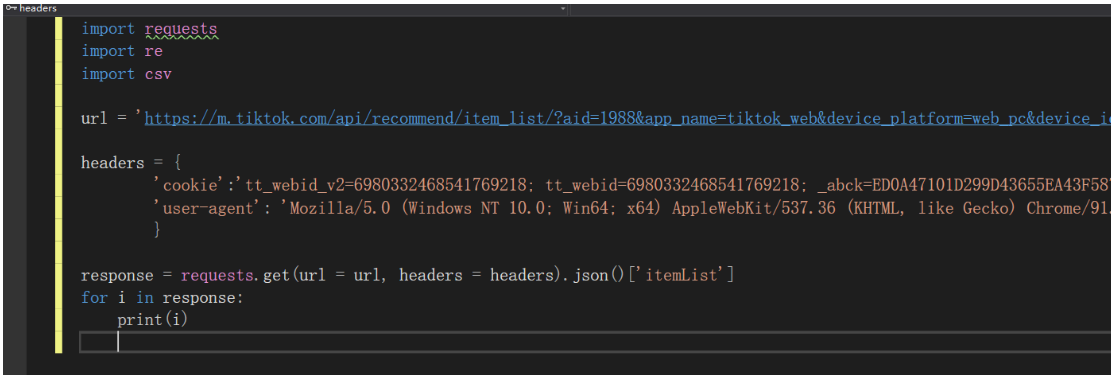
```
modernizr-custom.min.js
shape-init
list
list
setting
list
discover?aid=1988&app_nam...
?aid=1988&app_name=tiktok...
?aid=1988&app_name=tiktok...
list?aid=1988&app_name=tikt...
?aid=1284&app_name=tiktok...
?aid=1988&app_name=tiktok...
reportFrontend
captcha.js
batch/
reportFrontend
check/
list
list
list
batch/
list
batch/
list
batch/
?aid=1988&app_name=tiktok...
batch/
list
batch/
list
list
list
batch/
list
list
batch/
```

```
▼ General
Request URL: https://m.tiktok.com/api/recommend/item_list/?aid=1988&app_name=tiktok_web&device_platform=web_pc&device_id=6980319399903938053&region=CA&priority_region=&os=windows&referer=https:%2F%2Fwww.tiktok.com%2Fforyou%3Flang%3Den%26is_copy_url%3D1%26is_from_webapp%3Dv1&root_referer=https:%2F%2Fwww.tiktok.com%2Flogout%3Fredirect_url%3Dhttps%253A%252F%252Fwww.tiktok.com%252Fforyou%253Flang%253Den%2526is_copy_url%253D1%2526is_from_webapp%253Dv1%26lang%3Den&cookie_enabled=true&screen_width=2560&screen_height=1441&browser_language=en&browser_platform=Win32&browser_name=Mozilla&browser_version=5.0+(Windows+NT+10.0%3B+Win64%3B+x64)+AppleWebKit%2F537.36+(KHTML,+like+Gecko)+Chrome%2F91.0.4472.124+Safari%2F537.36&browser_online=true&verifyFp=verify_kra5lptq_pfANqQUj_7BJd_41yQ_95Mc_QBzCDnFQqOYw&app_language=en&timezone_name=America%2FNew_York&is_page_visible=true&focus_state=false&is_fullscreen=false&history_len=8&battery_info=1&count=30&itemID=1&language=en&from_page=fyp&insertedItemID=&_signature=_02B4Z6wo00f01.l-ukgAAIDCLriXMna57rf5fr7AAJ6073
Request Method: GET
Status Code: ● 200
Remote Address: 72.136.197.98:443
Referrer Policy: strict-origin-when-cross-origin
▼ Response Headers
access-control-allow-credentials: true
access-control-allow-headers: Origin, X-Requested-With, Content-Type, Accept, x-secsdk-csrf-token, tt-csrf-token, x-secsdk-csrf-version, x-secsdk-csrf-request, x-tt-params
access-control-allow-methods: GET, OPTIONS, POST, PUT
access-control-allow-origin: https://www.tiktok.com
access-control-expose-headers: X-Tt-Logid
allow: GET, OPTIONS, POST, PUT
content-encoding: gzip
content-length: 37134
content-type: application/json; charset=utf-8
date: Mon, 19 Jul 2021 06:38:36 GMT
protocol: json
server: nginx
server-timing: cdn-cache; desc=MISS, edge; dur=17, origin; dur=622
server-timing: inner; dur=620
strict-transport-security: max-age=31536000
vary: Accept-Encoding
x-janus-mini-api-forward: Janus-Mini(fast)
x-origin-response-time: 622,23.50.51.228
x-parent-response-time: 639,72.136.197.94
x-tt-logid: 20210719063835010189056O344C06DB63
x-tt-trace-host: 018a2cada2bae0d6438e1fc8d856ccfaefbb81f7b8d9f3c3379f5e79bf165360e28b0c4cfd73622884987bcd0b544588c85137d5d859be5c029bb852872eb17dfb74a43884936b561a8bc59b4a2aefe12abffe5be380a03886c286878f8093fda90ad692b14e268b684f239619f931cf1d
x-tt-trace-tag: id=16;cdn-cache=miss;type=dyn
▼ Request Headers
:authority: m.tiktok.com
:method: GET
:path: /api/recommend/item_list/?aid=1988&app_name=tiktok_web&device_platform=web_pc&device_id=6980319399903938053&region=CA&priority_region=&os=windows&referer=https:%2F%2Fwww.tiktok.com%2Fforyou%3Flang%3Den%26is_copy_url%3D1%26is_from_webapp%3Dv1&root_referer=https:%2F%2Fwww.tiktok.com%2Flogout%3Fredirect_url%3Dhttps%253A%252F%252Fwww.tiktok.com%252Fforyou%253Flang%253Den%2526is_copy_url%253D1%2526is_from_webapp%253Dv1%26lang%3Den&cookie_enabled=true&screen_width=2560&screen_height=1441&browser_language=en&browser_platform=Win32&browser_name=Mozilla&browser_version=5.0+(Windows+NT+10.0%3B+Win64%3B+x64)+AppleWebKit%2F537.36+(KHTML,+like+Gecko)+Chrome%2F91.0.4472.124+Safari%2F537.36&browser_online=true&verifyFp=verify_kra5lptq_pfANqQUj_7BJd_41yQ_95Mc_QBzCDnFQqOYw&app_language=en&timezone_name=America%2FNew_York&is_page_visible=true&focus_state=false&is_fullscreen=false&history_len=8&battery_info=1&count=30&itemID=1&language=en&from_page=fyp&insertedItemID=&_signature=_02
```

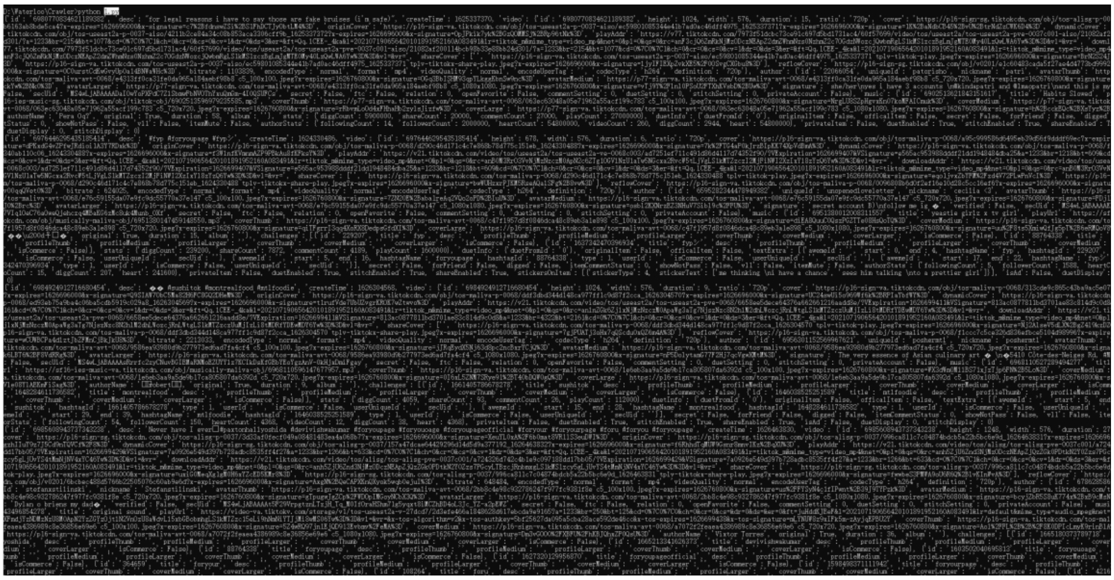
It should start with https://m.tiktok.com/api/recommend/item_list/.....

6. Then I tried to open this URL in my browser, and I noticed that videos I am getting from this same _signature variable are different. Which means I do not need to decrypt that variable to get different videos. However, this could cause a problem – I would probably get repeat videos since I am getting them all randomly. (I would discuss this problem later)

7. Try to request this URL



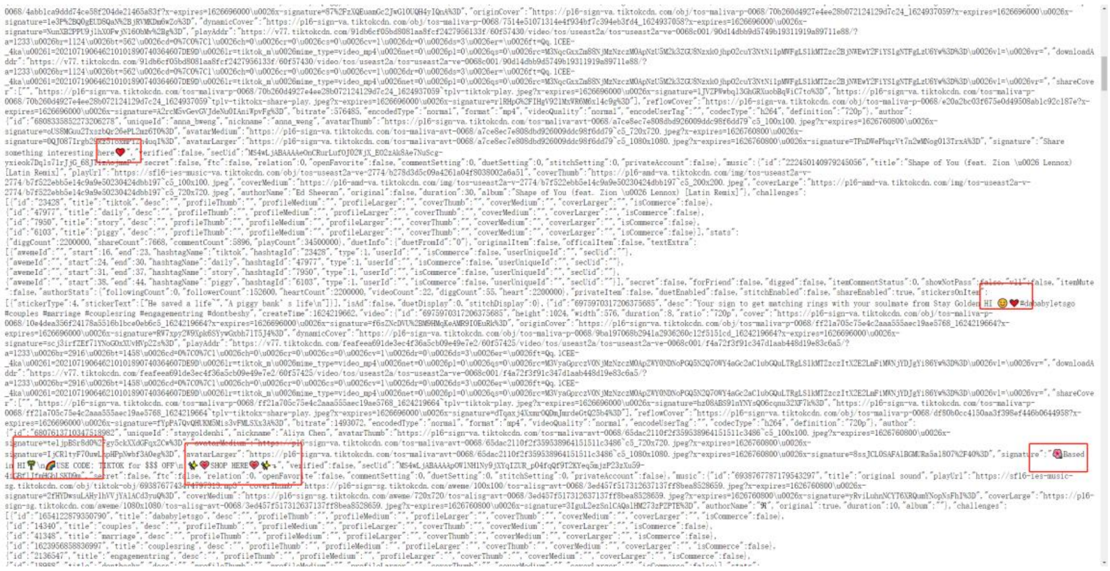
```python
import requests
import re
import csv

url = 'https://m.tiktok.com/api/recommend/item_list/?aid=1988&app_name=tiktok_web&device_platform=web_pc&device_i

headers = {
        'cookie':'tt_webid_v2=6980332468541769218; tt_webid=6980332468541769218; _abck=ED0A47101D299D43655EA43F58
        'user-agent': 'Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/91.
        }

response = requests.get(url = url, headers = headers).json()['itemList']
for i in response:
    print(i)
```



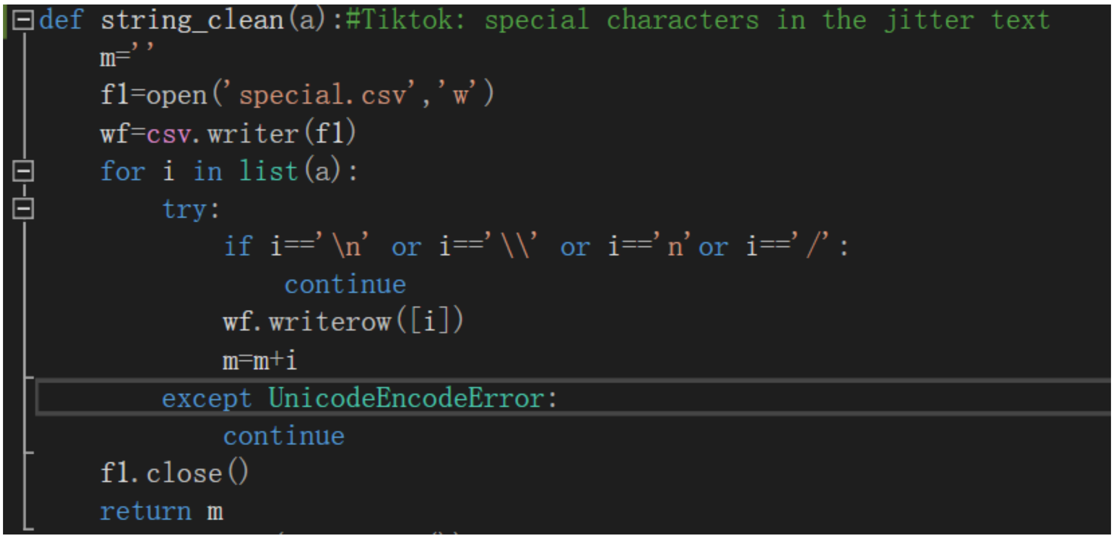
```
D:\Waterloo\Crawler>python 1.py
```

As we can see here, this URL is valid, and we could get data from it.

8. Then we just need to extract the info we need from these data and write in our csv file.
9. There is one problem we need to take care. Sometimes, there are emojis in the username or comment and they cannot be written into our csv file because of Unicode error.



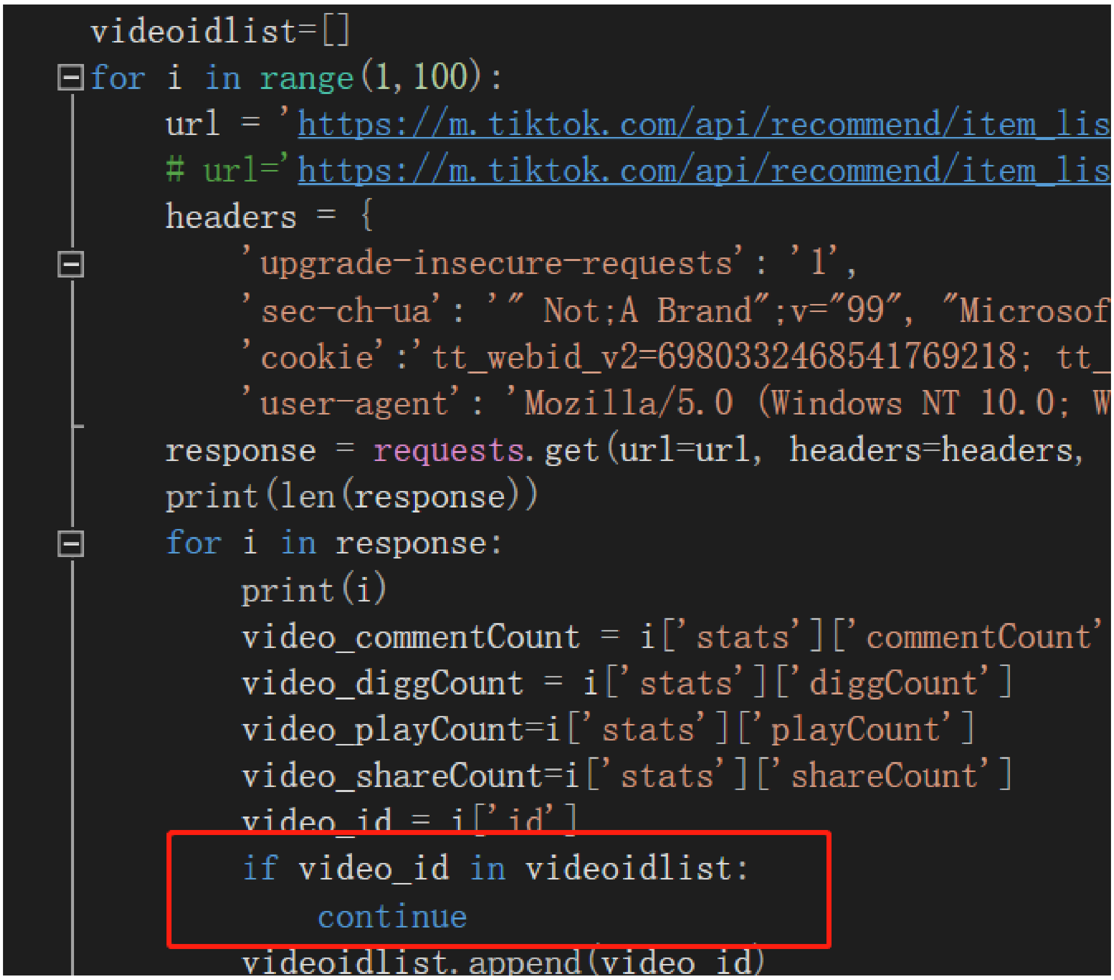
10. To solve this problem, we need to 'clean' the data we got.



```
def string_clean(a):#Tiktok: special characters in the jitter text
    m=’’
    f1=open(’special.csv’,’w’)
    wf=csv.writer(f1)
    for i in list(a):
        try:
            if i==’\n’ or i==’\\’ or i==’n’or i==’/’:
                continue
            wf.writerow([i])
            m=m+i
        except UnicodeEncodeError:
            continue
    f1.close()
    return m
```

If we are dealing with a special character, we just skip them.

11. Then we need to remove the redundant data(mentioned before in step 6).



```
    videoidlist=[]
    for i in range(1,100):
        url = ’https://m.tiktok.com/api/recommend/item_lis
        # url=’https://m.tiktok.com/api/recommend/item_lis
        headers = {
            ’upgrade-insecure-requests’: ’1’,
            ’sec-ch-ua’: ’” Not;A Brand”;v=”99”, ”Microsof
            ’cookie’:’tt_webid_v2=6980332468541769218; tt_
            ’user-agent’: ’Mozilla/5.0 (Windows NT 10.0; W
        response = requests.get(url=url, headers=headers,
        print(len(response))
        for i in response:
            print(i)
            video_commentCount = i[’stats’][’commentCount’
            video_diggCount = i[’stats’][’diggCount’]
            video_playCount=i[’stats’][’playCount’]
            video_shareCount=i[’stats’][’shareCount’]
            video_id = i[’id’]
            if video_id in videoidlist:
                continue
            videoidlist.append(video_id)
```

If the video is already fetched, we just skip it, otherwise, add this video’s id to our list.

12. It could fetch under 30 videos in this process, so we just add a large for loop outside.