

computing platform for

REAL TIME SOCIAL MEDIA APPLICATIONS

made with all of the love in the world by

ALEX TOUGH

with special thanks to the endless patience of

PETER MARBACH

LARRY ZHANG

SO MANY FEEDS, SO MANY INTERESTS. HOW TO ORGANIZE THEM?





GATHER 'EM AND FILTER 'EM!

KENSOO **My Feeds** [Add Content](#) [Profile](#) [Logout](#)

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China, base metal tiger, sets the trend for metals [weblink](#) (via @resourceinvesto)
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Before the bell: S&P futures +0.52%, Nasdaq futures +0.52%: U.S. stock-index futures rose as the start of corp... [weblink](#)
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Japan cites China, North Korea tensions in defense budget - News - Stripes [weblink](#)
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Tensions simmer as Japan accuses China of trying to change status quo in the E. China Sea by force: [weblink](#) via @sarallana
csmonitor 07:25 AM Jul 09 on Twitter

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ADD NEW INTEREST

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internet explorer has always been there for me whenever google chrome won't open thanks internet explorer you're a great friend
casrifice 08:04 AM Jul 09 on Twitter




Besides releasing iOS 7 Beta 3 to developers yesterday Apple also seeded the third developer preview of OS X 10.9... [weblink](#)
almousye 08:00 AM Jul 09 on Twitter




Assassin's Creed II 2: This theme for the Google Chrome web browser is designed for serious Assassin's Creed fans [weblink](#)
J03_PY 07:44 AM Jul 09 on Twitter




I opened up the google chrome browser for my grandma and she asked me if I need a password to search google. Old people lol
daniellesandler 07:31 AM Jul 09 on Twitter




My FireFox keeps crashing this morning. 4 times since 7:30 am. Oh #technology
pamelamacmac 07:15 AM Jul 09 on Twitter




@iMZDL are there significant fixes in Beta 3 cause Beta 2 was worse than Beta 1 for some reason
theartist_CSE 06:40 AM Jul 09 on Twitter



Mozilla officially launches Firefox OS devices in stores, opens up payments for app and in-app purchases [weblink](#)
MahmoudMB 06:32 AM Jul 09 on Twitter



@verge Still Firefox as everything works in it. Still can't say that for Chrome or Opera.
KoHoSo 06:11 AM Jul 09 on Twitter



@geet_k nah, I have an extension to manage tabs on Chrome
ni_nad 05:39 AM Jul 09 on Twitter

WHAT NEEDS TO BE DONE TO BUILD SUCH A PLATFORM

OBTAIN THE USER'S FEEDS

...we need something to process, right?

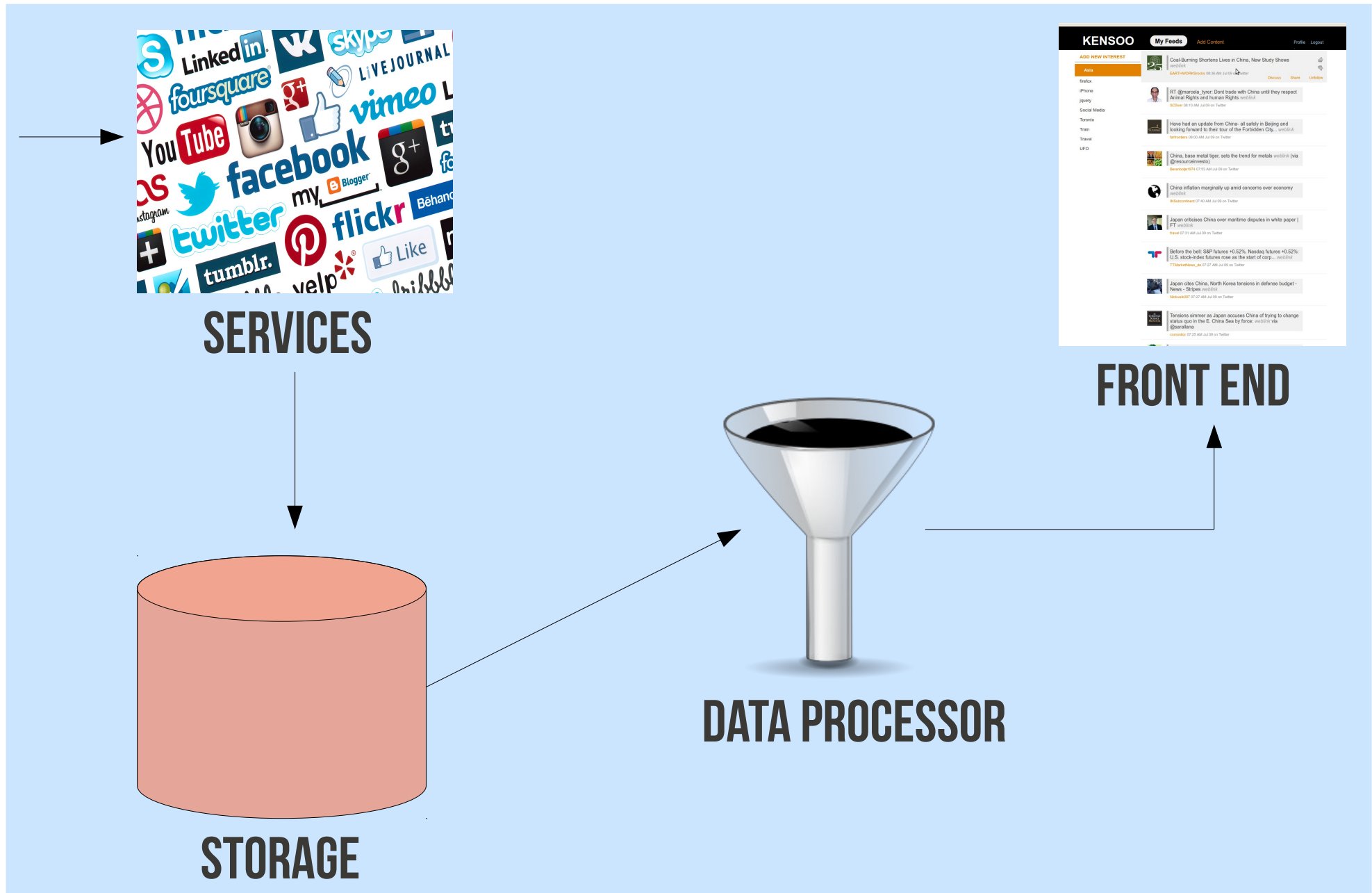
APPLY SOME DATA PROCESSING TO THESE FEEDS

...to filter the feeds smartly

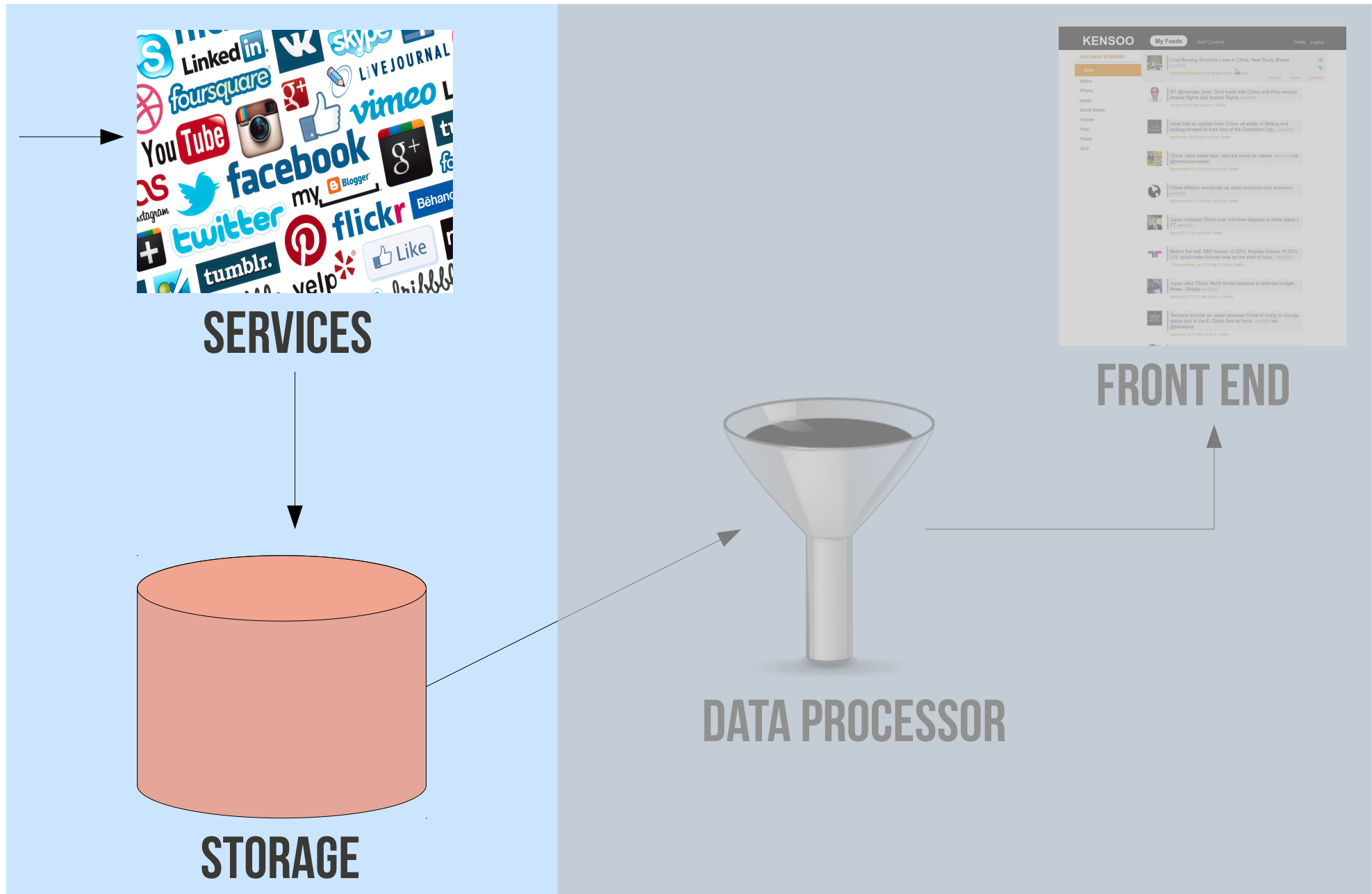
DISPLAY THE RESULTS OF THE DATA PROCESSING

...so the user can enjoy

SO WE WANT OUR PLATFORM TO LOOK LIKE THIS:



TODAY WE WILL FOCUS ON HOW TO OBTAIN THE FEEDS

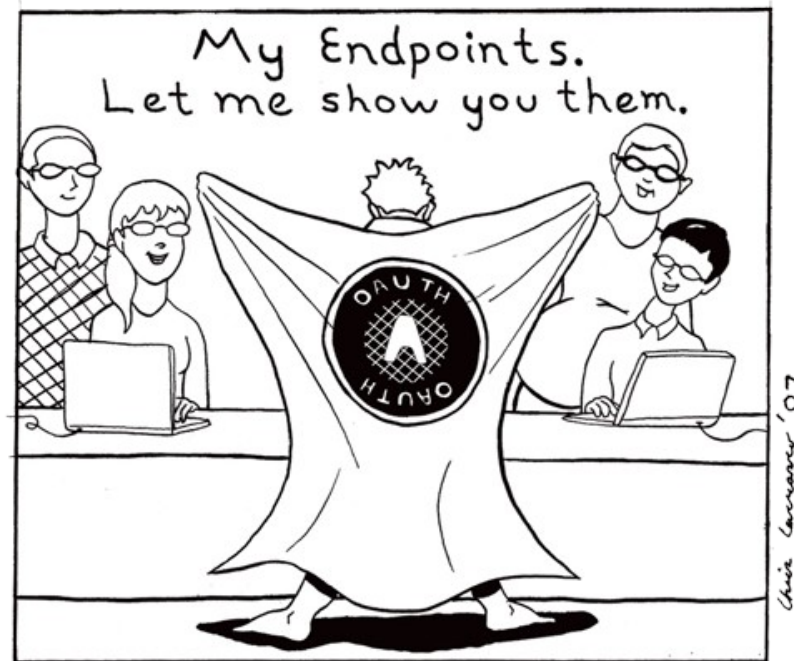


NAIVE APPROACH: ASK FOR USER NAME AND PASSWORD



...BUT THIS IS BAD. SO...

**WANT: GET THE USER'S FEEDS WITHOUT GETTING ACCESS TO
HER USER NAME AND PASSWORD**



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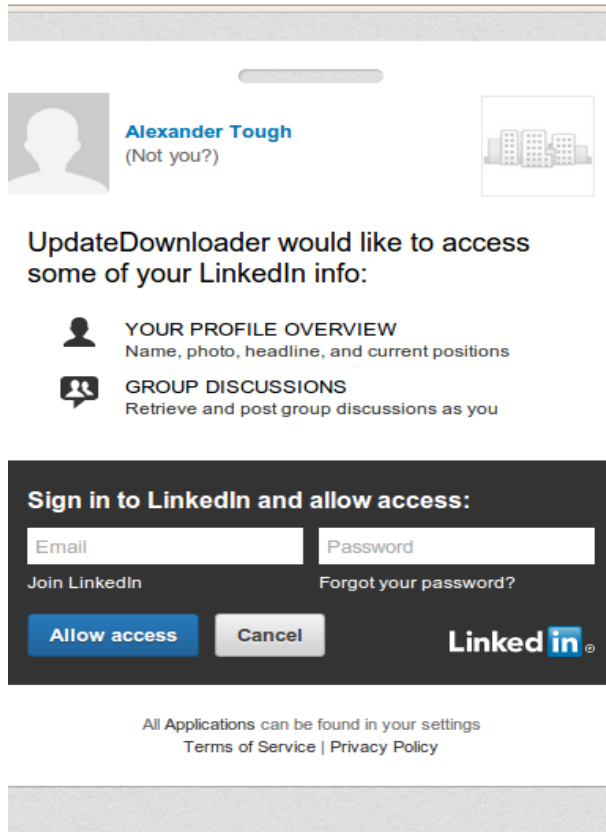
THE OAUTH 2 PROTOCOL IS A GREAT WAY FOR DOING THIS.

IDEA OF THE OAUTH 2 PROTOCOL



**GIVE THE PLATFORM A KEY THAT CAN LET IT ACQUIRE
THE USER'S FEEDS WITHOUT HER NAME AND PASSWORD**

HOW OAUTH 2 WORKS



A screenshot of a LinkedIn authorization dialog box. At the top, there's a header bar. Below it, a user profile for "Alexander Tough" is shown with a placeholder photo and a building icon. The text "(Not you?)" is next to the name. Below the profile, it says "UpdateDownloader would like to access some of your LinkedIn info:". There are two items listed: "YOUR PROFILE OVERVIEW" (Name, photo, headline, and current positions) and "GROUP DISCUSSIONS" (Retrieve and post group discussions as you). At the bottom, there's a dark box with the text "Sign in to LinkedIn and allow access:". It contains two input fields for "Email" and "Password", a "Join LinkedIn" link, and a "Forgot your password?" link. There are two buttons: "Allow access" (blue) and "Cancel" (gray). The LinkedIn logo is on the right. At the very bottom, it says "All Applications can be found in your settings" and "Terms of Service | Privacy Policy".

1) PLATFORM DIRECTS USER TO SERVICE

`http://mywebsite.com/auth?code=HELLO`

...

2) SERVICE REDIRECTS USER BACK TO PLATFORM WITH
AUTHORIZATION CODE

HOW OAUTH 2 WORKS... CONTINUED

3) PLATFORM SENDS REQUEST FOR ACCESS TOKEN TO SERVICE PASSING IN AUTH CODE

```
https://www.linkedin.com/uas/oauth2/accessToken  
?grant_type=authorization_code  
&code=HELLO  
...
```

4) SERVICE GRANTS PLATFORM ACCESS TOKEN

```
{"expires_in":5184000,  
  "access_token" : "bingo"}
```

5) PLATFORM REQUESTS SERVICE FOR USER'S FEEDS USING ACCESS TOKEN

```
https://api.linkedin.com/v1/people/~?  
oauth2_access_token=bingo
```

6) PLATFORM GETS USER'S FEEDS



OAUTH 2 CANNOT EASILY BE BROKEN

AUTHORIZATION CODE PROTECTS THE ACCESS TOKEN.



"I make sure the access token doesn't go through the user's browser"

ACCESS TOKEN AND AUTHORIZATION CODE ARE HARD TO GUESS BECAUSE THEY ARE LONG

128^{50}

possible values

>

particles (



)

"... to make your day even better, the actual values of the tokens are sparsely distributed"

LET'S GO OVER WHAT WE HAVE LEARNED

because I want cookies now

RECAP

FILTERING SOCIAL MEDIA FEEDS IS THE PROBLEM WE ARE TRYING TO SOLVE

GATHER 'EM AND FILTER 'EM!

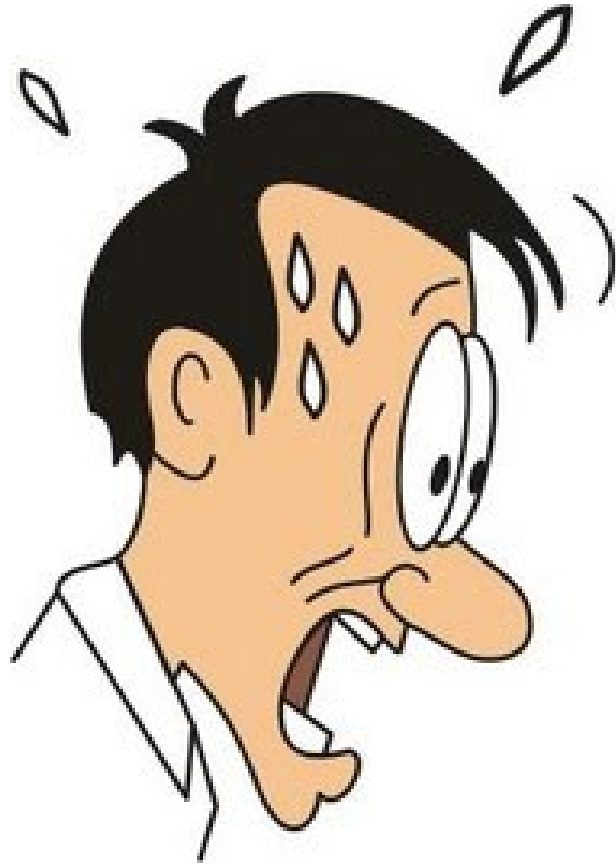
OAuth 2 IS A WIDELY USED AND RELIABLE PROTOCOL FOR OBTAINING DATA FROM SOCIAL NETWORKS

NO NEED TO ACCESS USER'S NAME AND PASSWORD!



That's all Folks!

QUESTION TIME!



cartoonfaces.net





WHAT ARE YOU WAITING FOR?

SOURCES ... give credit where credit is due.

Slide 2: <http://www.neocloudmarketing.com/are-you-feeling-social-media-overload/>
<http://randomwire.com/wp-content/uploads/my-interests.png>

Slide 3: <http://georgeessien.com/wp-content/uploads/2013/03/ideas-11.jpg>

Slides 5 and 6: http://www.socialsearchmobile.org/wp-content/uploads/2013/02/social_media.jpg
<http://icons.iconarchive.com/icons/oxygen-icons.org/oxygen/256/Actions-view-filter-icon.png>

Slide 7: <http://sophosnews.files.wordpress.com/2012/03/facebookcartoon.jpg?w=250&h=250&h=250>

Slide 8: <http://hueniverse.com/wp-content/uploads/2007/12/My-Endpoints.png>

Slide 9: <http://us.123rf.com/400wm/400/400/pramny/pramny0808/pramny080800112/3473850-cartoon-globe-man-holding-a-golden-key.jpg>
<http://idyeah.com/blog/wp-content/uploads/2012/03/no-password.png>

Slide 11: <http://www.sheinspires.com.au/files/1999271/uploaded/happy-face-acts-of-kindness-blogs.jpg>

Slide 12: <http://www.dynamicexport.com.au/wp-content/uploads/2010/11/protect-IP-in-China.jpg>
<http://www.hdmwallpapers.in/walls/galaxy-universe-normal.jpg>

SOURCES ... give credit where credit is due.

Slide 15: <http://thatbruce.files.wordpress.com/2013/04/thats-all-folks-7172-1280x800.jpg>

Slide 16: <http://whatisaphobia.com/wp-content/uploads/2011/11/scared-cartoon-face-expression-of-man.jpg>

Slide 17: <http://1000awesomethings.files.wordpress.com/2008/09/cookie-monster.jpg>

Font inspiration: <http://www.slideshare.net/mikejeffs/how-to-create-great-slides-for-presentations>