

Music & the Internet

MUMT301

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Plan

- Last class: Music APIs (Last.FM, Musicbrainz, Echonest Labs)
- Final project proposal presentation guidelines
- Project proposal draft round
- Web-based sound generation
- Web-based recording and sequencing applications
- Web-based collaborative applications
- Break
- JavaScript libraries for sound generation and processing
- In-class exercise

Final project proposal presentation guidelines

- Final project proposal (1–2 pages with goals, subgoals, and partial bibliography)
- Powerpoint-style or HTML presentation of what you plan to do
- Include
 - Goal, subgoals, and timeline
 - Partial bibliography
 - References to similar projects/code/music
- 10-minute presentation and 5 minutes of questions
- Final project submission
 - Web-based application with description (1–2 pages)
 - Music project with description (2–3 pages)
 - Research paper (4–6 pages)

Final project proposal

The final project proposal consists on:

1. The submission of a **project proposal report**.

- You will describe your **goal** for the project, dividing it into **sub-goals**, and arranging them into a **timeline**.
- You must also present **references**. These may be **bibliographical**, **code** examples, **music** examples, **software** applications, or any kind of **creative** or **intellectual work** that you think is relevant for the development your project.
- The report should be 2 pages long at the most, 11 pt, single-spaced.

Final project proposal presentation guidelines

2. The presentation of your project proposal.

- You will present your project in class by means of a powerpoint-style slide show or an HTML webpage.
- You will describe your **goals** and **sub-goals**, and will present the **references** you consider relevant for doing your project.
- The presentation will be **15 minutes** (10-minute presentation, 5-minute round for questions). Rehearse and time your presentation accurately, since no extra time will be given.

The final project submission is due on Tuesday 19 December, by midnight.

SOUNDCLOUD TWO- TRACK MIXER

IDEA

- A simple two deck audio mixer
- Allow user to search through Soundcloud tracks and play two tracks independently
- Implement an interactive crossfader to switch between them



TWO DECK MIXER

"Traktor Kontrol S2"

GOALS

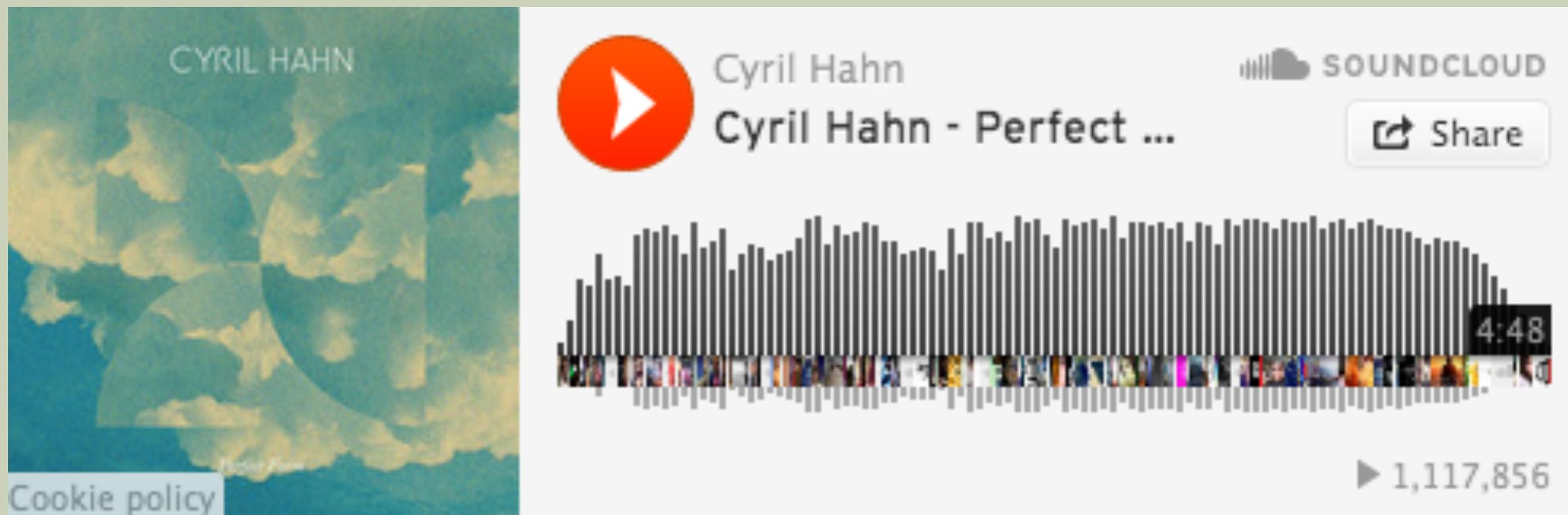
- Incorporate two audio player widgets that allow both searching and playing of soundcloud tracks.
- Incorporation of a crossfader
- Incorporation of two volume knobs

SOUNDCLOUD API

- Extensive API
- Multi language SDKs
- “Search” & “Stream”
- <https://developers.soundcloud.com/>



SOUNDCLOUD HTML 5 PLAYER



A screenshot of a SoundCloud player interface. On the left is a thumbnail image of a painting by Cyril Hahn, featuring a landscape with green trees and yellow flowers. The title "CYRIL HAHN" is printed in white capital letters across the top of the image. At the bottom left, there is a small "Cookie policy" link. The main player area shows the artist name "Cyril Hahn" and the track title "Cyril Hahn - Perfect ...". To the right of the title is the SoundCloud logo. Below the title is a waveform visualization of the audio. In the bottom right corner of the player, there is a play button icon followed by the number "1,117,856".

SOUND MANAGER 2



- Crossplatform API which allows JS to access and utilize Flash media methods
- <http://wheelsofsteel.net/>

SOUNDMANAGER 2 & CSS



<http://wheelsofsteel.net/>

JQUERY

- Javascript Library
- Will be used for the interactive slider and knob coding
- <http://jqueryui.com/slider/>
- <http://anthonyterrien.com/knob/>

PREVIOUS ATTEMPTS

- <https://github.com/AnthonyDry/SoundcloudDj>
 - See: http://www.music.mcgill.ca/~jackson/final/GITHUB_Example/Soundcloud_DJ_Master/
- <https://github.com/robclouth/SoundCloud-Mixer>
 - See: http://www.music.mcgill.ca/~jackson/final/GITHUB_Example/SoundCloud-Mixer-master/public/

FUNCTIONAL ONLINE MIXERS

- <http://wheelsofsteel.net/>
- <http://mix.until.am/>

TIMELINE

- Sunday November 30th: Soundcloud widget with search functionality finished
- Sunday December 7th: jQuery aspects (knobs and sliders) coded and linked with widgets
- Sunday December 14th: Overall aesthetic and final touches

WORKS CITED

- Anthony Dry. "SoundcloudDJ." *GitHub*. GitHub, n.d. Web. 27 Nov. 2014. <<https://github.com/AnthonyDry/SoundcloudDj>>.
- The jQuery Foundation. "Slider." *jQuery User Interface*. The jQuery Foundation, n.d. Web. 27 Nov. 2014. <<http://jqueryui.com/slider/#default>>.
- Robclouth. "SoundCloud-Mixer." *GitHub*. GitHub, n.d. Web. 27 Nov. 2014. <<https://github.com/robclouth/SoundCloud-Mixer>>.
- Schiller, Scott. "SoundManager 2." *Schillmania*. Schillmania, n.d. Web. 27 Nov. 2014. <<http://www.schillmania.com/projects/soundmanager2/>>.
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- Soundcloud. "HTTP API Guide." *Soundcloud*. Soundcloud, n.d. Web. 27 Nov. 2014. <<https://developers.soundcloud.com/docs/api/guide>>.
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MUMT 301

Final Project Proposal

Project Goals

- Create a website where music playlists generated from Facebook groups/pages can be continuously streamed
- The user will be able to log into Facebook within the webpage and access music posted in their private groups and on the “walls” of people in their network
- Postings of links to different sites can be aggregated and listened to in a continuous stream, users can search through posts using filters like date posted, number of likes, and person posting, and generate further information about the artist within the website
- The site will display playlists made in public Facebook groups and pages that can be accessed without a login prompt as examples, as a way to include people who do not use Facebook, or for the inclusion of Facebook users who are not members of music-sharing groups
- Hopefully this will also encourage people to create music-sharing groups on Facebook with their friends as a form of music recommendation, discovery, and collective curation

Facebook music-sharing and discovery group examples

Let's Share Some Sonic Waves

Emily Hanson
November 7 at 2:19pm · Montreal
<https://www.youtube.com/watch?v=G4yiFSTaWIU>

EVY JANE - Laurel... sometimes live a cappella



YOUTUBE.COM

Like · Comment · Share

✓ Seen by 44

Lina Martin-Chan likes this.

Write a comment...

Sébastien Alexander
November 6 at 1:38pm
<http://youtu.be/ZYcU-bUweL0>

Alien City - Dirty Heaven



Last track from the 1979 self titled album from Jon Turnbow, Some info from the fantastic swanfungus site.... Originally released in a limited pressing of 50...

YOUTUBE.COM | BY NIGHTMELADY

Roasting beets

Derek DeBoer
September 4 · Ithaca, NY, United States
for the soul
<https://www.youtube.com/watch?v=mwztoqWeu54>



Aloe Blacc - Bente Ordinaria (2006)

YOUTUBE.COM

Like · Comment · Share

✓ Seen by 18

Morgan Fairbank likes this.

Write a comment...

Erica Jewell
August 4 · Edinburgh, United Kingdom
<http://sahelsounds.bandcamp.com/.../music-from-saharan-cellph...>



MUSIC FROM SAHARAN CELLPHONES

Music from Saharan Cellphones, by sahelsounds

9 track album

SAHELSONGS.BANDCAMP.COM

Save

Similar Application: Solayo

Solayo is “a Web app that aggregates content from YouTube, Dailymotion and SoundCloud, letting you search for and play music and videos from just a single site” – Kaylene Hong, The Next Web, 30 October 2013

The screenshot shows the Solayo beta application interface. On the left, there's a sidebar with links for Media Search, Radio, Login, Sign Up, Leave feedback, and Tour. The main area has a search bar with 'Search for people' and a guest account indicator. Below the search bar, a search for 'coldplay' is shown with results categorized by source: All, Youtube, SoundCloud, and Dailymotion. The 'All' tab is selected, displaying several video thumbnails and titles such as 'dual_bign - Coldplay - Paradise', 'COLDPLAY BEST SONGS', 'Coldplay - Hurts Like Heaven', etc. To the right, a large video player window displays a Coldplay music video titled 'Physical Therapy' with a duration of 12:08. Below the video player, a 'Guest's playlist' section is visible. On the far right, a sidebar shows 'Up Next' with a list of videos including 'Radio - Hip-hop channel', 'Lecrae - FAKIN Feat. Thi'sl', 'Paintballing With Tyler, The Creator', 'Blackstreet - No Diggity (Bondax Edit)', 'Bienvenue au Maroc - Kalsha feat Jalal El Hamd...', and 'Mario VS Sonic. Épicas Batallas de Rap del Friki...'. Each video entry includes a thumbnail, title, and source information (e.g., 'Youtube').

<http://solayo.com/landing>

<http://thenextweb.com/media/2013/10/30/spotify-like-solayo-plays-music-and-videos-from-youtube-dailymotion-and-soundcloud-in-one-place/>

Sub-goal No. 1

27 November – 2 December

- Create webpage
- Acquire Facebook API key, write JavaScript code to gain access to group data and user posts
- Find the format in which these posts appear in the returned JSON/XML file (probably in the form of the posted URL to the group page, or in the form of an embedded player)

Facebook's Graph API method for getting “the feed of posts [...] published to this group”

The screenshot shows the Facebook Developers documentation interface. The top navigation bar includes links for Developers, Apps, Products, Docs (which is the active tab), Tools, Support, and Blog. A search bar is also present. On the left, there's a sidebar with sections for App Links, Games, Payments, Ads, Audience Network, Insights, and App Development. Below that is a section for SDKs with links for iOS, Android, JavaScript, PHP, and Unity. The main content area is titled '/{group-id}/feed' and describes it as 'The feed of posts (including status updates) and links published to this group.' It includes sections for Reading, Permissions, and Fields. Under 'Reading', there are tabs for HTTP (selected), PHP SDK, JavaScript SDK, iOS SDK, Android SDK, and Graph Explorer. The 'HTTP' tab displays the API endpoint: GET /v2.2/{group-id}/feed HTTP/1.1 and the host: graph.facebook.com. The 'Permissions' section lists requirements for a user access token with the user_groups permission and an app access token for reading posts in app and game groups. The 'Fields' section states that the response is an array of Post objects.

App Links
Games
Payments
Ads
Audience Network
Insights
App Development

SDKs
iOS
Android
JavaScript
PHP
Unity

/group-id/feed

The feed of posts (including status updates) and links published to this group.

Reading

[HTTP](#) [PHP SDK](#) [JavaScript SDK](#) [iOS SDK](#) [Android SDK](#) [Graph Explorer ▾](#)

```
GET /v2.2/{group-id}/feed HTTP/1.1
Host: graph.facebook.com
```

Permissions

- A user access token, for a member of the group, with `user_groups` permission is required.
- An app access token can read posts it published in app and game groups that belong to it.

Fields

An array of Post objects.

<https://developers.facebook.com/docs/graph-api/reference/v2.2/group/feed>

Sub-goal No. 2

3 – 6 December

- Write JavaScript code that uses the data acquired through Facebook to access APIs for YouTube, SoundCloud, Vimeo, Spotify, Grooveshark, Bandcamp, etc.
- It seems that Bandcamp no longer provides API keys

Widget API

In order to access the JavaScript object which provides the SoundCloud Widget API, add [this script](#) to your html page.

This script exposes the `SC.Widget(*iframeElement|iframeElementID*)` function to the global scope. It allows you to control the widget from the parent page (the page the widget is inserted into). `SC.Widget` accepts the reference to the iframe element or its id.

```
var iframeElement = document.querySelector('iframe');
var iframeElementID = iframeElement.id;
var widget1 = SC.Widget(iframeElement);
var widget2 = SC.Widget(iframeElementID);
// widget1 === widget2
```

If you're looking for documentation on the Flash Widget visit [this page](#).

Playground

[Widget API Playground](#) is a special page where you can view examples and see the results live on your screen.

Methods

When you get the widget object with the help of the `SC.Widget` method, you'll have

Bandcamp API

Sorry, the API is no longer supported and we're not granting any new developer keys.

https://developers.google.com/youtube/js_api_reference
<http://developer.vimeo.com/player/js-api>
<https://developers.soundcloud.com/docs/api/html5-widget>
<https://bandcamp.com/developer>

YouTube JavaScript Player API Reference

This document provides reference information for the YouTube JavaScript player API.

API Methods

- [Overview](#)
- [Requirements](#)
- [Getting Started](#)
- [Operations](#)
- [Functions](#)
 - [Queueing functions](#)
 - [Playback controls and player settings](#)
 - [Playback status](#)
 - [Playback quality](#)
 - [Retrieving video information](#)
 - [Retrieving playlist information](#)
 - [Adding or removing an event listener](#)
- [Events](#)
- [Event Handlers](#)
- [Examples](#)
 - [Embedding the SWF](#)
 - [Getting the SWF Reference Object](#)
 - [Issuing Calls](#)

vimeo developer();

[API](#) [Player](#) [Guidelines](#) [My Apps](#) [Help](#)

Player / JavaScript API

How to control the Vimeo embedded player with JavaScript.

Getting Started

- [Getting Started](#)
- [Universal Embed Code](#)
- [Calling the API with Froogaloop](#)
- [Calling the API Manually](#)
- [More Examples](#)
- [Flash Embed Code](#)
- [API Reference](#)
 - [Universal Embed Method](#)
 - [Specification](#)
 - [Methods](#)
 - [Universal Embed Event](#)
 - [Specification](#)
 - [Events](#)
- [Compatibility](#)
- [Functions](#)
- [Events](#)

You'll need to be running on a web server instead of opening the file directly in your browser. Flash and JS security restrictions will prevent the API from working when run locally.

The JavaScript API works in different ways depending on how the player is embedded. Check out each section below for the details of the differences between embedding codes. For more information on how to embed our player, see [the embedding page](#).

[Universal Embed Code](#)

Sub-goal No. 3

6 – 10 December

- Write code to continuously stream from player to player
- If this is not possible, find a way to gather the information from posts and access recordings to continuously stream from a single site i.e. Spotify
- Display public playlists from public groups on site

Solayo

The screenshot shows the SoundCloud mobile application interface. At the top, there's a navigation bar with icons for 'Media' (selected), 'Playlists', and 'People'. Below this is a search bar containing the query 'Floating Points Nuits Sonores', with a magnifying glass icon, a clock icon for recent searches, and a 'Search' button. Underneath the search bar are three filter tabs: 'All' (selected, highlighted in blue), 'Youtube', and 'SoundCloud'. To the right of these are playback controls: a play button, a shuffle button, and a settings gear icon.

The main content area displays a list of search results:

- Nuits Sonores** by floating points (SoundCloud, 11:56)
- Floating Points - Nuits Sonores** by 10minsDeep (Youtube, 11:59)
- Floating Points - Nuits Sonores** by Nick Ottrando (Youtube, 11:57)
- Floating Points - Nuits Sonores** by Housin' Berg (Youtube, 11:57)
- NUITS SONORES 3 - FLOATING POINTS** by Stéphane BOUCLO (Youtube, 7:02)

On the left side of the screen, there's a vertical sidebar with icons for search, infinite scroll, and a feedback link. The 'Playlists' section in this sidebar indicates that the user hasn't created any playlists yet, with a 'Create one now.' button. At the bottom of the screen, there's a large speaker icon with a stylized 'S' logo, and a control bar with volume, shuffle, and repeat buttons.

<http://solayo.com/mediasearch>

SCM Player



SCM Music Player

seamless music for your website



SCM Music Player is a free and open source web music player, that brings a seamless music experience to your website. Support Tumblr, Blogger, Weebly, Tistory and more.

Continous Playback Cross Pages - Seamless playback throughout your website.

Full Featured Control - Play, pause, next, previous, seek, shuffle, repeat mode, volume and more.

Custom Skins - Match your look and feel. Choose or design your own skin with CSS.

Dynamic Playlist - Music from various sources: **MP3**, **SoundCloud**, **Youtube**, **RSS** in **HTML5** or **Flash**.

Flexible UI - Dockable player on top or bottom. Playlist can be toggled.

Setup Wizard - Create your SCM Music Player without any pain.

Custom Skins

Setup

Addons

About

Setup Wizard

Go through each tab to **Choose Skin**, **Edit Playlist**, and **Configure Settings**. Select **Done** to proceed.

Returning user? Select **Import Profile**, to load up and edit your current script.

A screenshot of the "Choose Skin" tab of the Setup Wizard. It shows a navigation bar with tabs: "Choose Skin" (selected), "Edit Playlist", and "Configure Setting". Below the tabs, there's a section titled "DEFAULT SKINS" showing six color-coded skins for the SCM Music Player. To the right of the skins is a large, scrollable list of "4000+ Custom Skins" shown as horizontal bars in various colors like blue, red, orange, purple, and green. Each bar contains a small preview of the skin and the text "SCM Music Player".

Choose Skin Edit Playlist Configure Setting

DEFAULT SKINS

SCM Music Player

4000+ Custom Skins

<http://scmplayer.net/>

Streamus

[Home](#)[Getting Started](#)[About](#)[Donate](#)

Simple, streaming music.

**The convenience of YouTube.
The beauty of Chrome technology.**

Streamus turns YouTube into the music player you always wanted. It's a Google Chrome extension that makes streaming YouTube refreshingly easy.

[Install extension now](#)

Forget the bookmarks

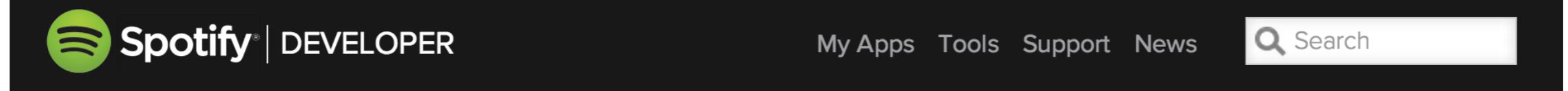
Adding videos to Streamus makes bookmarking YouTube obsolete! Your video collections are accessible from any PC.

No need for tabs

Ever accidentally close a song you were listening to? Yeah, us too. Streamus runs behind the scenes so you can enjoy a seamless, tab-free experience.

<https://streamus.com/>

Spotify API

[Home](#)[News](#)[Showcase](#)[My Applications](#)[Web API](#)[User Guide](#)[Beginner's Tutorial](#)[API Endpoint Reference](#)[Albums](#)[Artists](#)[Browse](#)[Library](#)[Playlists](#)[Profiles](#)[Search](#)[Tracks](#)[API Console](#)[My Apps](#) [Tools](#) [Support](#) [News](#)

Search

Web API Endpoint Reference

Our Web API endpoints give external applications access to Spotify catalog and user data.

Web API Base URL: <https://api.spotify.com>[User Guide](#) | [Tutorial](#) | [Code Examples](#)Search:

Method	Endpoint	Usage	Returns
GET	/v1/albums/{id}	Get an album	album
GET	/v1/albums?ids={ids}	Get several albums	albums
GET	/v1/albums/{id}/tracks	Get an album's tracks	tracks*
GET	/v1/artists/{id}	Get an artist	artist
GET	/v1/artists?ids={ids}	Get several artists	artists
GET	/v1/artists/{id}/albums	Get an artist's albums	albums*
GET	/v1/artists/{id}/top-tracks	Get an artist's top tracks	tracks
GET	/v1/artists/{id}/related-artists	Get an artist's related artists	artists

<https://developer.spotify.com/web-api/endpoint-reference/>

Public group example

ABOUT

1,645 members

Public Group

This group is loosely related to a group I set up on MSN in the early 2K's called "Ambient Techno World. It was partly providing a link to a genre of obscure post-club electronic music that I'd picked up listening to the Chill Out Zone on Kiss FM during the 90's before the show was taken off air in 2000.

I still really enjoyed this new raw Electronica. Some fantastic artist created their best works in my opinion. I am hoping to regain the same kind of situation as was on MSN where people with an interest in Electronica networked before Malware links took hold. I intend to post up some of the great tunes if I can locate them on Youtube etc.

Music over two decades old has stood the test of time for its everlasting freshness. It was a renaissance where Electronica had moved on from its novelty beginnings and artists the world over were more adept at playing with new sounds, using new musical tools and essentially creating a genre of ambient techno. The music has remained largely underground but for a variety of radio broadcasts like the one on Kiss - The Chill out Zone with Paul Thomas.

2000 heralded the end of the Kiss Chill Out Zone, when corporate bosses of EMAP withdrew its budget for selective music. That was when the broadcast died but became the advent of a new commercial coining of the term 'Chill Out' and such sub genres as Lounge and chill out classical began misrepresenting the original genre.

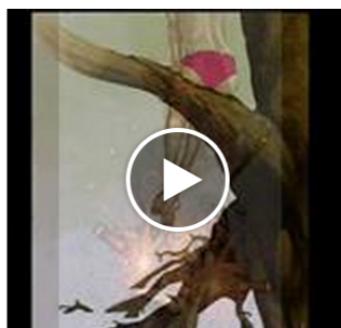
Ambient Techno World 1990s

Edward Edward
Yesterday at 9:38am
<https://www.youtube.com/watch?v=IGSCLNGn2Qc>



Ballet Mechanique - Embody
1996, Eevo Lute Muzique
<http://www.discogs.com/Ballet-Mechanique-Embody-EP/master/78328>

Vagelis Pontikis
November 23 at 8:32pm
ghost#dogs



The Black Dog - Clan (Mongol Hordes)
I.A.O. - "Clan (Mongol Hordes)". Black Dog Productions. Bytes. Warp Records. 1993. Art: Dream a Little Dream of Me by Frazer Irving. Adele by Frazer Irving. ...

<https://www.facebook.com/groups/AmbientTechnoWorld/>

Sub-goal No. 4

10 – 13 December

- Add search filters such as date posted, number of likes, person posting, et cetera.
- Add links for further information about artists [as in Assignment 8]

Extracting info for filters

The screenshot shows the Facebook Developers documentation interface. The top navigation bar includes links for Developers, Apps, Products, Docs (which is the active tab), Tools, Support, and Blog, along with a search bar and user profile icons.

The left sidebar contains a vertical list of categories: App Links, Games, Payments, Ads, Audience Network, Insights, App Development, SDKs, iOS, Android, JavaScript, PHP, Unity, Third-Party, and APIs.

The main content area is titled `/{object-id}/likes`. It describes this reference as the `/likes` edge common to multiple Graph API nodes, noting that structure and operations are the same for each node.

Reading

HTTP | PHP SDK | JavaScript SDK | iOS SDK | Android SDK | Graph Explorer ▾

```
GET /v2.2/{object-id}/likes HTTP/1.1
Host: graph.facebook.com
```

Permissions

- The same permissions required to view the parent object are required to view likes on that object.

Fields

An array of User objects representing each of the people who liked the object, in addition to the following field:

Property Name	Description	Type
<code>total_count</code>	Total number of people who liked. This is only returned when the flag <code>summary=true</code> is set.	<code>int32</code>

<https://developers.facebook.com/docs/graph-api/reference/v2.2/object/likes>

```

function querySimilar()
{
    $("#newname").empty();
    $("#bio").empty();
    $("#photo").empty();
    $("#further").empty();
    var selected = event.target.innerHTML;
    var url = 'http://ws.audioscrobbler.com/2.0/';
    var args =
    {
        method: 'artist.getinfo',
        artist: selected,
        api_key: lastfmKey,
        format: 'json',
    };
    $.getJSON(url, args, function(data)
    {
        name = data.artist.name;
        biography = data.artist.bio.content;
        photosource = data.artist.image[04]["#text"];
        photo = "</img>";
        $("#newname").append(name);
        $("#bio").append(biography);
        $("#photo").append(photo);
    });

    var urlurl = 'http://developer.echonest.com/api/v4/artist/urls';
    var urlargs =
    {
        api_key: echoKey,
        name: selected,
        format: 'json',
    };
    $.getJSON(urlurl, urlargs, function(urldata)
    {
        $("#further").append('further info: <br>');
        links = urldata.response.urls;
        for (i = 0; i < 3; i++)
        {
            $("#further").append('<a href="' + links[Object.keys(links)[i]] + '" target="_blank">' +
links[Object.keys(links)[i]] + '</a><br>');
        };
    });
}

```

<script> for further information about artists

Sub-goal No. 5

14 – 16 December

- Make sure the site is easily navigable and create a clean and good-looking CSS style
- If there is extra time, repeat the process but accessing data posted to Twitter

Bibliography

(n.d.). Ambient Techno World. *Facebook*. Retrieved 27 November, 2014. From <https://www.facebook.com/groups/AmbientTechnoWorld/>

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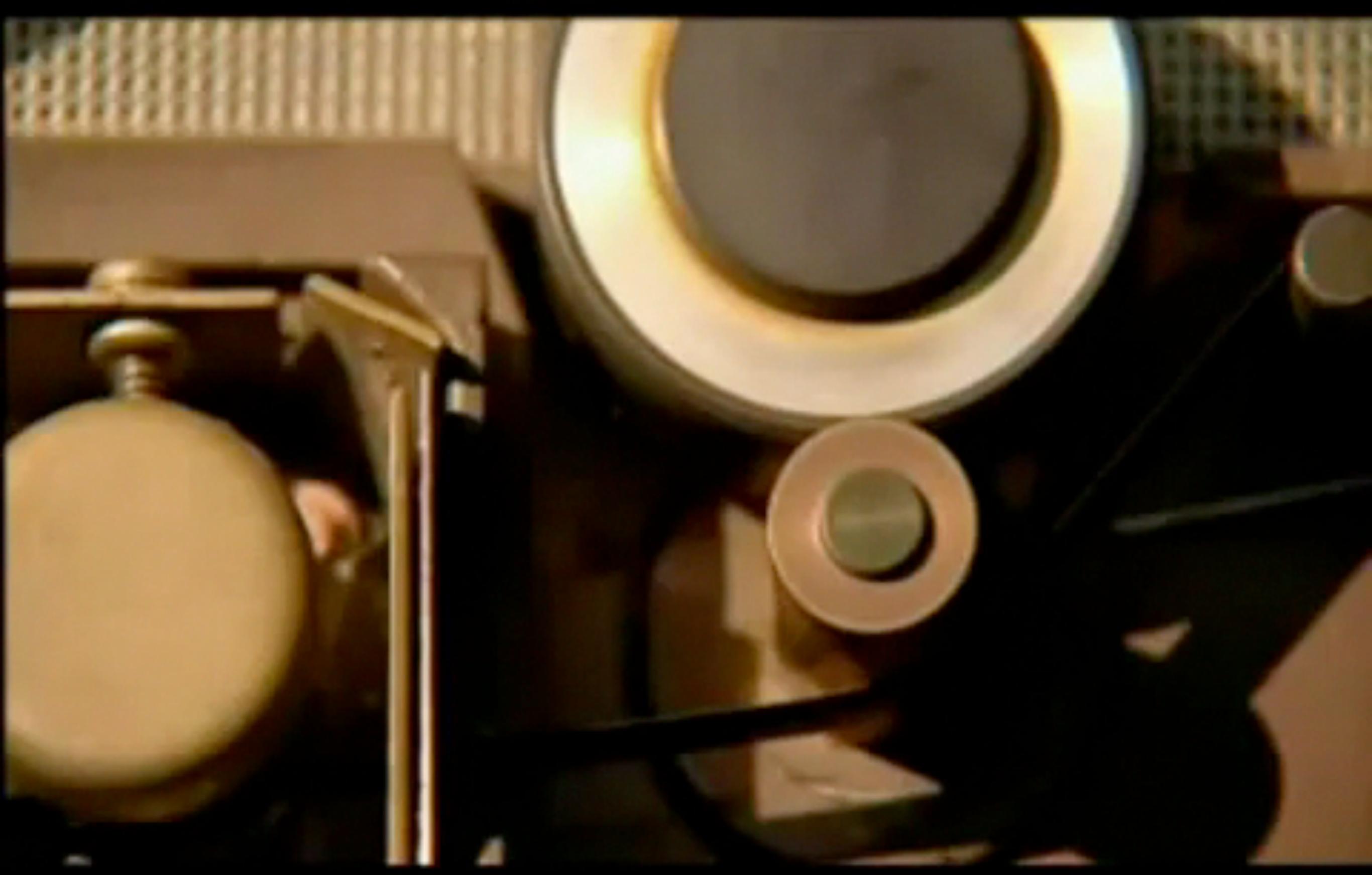
Final Project Proposal draft round

Web-based procedural instrument

During the first half of the 60s, the American composer Steve Reich developed the idea of repeating short patterns of sound as a compositional technique by experimenting with tape.

By using the same piece of audio in two different recording machines, he started both loops in unison, and gradually delayed one of the machines in order to obtain complex and canonic rhythmic, melodic, and harmonic patterns starting from simple material.

You can create a web-based emulation of the analog process that Reich explored 45 years ago.



Web-based systems for music making

- Synths
- Sequencers
- DAW
- Drums
- Samples

Synths

- www.tony-b.org (use Safari)
- <http://www.gurchet-rai.net/apps/sequencer/>
- <http://www.angryoctopus.co.nz/?cat=5> (use Safari)
- petervandenoord.nl/patchwork

Web-based music sequencers and DAWs

- <http://soundation.com/>
- <http://www.audiosauna.com/studio/>
- <http://www.audiotool.com/>
- and many others
 - UJAM
 - Dropin
 - Soundtrap
 - Ohm Studio (web-based + client)

Collaborative music production

- <http://www.ohmstudio.com/>
- <http://www.digitalmusician.net/>
- <https://blend.io/>
- <https://www.looplabs.com/beta>
- <http://www.cockos.com/ninjam/>

Web-based post production

- Mastering:
 - <https://www.landr.com> (mastering, Montréal-based)
 - [Cloudbounce](#)
 - [Masteringbox](#)
- Post-production:
 - <https://auphonic.com/>

Free sounds

- <http://www.downloadfreesound.com/>
- <http://www.freesfx.co.uk/>
- <http://freesound.org>
 - crowd-source
 - most comprehensive one

Coding environment and Javascript libraries for sound generation and processing

- [tone.js](#)
- [timbre.js](#)
- [Pizzicato.js](#)
- [Gibber](#)
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BREAK

JavaScript

- mumt301.github.io