

a pdf file of 1 page (12-point font, double space, single column, 1" margin all around)

0. project name (have a cool name ;-)) and team members (and who's the leader and main external contact)

1. what's your project topic (be specific)? why is it important (and worthwhile for this course project)?

2. what's been done already (initial survey)? why are they not sufficient (things to explore further)?

3. expected deliverables (report required, demo welcome; code optional for csc461) and weekly schedule until june 30

4. course project website url (and keep it updated weekly about the progress throughout the term)

网上搜到的一些有关 soundhound 的运行机制:

SoundHound is powered by its own Sound2Sound Search Science (S2S).

When you tap the orange button, Sound2Sound springs into action. If you are listening to recorded music, it matches a flexible fingerprint of your sound against a database of recorded music, giving you the fastest, most accurate result possible, even for popular remixes. If you are singing or humming, Sound2Sound knows to match your melody and rhythm with the millions of user recordings on [midomi.com](http://midomi.com). The matching technology is flexible, working for any key or tempo. It also takes advantage of lyrics if your search included words.

When you tap the say search button, Sound2Sound uses a compact, flexible representation of your voice that can be instantly matched against phonetic versions of song and artist names. Sound2Sound is also included in SoundHound's text search, where its ability to understand pronunciation allows it to give correct results for misspelled searches.

Shazam: <https://laplacian.wordpress.com/2009/01/10/how-shazam-works/>  
<http://www.ee.columbia.edu/~dpwe/papers/Wang03-shazam.pdf>  
<https://blog.csdn.net/yutianzuijin/article/details/36929765>  
<https://blog.csdn.net/yutianzuijin/article/details/21547573>

How does Shazam work? Music Recognition Algorithms, Fingerprinting, and Processing:  
<https://www.toptal.com/algorithms/shazam-it-music-processing-fingerprinting-and-recognition>

**acoustic fingerprint:** [https://en.wikipedia.org/wiki/Acoustic\\_fingerprint](https://en.wikipedia.org/wiki/Acoustic_fingerprint)

Shazam vs. SoundHound: Battle of the Mobile Song ID Services:

<https://lifehacker.com/5757214/shazam-vs-soundhound-battle-of-the-mobile-song-id-services>

Academic Research Design:

Research design provides a base to your research problem. Here, you are testing a theory, to assess a program or understand an occurrence or a fact, which you have observed.

Most of the researchers begin to conduct their research far too early before they decide on the main concept/problem they are trying to achieve. All the design issues should be analyzed and corrected at a prior stage so that the conclusions drawn are strong and valid.

Here are the basic steps to keep in mind for [survey design](#) :

- Identify the research problem, explaining the reason of why it has been selected.
- Review and incorporate on the data you have collected for your research, which addresses the research problem,
- Setting up a hypothesis.
- Analyzing the data important for a sufficient testing of the hypotheses and explain the steps of data gathering
- Define the analysis of the hypotheses, which is proved to be true or false.
- Finally, review the literature of studies that has been used for the research design. This can help you in writing your conclusion.

突然想到report 里一个可以说的东西 就比如 shazam 和 soundhound的 detect 的结果会自动关联到 user 手机上的 apple music 或者 spotify 然后推荐给 user 的歌曲基本是根据 genre推荐的 或者是歌手 但并不见得喜欢听一首歌就是喜欢那个 genre 或者歌手 其实大部分还是因为对立面的一些 rhythm或者 melody 的 combination 有共鸣 所以对于 sound wave trace 这个方向 shazam 和 soundhound 可以对 wave trace 做个处理 提取出这些 combination 然后推荐给 user 歌曲 而不只是泛泛的推荐 genre 或 歌手的其他歌曲 ]

<https://en.wikipedia.org/wiki/SoundHound>  
<https://36kr.com/p/533527.html>