LEVEL 3 UNIT 7

# MORE APPS

Reading 1

## HOW DO MUSIC IDENTIFICATION APPS LIKE SHAZAM WORK?

Music identification apps seem like magic at first, but deep down there's a sophisticated algorithm that can find songs in an instant. It has probably happened to all of us. You are at a restaurant, hanging out at a coffee shop, or walking around in a store, when you suddenly hear a great song. So, you take your phone, open Shazam, and hold up your device to the ceiling. **In just a flash**, the app tells you what song it is and who sings it. This kind of app is quick, accurate, and can identify even the most underground songs. Basically, an app like Shazam works by isolating the song out of a recording and searching it against an expansive database of tracks.

Music identification apps like Shazam may seem simple. You might think they just listen to the lyrics, the same as any voice assistant, and search it in a database of song lyrics to tell you what the song is. However, most music identification apps can tell what the title of an instrumental song is or even the singer of a cover song thanks to an exceptional algorithm. Instead of analyzing the lyrics of the track, the apps look for "fingerprints" that are unique to each song in their extensive databases. You probably have devices that can be unlocked using your fingerprint, which is the arrangement of the particular small lines on your finger. Similarly, when you hold up your microphone to record a clip of a song, this turns into patterns of data that Shazam or another app can look up in their database.

## Skills:

- Details
- Understand vocabulary in context

## Getting started:

What did you use to do to identify a song you heard and liked when apps like Shazam didn't exist?

Some would say this method could experience issues. Most of the time that you hear music in public, there's background noise and distortion caused by the speakers, which can make songs unidentifiable. Also, there's a lot of data captured in even a brief sound clip, which can lead to a slow process. To **fix** these issues, the information of an audio clip can be visualized with a 3D chart known as a spectrogram, which represents a change in frequencies over a period of time. It also considers amplitude, which is how loud a sound is. This is represented in a spectrogram using the intensity of color.

Instead of taking the whole song into account when performing a search, Shazam only takes in "peaks," which is the highest energy content within an audio clip. The features it captures consider the highest frequency points within a given time frame and then the peak amplitude spots **within** those frequencies. This method allows them to take out most of the unnecessary parts of an audio clip like background noise and to clear up distortion. It also makes the size of the patterns small enough that it takes mere milliseconds to identify a song among their vast database.


Apart from being helpful for listeners who hear songs they like, music identification apps also help shape the music world. When you identify a song with the app, you'll immediately see how many people have also tried to identify it. Thus, radio stations and streaming services often analyze what people are **Shazaming** the most to figure out what tracks are being listened to by the public. This is helpful because it indicates a song's catchiness and potential popularity.

**Since the rise of Shazam, a handful of competitors have also popped up**. **Soundhound** claims to be able to identify a song simply by you singing or humming to it, with mixed results. There's also a song identifier integrated with voice apps, such as Google Assistant, which works very similarly to Shazam's system.

*Adapted from https://www.howtogeek.com/659614/how-do-music-identification-apps-like-shazam-work/

## Answer the following questions:

**1. What is stated about Shazam in paragraph 1?**

a. You can use it to find the name of songs that aren't famous.
b. It's mostly used in restaurants and cafés.
c. It's an application that isn't precise.
d. You have to download a database to make the app work.

**2. In paragraph 1, what word can replace the phrase in just a flash?**

a. Now
b. Bright
c. Express
d. Immediately

**3. What is stated about music identification apps in paragraph 2?**

a. You activate the apps with your fingerprint.
b. The algorithm they use is unique.
c. They are very simple applications.
d. You must enter part of the lyrics to get the song.

**4. According to paragraph 3, what aspects are taken into account to identify a song?**

a. Patterns and information
b. Spectrogram and intensity
c. Frequencies and amplitude
d. Background and distortion

**5. The word fix in paragraph 3 can be replaced by**

a. decide
b. solve
c. focus
d. organize

**6. What is stated about Shazam in paragraph 4?**

a. It analyzes the complete song.
b. Shazam's database is quite modest.
c. It takes Shazam a long time to identify a song.
d. Shazam uses the most powerful parts of a song to detect it.

**7. The word within in paragraph 4 is closest in meaning to**

a. inside
b. before
c. behind
d. near

**8. The term Shazaming in paragraph 5 means**

a. listening to a song
b. downloading the app
c. making a song popular
d. looking for a word on Shazam

**9. What sentence summarizes the purple part in paragraph 6?**

a. Shazam owners have helped other developers to create new apps.
b. Pop music is the main genre people search for on Shazam.
c. The popularity of Shazam has caused similar apps to appear.
d. Other apps aren't good enough to compete against Shazam.


## What do you think?

**Do you use Shazam? Have you had a good experience using it?**