Audio and music manager

Introduction


```cpp
class Audio : public Module
{
public:
```

Main function: Load, play and switch game's audio. Can also manage audio effects.

```cpp
// Fade in music of a channel over 'ms' milliseconds, same semantics as the 'Play' functions */
extern DECLSPEC int SDLCALL Mix_FadeInMusic(Mix_Music *music, int loops, int ms);
extern DECLSPEC int SDLCALL Mix_FadeInMusicPos(Mix_Music *music, int loops, int ms, double position);
#define Mix_FadeInChannel(channel,chunk,loops,ms) Mix_FadeInChannelTimed(channel,chunk,loops,ms,-1)
extern DECLSPEC int SDLCALL Mix_FadeInChannelTimed(int channel, Mix_Chunk *chunk, int loops, int ms, in
```

```cpp
// Play a music file
bool Audio::PlayMusic(const char* path, float fadeInTime
{
    // Code logic...
    if(music != NULL) { ... }

    music = Mix_LoadMUS(path); // <-- Library function

    // More code logic...
    if(music == NULL) { ... }
    else { ... }
```

Music track switching

Music track switching

- Enumerator with the complete playlist

  - Contains all of the game's music tracks.

- A function to play the actual music track

  - Unloads and frees the previous music track after stopping it in case there was one playing before.
  - Loads the desired music track from file.
  - Plays the loaded music track.

- The actual function that switches between music tracks

  - Changes the state based on the enumerator.
  - Calls the function to play the selected music track.

Sound effects

Sound effects

Sound source:
From wich the audio is generated

Sound listener:
From wich the audio is listened
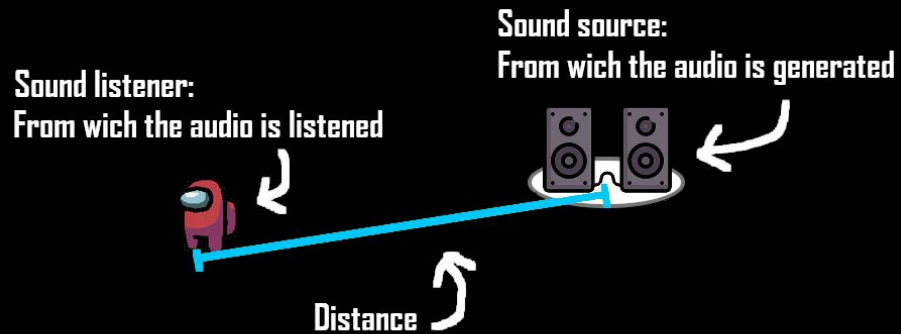
Distance

Sound effects

- Function to load sounds

    - Loads a sound from file and adds it to a list.

- Function to play them

    - Gets the source and player position and calculates the distance between them.
    - Sets the volume depending on the calculated distance.
    - Plays the selected sound at the volume set at the step before.

Playing spatial/diegetic music tracks

Playing spatial/diegetic music tracks

- Function that gets the source and the player position

    - Updates the volume depending the distance.
    - Is placed on the scene update.

Optional: The function can include some extra logic to switch it on or off depending on if you want to play the music track spatially or not.

Citations

Videos:

https://www.youtube.com/watch?v=hGn1mOgQF-s
https://www.youtube.com/watch?v=J7CvwcrrwVo
https://www.youtube.com/watch?v=hA55WshsKvg
https://www.youtube.com/watch?v=z9QHhpQQzck

Audio library used to make and explain the Audio and Music Manager:

https://www.libsdl.org/projects/SDL_mixer/

Template used for the module:

https://github.com/raysan5/game_project_template

Audio and music manager Repository

Handout repository:

https://github.com/mrmile/Audio_And_Music_Manager