

1 Background & Objectives

This section will provide some basic information on digital music in nowadays' world and the Android operating system to help understand the main problems of this project and my motives for creating an application for Android. I also included a list of primary and secondary objectives in my work, along with a short description, and explained both the application's input and output and how the success and limitations of my project will be evaluated.

1.1 Music Nowadays

Music has probably been present in the lives of humans since when they first became sentient, intelligent creatures in the prehistoric times. In our modern world most of people cannot even imagine existing without it – it inspires them, gives them strength in everyday's difficult situations, connects them with each other and, above all, allows them to express themselves and their emotions. It is safe to say that music is one of the things which make our unique, that without it we would never be the same ever again.

Nowadays, we tend to prefer our media in a digital format rather than a physical one – it is easier to take a USB stick with 10 films on it than to go with the hassle of the carrying 10 different DVDs. The most widely used format of digital music is the MP3 – its popularity started several years ago in times when portable music players had a very limited memory capacity, e.g. 64MB due to its good compressing capabilities. The problem, however, was that the MP3 compression entailed loss of quality.

Today, the memory size is slowly ceasing to be a problem as regular players tend to have it measured in gigabytes, therefore some prefer to revert to lossless formats of digital music. FLAC ("Free Lossless Audio Codec") is an example of such format; not only does it provide the same quality as an audio CD [1], but it is also able to compress files with rates of 50-60% of the original track's size. The problem is, however, that .flac files are still not supported by a large number of portable music players, though this will be changed by the increasing popularity of Android devices.

1.2 The Android OS – background

Android is one of the most popular operating systems for mobile devices at the moment. It is based on the Linux operating system which means its core is written in C, but it also contains elements of C++ and Java [2]. Although it is now developed by the Open Handset Alliance led by Google. It was started by Android Inc. in Palo Alto, California, in the United States in October 2003, but the company was acquired by Google in August 2005 [3] and made its subsidiary with key employees staying to work there even after the acquisition. There was continuous speculation on Google's plans concerning entering the mobile phone market until the Open Handset Alliance – a consortium of Google and such firms as Intel, Qualcomm, LG, HTC, Motorola, T-Mobile – unveiled itself on November 5th, 2007 along with its first product: the Android operating system.

Up until now, several versions of Android have been released with the recent one being 4.x Ice Cream Sandwich. It is worth to clearly indicate that Android 3.x Honeycomb is only used for tablets, not for smartphones or any other devices. The most popular version, as can be seen in Figure 1, at the moment is the 2.x Gingerbread – used on a manifold devices, not only smartphones or tablets, but also for example TV boxes [4].