

## Povzetek

Zvok lahko zapišemo na več načinov. Najprej je predstavljenih nekaj sistemov opisa zvoka, nato pa še zapisa zvoka (analogni in digitalni) za reproduciranje zvoka na različnih napravah, ki so tudi opisane. Pri shranjevanju in reprodukciji je pomembno tudi to, kako določeno zvočno informacijo posredujemo po določenih medijih in koliko informacije posredujemo. Zato sem se dotaknila tudi teorije informacije. Sicer pa v delu dobimo vpogled, na kakšne načine se da razne matematične postopke in teorije uporabiti za skladanje melodij. Spoznamo razne algoritme skladanja, od manj zahtevnih, kjer potrebujemo le papir in svinčnik, do takih, kjer za skladanje potrebujemo računalnik.

## Abstract

In this work two ways of recording the sound are introduced: analog and digital and corresponding devices for reproducing the sound are presented. We also learn how we can describe sound with some other systems. Information is very important in reproduction of the sound, so we have to know how much information can we send through a medium. We continue with a review of mathematical procedures and theories which can be used for composing melodies. We learn about different algorithms of composing. For some of them we need only a paper and a pencil, others are more complicated and we need a computer.

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**Ključne besede:** zapis zvoka, analogni, digitalni, notni zapis, avtomatofoni, glasbena skrinjica, MIDI, fonograf, gramofon, magnetofon, kasetofon, zgoščenska (CD), DVD, DAT, MD, teorija informacije, entropija, algoritmi, geometrija, frizne grupe, transformacije, kanon, magični kvadrati, latinski kvadrati, fraktali, kaos, celični avtomati, statistika, markovske verige, CAMUS, igra življenja, Demon Cyclic Space, digitalizacija, skladanje melodij, Wolfram Tunes

**Keywords:** sound recording, analog, digital sound, musical notation, avtomatophone, music box, MIDI, phonograph, gramophone, tape recorder, CD, DAT, MD, information theory, entropy, algorithms, geometry, transformation, canon, magic square, latin square, fractals, chaos, cellular automaton, statistic, Markov chains, CAMUS, Game of life, Demon Cyclic Space, digitizing sound, composing melody, Wolfram Tunes

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