

Business Case

- We need to prepare a team project connected with our field of studies in order to pass the course Team and Preengineering project taught by Mgr. Inż Jakub Klikowski
 - The idea of the project is provided by the Dolby Company with which we work on this project
 - It will equip us and help expand the knowledge about digital signal processing and programming skills
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- The product may replace manual coding repeated for each project and create ready-to-implement solution
 - The project is requested by Dolby company, thus we will implement our solutions to the base program provided by the company
 - We will use and expand our knowledge acquired in the university and private projects in the field of programming in Python and DSP

Project Objectives

- Create the audio effects library which allows the user to apply a selected effect at the input audio file and generate it as an output.
- It needs to be able to read input file and create an output file
- It needs to be intuitive for the users
- It will be implemented in Python language, version 3.6
- The management of the project will be performed with the use of Kanban board
- The project will be expanding an exemplary solution provided by Dolby - it will implement audio effect processing to the existing basic application
- Implemented effects will include time-domain processing (delay, FIR filters etc.) and frequency-domain processing (FIR filter, band equalizer etc.). It is expected to provide only a few filters of a type.
- The base application will be connected with audio effects functions in order to create complete signal path.
- No database will be created during this project. Input and output files will be read from and saved to predefined directory on local drive.

Major Deliverables

- Implementation of the ability to add time-domain effects
 - Functions for each of chosen filters (delay, FIR etc.)
- Implementation of the ability to add frequency-domain effects
 - Functions for each of chosen filters (FIR, band equalizer etc.)
- Complete signal path for audio processing
 - Functionality of reading input file and saving the output file
 - Calling the appropriate function to add audio effect chosen by the user to the input file and return it as an output file
 - Adding user interface of the program
- Program tested and potential bugs eliminated
 - Tests defined
 - Tests executed
 - Potential bugs and crashes solved

Roles & Responsibilities

- Project manager - Kacper Harężga
 - responsible for contacting main stakeholders (Dolby and Mgr. Inż. Jakub Klikowski) to discuss details of the project and ask for feedback
- The management team - Kacper Harężga and Ewa Kobiela
 - responsible for dividing tasks and creating documentation of this project
- The project team consists of five students (Kacper Harężga, Ewa Kobiela, Jan Laskowski, Krzysztof Sobczyk and Grzegorz Machura) who will implement the solution and test created versions of the project
 - Each member of project team will be responsible for creating a filter implementing a specific audio effect
 - Members will share the results with the team and stakeholders
 - In the second part of implementation the solution members will create the full signal path and test the application

Stakeholders

- The first primary stakeholder is Mgr. Inż. Jakub Klikowski, who runs the course Team and Preengineering Project and grades the project at the end of the semester
- The second primary stakeholder is Dolby Company with the representative of Paweł Jaroch, which requested the project at the Team Project Conference
- Secondary stakeholders include students in our group of Team and Preengineering Project course, who will be concerned about the results

Assumptions

- Project should be finished by the end of the semester, including development process, testing stage and documentation writing
- We do not expect to bear any money cost