ABSTRACT

INTRODUCTION

The title of our project is MUSICAL NOTE RECOGNISER.

The idea is to generate musical notes for a given song.These notes can be very useful to musicians for playing the song on any instrument or sing it without errors.

MOTIVATION

For every given song , the notes for every part of the song are unique.So we can assign the task of recognising the notes of the song to computers (as it is not a creative task).

PROBLEM STATEMENT

Input: A song or a instrumental tune.

Output: The musical notes for every bit of the song.

APPROACH

Input the song using a good microphone.

Divide the song into very small time intervals(bits) .

Use microphone data of the recorded sound track to process the song.

Remove unwanted noise and consider the part of audio which corresponds to the pitch of the notes and using that find the frequency of that part. since each frequency is uniquely associated with a note, So by simple math we can find a note for a given frequency

Then print the corresponding notes from the collection of notes stored in the memory.

.

Repeat the process for every bit and finally output notes in required format(piano,guitar etc).

MUSICAL NOTES in this context means the basic ones like Sa Re Ga Ma … or Do Re Fa…etc.
In future this can be extended for complex piano or guitar notes like grand staffs,etc.

NOTE: It would be good if some voice processing workshops can be arranged.

IMPLEMENTATION :-We try to make the application run on windows and Ubuntu systems

TOOLS AND SOFTWARES TO BE USED:-

1)Audio format converter

2)voice processing softwares

We don't have a indepth knowledge of voice processing softwares and the algorithms used.
But,after reading about a few of them we decided to make a start with MATLAB Audio prossesing software and CMU Sphinx.

We will learn further softwares from open source websites and use as per requirement.

TIMELINE

WEEK 1::
1) Discuss the project overview.
2) Install required softwares.
3) Discuss implementation details.
4) Divide the work among team members.

WEEK 2::
level1
4) Learning the usage of MATLAB and CMU Sphinx.
5) Work with handling of audio files(different formats etc).

Week 3::
Level2:
6) Remove the disturbances.
7) Extract required part of the audio file.
8) Work on breaking a audio track into small pieces so that each piece can be used
to produce a note.

WEEK 4::
       Level3:
       9) Create user interface
       10) output the result.
WEEK 5::
       11) Buffer week

<u>TEAM MEMBERS</u>

1) VISHAL BABU BHAVANI
ROLL NO 140050049
Email id vishal16babu@gmail.com
phone no.9967072069

2) Y.PUSHYARAG
ROLL NO 140050047
Email id: pushyarag@gmail.com
phone : 7738734438

3) MANITEJAREDDY VUPPULA
ROLL NO 140050079
Email id: teja3536mani@gmail.com
phone : 7738693231

4) DIVYA SOMASI
ROLL NO. 140040093
Email id divyasomasi@gmail.com
Phone : 9167848093