It’s Musical

Minor Project

IBM Career Education

Disclaimer

This Software Requirements Specification document is a guideline. The document details all the high level requirements. The document also describes the broad scope of the project. While developing the solution if the developer has a valid point to add more details being within the scope specified then it can be accommodated after consultation with IBM designated Mentor.

INTRODUCTION

The purpose of this document is to define scope and requirements of an interesting utility for users with an interest in Music called “It’s Music”. The proposed software, as the name suggests, will promptly respond to users query for checking if a name entered is a valid musical instrument, if yes, it returns some useful information about the instrument.

This document is the primary input to the development team to architect the solution for this project.

System Users

The users of the application are students in an educational institute, who are keen to use various innovative aids to learn about a subject of their interest.

About It’s Musical

It’s Musical is an application that integrates with Wolfram Alfa, a computational knowledge engine to fetch information about the Musical Instruments and present to the user in a simple and easy to understand format. It works as follows:

1. The user enters the Text in the Search Box.
2. Application detects if it’s a musical instrument, then fetches and presents information about the Instrument. It will generate details like complete technical description of the “queried” instruments using Hornbostel-Sachs classification, image, and sample sound.
3. If the Text entered is not a Musical instrument, a message is displayed like ‘No such musical instrument found’

This application can be developed in Java and using Wolfram Alpha API and Hornbostel Sachs Classification for musical instruments.

About Wolfram Alpha

Wolfram Alpha is an answer engine that works on proprietary knowledge sources for responding to queries on various subjects in a easy to comprehend manner. It uses natural language to respond to Questions on various subjects like computer algebra, symbolic and numerical computation, visualization, and statistics capabilities. The most appealing aspect of the response is its presentation of curated content. Unlike most of the search engines, displaying links to web pages.

About Hornbostel Sachs

Hornbostel–Sachs (or Sachs–Hornbostel) is a system of musical instrument classification devised by Erich Moritz von Hornbostel and Curt Sachs, and first published in the Zeitschrift für Ethnologie in 1914.[1] An English translation was published in the Galpin Society Journal in 1961. It is the most widely used system for classifying musical instruments by ethnomusicologists and organologists (people

who study musical instruments). Hornbostel and Sachs based their ideas on a system devised in the late 19th century by Victor-Charles Mahillon, the curator of musical instruments at Brussels Conservatory. Mahillon divided instruments into four broad categories according to the nature of the sound-producing material: air column; string; membrane; and the body of the instrument. However, these categories were not new; they derive from the Natya Sastra, a roughly two-thousand-year-old Indian theoretical treatise on music and dramaturgy. Mahillon limited his system, for the most part, to instruments used in European classical music. From this basis, Hornbostel and Sachs expanded Mahillon's system to make it possible to classify any instrument from any culture. Formally, the Sachs–Hornbostel is modeled on the Dewey Decimal Classification for libraries. It has four top-level classifications, with several levels below those, adding up to over 300 basic categories in all. *(Source: Wikipedia Entry)*

Classification

For interpreting the results of key characteristics of musical instruments being searched, a master is maintained which will capture the Classification Code, Description, Image and Sound.

Enter Text to Search

On launch of application, a text search box is displayed with GO button. On click of GO, a string “Musical Instrument” is added with a space at the end of search text. This new concatenated string is processed using Wolfram Alpha API.

Display Answer

The application analyses by processing the xml received from API Call for the input received as a search string. The possible outcomes of this analysis could be a valid Musical instrument or not a valid one. The user gets to view the appropriate response as follows:

1. The text entered is not a valid instrument. If so, the user gets to see an Answer such as Content of “Search Text Entered” is not listed in database as a valid musical instrument. E.g. if user had entered ‘Apple’, the answer would be displayed as ‘Apple’ is not listed in database as a valid musical instrument, you may try another name.’

2. In case of a valid instrument, The application displays the Image of instrument, Plays a sound of the instrument and presents a description of the instrument using the Hornbostel and Sachs classification for the Musical instrument name entered by the user.

REQUIREMENTS

As a first step, understand the musical instrument classification as per Hornbostel-Sachs classification. Use this resource to set up a master for Musical Instrument Classifications. After this decide in which order will the text about the instrument be displayed. e.g. Its shape, sound, genre or it will be genre, shape and sound. Refer

to the following links to get the necessary inputs.

Wolfram Alpha : http://products.wolframalpha.com/api/explorer.html

Hornbostel-Sachs: http://en.wikipedia.org/wiki/Hornbostel–Sachs

DEVELOPMENT ENVIRONMENT

"It's Musical" will be developed in Java using Eclipse along with Wolfram alpha API.