

# Music Recommendation Agent

Applied Artificial Intelligence - CS514

## Project 1

Submitted by,

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## Abstract:

Mu Zik is a music recommendation agent built using JESS. This suggests the user various songs and albums based on the users' interests. It is an application of AI which uses rule-based logic system to suggest new music for the user. This agent can suggest new songs for the user to try out and also from different decades to explore more songs. The user can pick from different genres and can also opt to continue to listen to the entire album if they like the recommended songs. This rule-based agent makes it easier for the user to try out new songs from different genres.

## Features:

- The music recommendation agent takes in the necessary inputs from the user and based on the logical conditions defined, respective rules will be fired.
- For simplicity, also since this is a prototype, three genres and four decades are defined.
- The different genres include HipHop, Instrumental and Metal which covers a wide range of songs.
- The album type is also taken as a feature since the taste in music also depends on this. The user might want to try a different version of the song and opt for cover option or just continue to listen to the entire album.
- Next feature that this system considers is the decades. The user can choose from four decades namely 80s, 90s, 2000s and latest.
- The best part of the system is that the user does not have to spend time on searching for new songs from different genres.

## Rules and description:

### Deftemplate:

- `user`: This template takes the user data. The user inputs are all defined here. These inputs include the genre, album type and the decade

### Deffunction:

- `checking-in`: A simple function just to check whether the user is ready to share his or her details. If the person agrees then the print-banner rule is fired, and the rest of the inputs is read.
- `is-type`: This function helps the music agent to validate the response given by the user, does it match with the conditions defined in the rules else the questions are asked again until the user replies correctly.
- `ask-user`: Function to ask the user with the proper question and read bind the user data.

### Defrule:

- `request-USERDATA`: These are the set of rules which are fired randomly, and this will initiate the system to ask the respective question with the user. Some of these rules include `request-album_type`, `request-tf`, `request-genres`.
- `Genre-Album_type-Decade`: So, for each genre, album\_type and decade, the user selects a rule, that will be fired. For each state with respect to the genre selected a rule is fired. This has been carefully designed based on the user's interests based on the genre and decade. Thus, the fired rule will suggest the song or the album accordingly.
- For example, (`defrule HipHop-80s-Single`) this rule is fired once the user selects genre as HipHop, decade as 80s for January and for the single selection. This rule recommends the song according to the user's input preference.

## Instructions to run:

- ➔ Copy file MuZik.clp to the bin folder of jess directory
- ➔ Run the file by clicking on the run option in JESS, OR
- ➔ Open JESS and execute the following command.

***jess MuZik.clp***

## Sample runs:

```
Jess, the Rule Engine for the Java Platform  
Copyright (C) 2008 Sandia Corporation  
Jess Version 7.1p2 11/5/2008
```

```
This copy of Jess will expire in 29 day(s).
```

```
Hey, I my name is Mu Zik and I will help you discover new songs based on your interests.  
Would you like to experiment with new music? Y/N
```

```
Y
```

```
Awesome!Let's get to know you more. What is your name?
```

```
Bill
```

```
Hello, Bill
```

```
What type of an album would you prefer?
```

```
Single or Album or Remix or Cover
```

```
Single
```

```
What genre of music do you feel like listening to?
```

```
HipHop or Instrumental or Metal HipHop
```

```
Which generation music do you prefer?
```

```
80s, 90s, 2000s, latest latest
```

```
Here's your song recommendation:
```

```
Song: Congratulations
```

```
Artist: Post Malone
```

```
Enjoy your song! Hope you liked the music suggested by Mu Zik
```

*Figure 1: Sample Run 1*

```
Jess, the Rule Engine for the Java Platform
Copyright (C) 2008 Sandia Corporation
Jess Version 7.1p2 11/5/2008
```

```
This copy of Jess will expire in 29 day(s).
```

```
Hey, I my name is Mu Zik and I will help you discover new songs based on your interests.
Would you like to experiment with new music? Y/N
```

```
Y
```

```
Awesome!Let's get to know you more. What is your name?
```

```
Jim
```

```
Hello, Jim
```

```
What type of an album would you prefer?
```

```
Single or Album or Remix or Cover
```

```
Cover
```

```
What genre of music do you feel like listening to?
```

```
HipHop or Instrumental or Metal Metal
```

```
Which generation music do you prefer?
```

```
80s, 90s, 2000s, latest 90s
```

```
Here's your song recommendation:
```

```
Song: Leviathan
```

```
Artist: Mastodon
```

```
Enjoy your song! Hope you liked the music suggested by Mu Zik
```

*Figure 2: Sample Run 2*

## Test Cases:

### Test 1:

Name: Jill

Genre: HipHop

Decade: Latest

Album Type: Album

### Output 1:

Here's your song recommendation:

Song: My dear melocholy

Artist: The Weeknd

Enjoy your song! Hope you liked the music suggested by Mu Zik

### Test 2:

Name: Jack

Genre: Instrumental

Decade: 2000s

Album Type: Cover

### Output 2:

Here's your song recommendation:

Song: Tortoise

Artist: Djed

Enjoy your song! Hope you liked the music suggested by Mu Zik