

# GVSU Marching Band Database

Ron Foreman, Rob Sanchez, Victor Sun, Justin Wickenheiser

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## **Nature of Application**

Our team proposes an application that is used to plan and create marching shows for the different seasons for Grand Valley State University's Laker Marching Band. The application will be used to track students' involvement in different shows throughout the seasons along with their uniforms.

## **Student**

The system tracks Students that are in the school marching band. Students have a unique G#, name, and major. Every Student in the system is either a Marcher or a Drum Major.

## **Season**

The system tracks the different marching Seasons. Seasons have a unique term code and a description.

## **Show**

The system will track marching Shows. Shows have a title and a performance date. A Show belongs to a specific Season and a Season can have many shows. Not all Seasons have Shows planned for them yet.

## **Song**

There are also Songs that the system must track. Songs have a unique songID, a title, and one or more composers. The system must also track the song's tempo and the number of measures it has. For any given Show in a given Season, there are Songs that make up the Show. A Show can have many songs and a song can be in multiple shows. A Show has to have at least 1 Song in it, but not every Song has to be in a Show. The system must also track the order of the Songs in each Show. The system will only track songs that have a minimum tempo of 96 BPM and a minimum of 50 measures.

## **Marcher**

Marchers participate in shows. Since some Marchers might be busy during a show, not every Marcher participates in a given show. Additionally, there can be shows that are planned for future seasons, so not every show has Marchers participating in it. A Marcher can participate in several shows, and a show has one or more Marchers. The system needs to track what instrument a Marcher plays for a given show. A Marcher will only play one instrument per show. The instrument that a marcher can play must be one of the following: Piccolo, Clarinet, Alto Sax, Tenor Sax, Mellophone, Trumpet, Trombone, Baritone, Sousaphone, Percussion, Flag, or Twirler. A marcher must play

the same instrument for every show in a season.

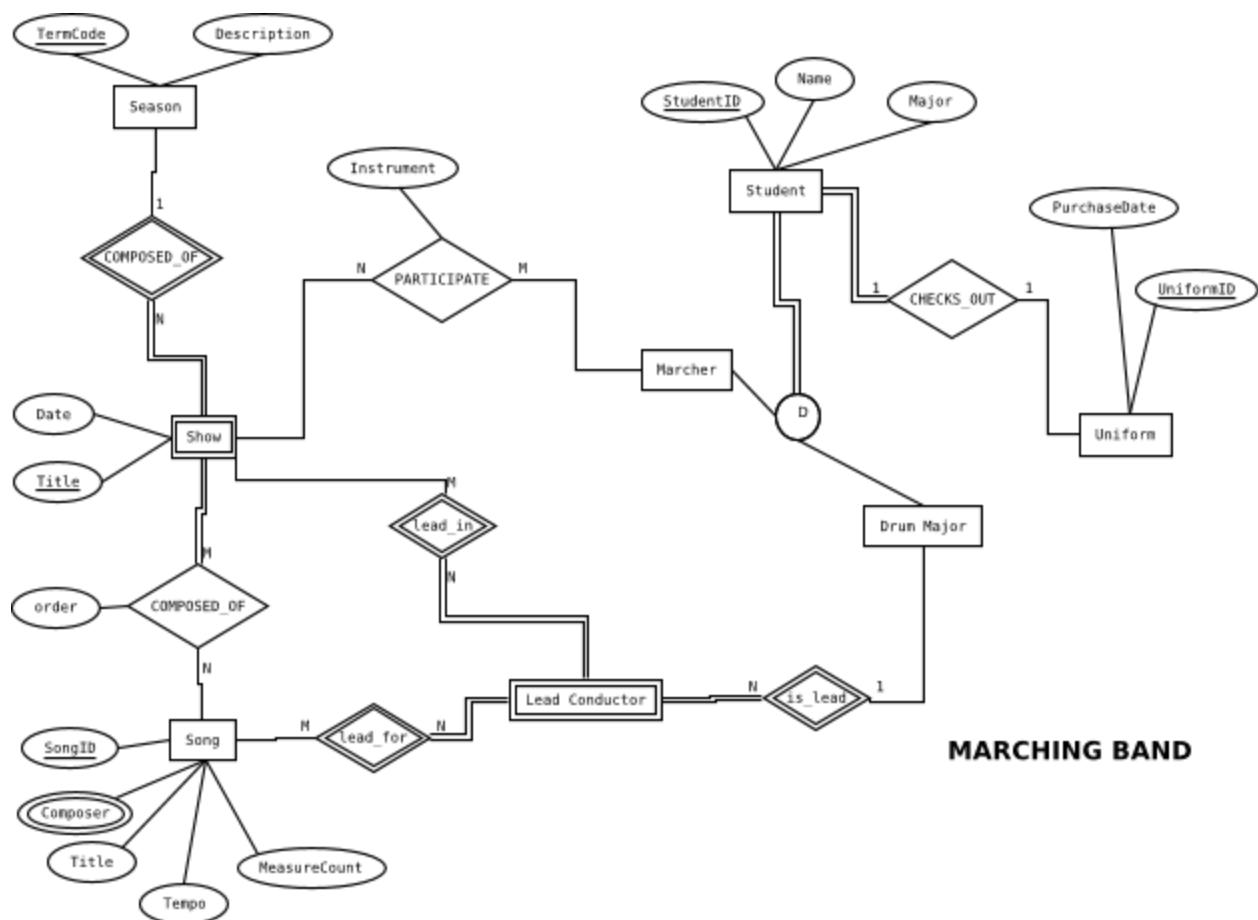
### **Drum Major/Lead Conductor**

Drum Majors are Lead Conductors for specific songs of any given show. A Drum Major can be Lead Conductor for several songs in a show. A song only has one Lead Conductor per show. Not every Drum Major has to be a Lead Conductor within a show. Every song within a show must have a Lead Conductor; however, since shows can be planned for future seasons, not every show will have Lead Conductors assigned to songs.

### **Uniform**

The system will track the Uniforms that are assigned to students. Uniforms are uniquely identified by their UniformID, and the system will track the date on which each uniform was purchased. Each Student checks out only one Uniform, and a Uniform can only be checked out by one student. Not every Uniform in the band's inventory is necessarily checked out.

### EER Diagram



## Basic Relational Schema (Alternative-2 from EER.ppt, slide #9, -RS)

### [ER-Consensus.dia]

Marcher(StudentID, Name, Major, UniformID)

Drum Major(StudentID, Name, Major, UniformID)

Season(TermCode, Description)

Song(SongID, Title, Composer, Tempo, MeasureCount)

Uniform(UniformID, PurchaseDate)

Show(TermCode, ShowTitle, Date)

Lead Conductor(TermCode, ShowTitle, SongID, DM\_ID)

Composer(SongID, Composer)

Participation(MarcherID, TermCode, Instrument)

Show\_Lineup(TermCode, ShowTitle, SongID, Order)

Lead\_In(TermCode, ShowTitle, DM\_ID)

Lead\_For(SongID, DM\_ID)

### [ER-Simplified.dia]

## Integrity Constraints

IC name & table(s)	IC type	English Statement
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	Key	Students have a unique G#.
	Foreign Key	Each Student checks out only one Uniform, and a Uniform can only be checked out by one student.
	1-attribute	The instrument that a marcher can play must be one of the following: Piccolo, Clarinet, Alto Sax, Tenor Sax, Mellophone, Trumpet, Trombone, Baritone, Sousaphone, Percussion, Flag, or Twirler.
	2-attribute, 1-row	The system will only track songs that have a minimum tempo of 96 BPM and a minimum of 50 measures.
	2-row	A marcher must play the same instrument for every show in a season.