Unit 7: Criteria and Feedback Rubric
Music and Machine Learning Final Project

Handout 2: Music and Machine Learning Final Project Overview ([view](), [copy]())

Process for Rubric
- Before beginning the project ask questions and clarify understanding of the criteria.
- After completing the project, comment on areas for growth and strength and provide evidence (such as quote, a link to the handout/visual, etc.). If this is both self and peer feedback, use two different colors.
- Once you or your peers have completed the feedback section, share this rubric with your instructor so they can provide their suggestions in the third column.
- Make revisions to your project based on feedback from your peers and instructor. Add comments in the self/peer assessment column in a *different color* so your instructor can see any changes made.
- When criteria has been met, your instructor will record a "yes" in the final column.
- Be sure to complete the reflection question at the end of the rubric. This will help you make sense of your learnings and will be built upon in later units.

Note: For group projects, fill this out as a group. For individual projects, complete this individually.

High Quality Work
- High quality work contains the following aspects:
  - Clearly communicates and justifies claims
  - Documents evidence of working through the data science process
  - Demonstrates thoughtful revision based on peer/instructor feedback

Feedback Note
- Feedback is one of the most well-proven learning tools because it gives you a new perspective on your work and shows you areas of strength and growth. Your peers and your teacher believe you are capable of high-quality work and considering their feedback can help you achieve that. In turn, you can help your peers with their learning by providing them actionable, kind feedback.

Topical Outline

Unit 7: Final Project

- Predictive modeling
- Machine learning
- Basic programming
- Linear Algebra
- Conditional Probability

Criteria	Self/Peer Assessment (Evidence and comments for growth and strength areas)	Instructor Assessment (Evidence and comments for growth and strength areas)	Criteria Met Y/N
Asking Questions			
Given in Assignment			
Gathering and Organizing Data			
Collected in Colabs			
Modeling			
Content-Based Filtering: Chooses level of complexity for model and explains how you decided on the level of complexity for your model Displays screenshot of the graph (or table), equation, and error for the one, two, and three-attribute content-based models Reports predicted rating for the one, two, and three-attribute model in content-based filtering (Predictive modeling & Machine learning)			

Collaborative Filtering: Describes and justifies a liking function for collaborative filtering Includes a screenshot of the code implementing the liking function Calculates conditional probabilities accurately and shares a screenshot of calculations and the 2x2 matrix representing the probabilities Inserts screenshot of probability (similarity) vector with the whole class Adds a screenshot of collaborative filtering results (Basic Programming & Conditional Probability)			
Analyzing and Synthesizing			
Content-Based Filtering: Describes what the points and functions represent for one, two and three-attribute models Explains how you can use the model to make predictions for one, two and three-attribute models			

Describes if the one, two, and three-attribute predictions were accurate and includes ways to improve the content-based model (Linear Algebra & Machine Learning) **Collaborative Filtering:** Describes how you can interpret the conditional probabilities you calculated for you and your partner Describes what the 2x2 probability matrix show and how they can be interpreted Explain what the probability (similarity) vector with the whole class reveals about your preferences and those of your classmates Includes an analysis of your recommender system Explains surprises from the results, new understandings, and how the model could be improved (Conditional Probability & Predictive Modeling)			
Communicating			

Defines machine learning based on readings, articles, videos, diagrams, and/or other resources (Machine Learning) Summarizes each filtering method with specific examples and/or visuals Communicates model(s) and analysis with visuals and clear explanations for the intended audience Creates a flowchart describing your content-based and collaborative filtering recommender systems, including inputs, outputs, and how each model works Shares reflections and take-aways about how the two filtering methods compare			
Ethical Considerations			
Expresses ideas that you feel are important for your audience to know about machine learning and why those ideas are important Incorporates specific action items for machine learning algorithms in daily life Supports analysis with quotes and evidence from the videos and articles on			

machine learning			

Reflection:

After doing this project, list what concepts you feel confident in understanding and what still feels tricky or unclear.