Computer Science Capstone Topic Approval Form

The purpose of this document is to help you clearly explain your capstone topic, project scope, and timeline. Identify each of these areas so that you will have a complete and realistic overview of your project. Your course instructor cannot sign off on your project topic without this information.

Note: You must fill out and submit this form. Space beneath each number will expand as needed.

Any cost associated with developing the application will be the responsibility of the student.

INFORM INSTRUCTOR:

Potential use of proprietary company information: (Y/N): **N**

Potential use of human subjects: (Y/N): **N**

ANALYSIS:

Project topic AND description: iStream Music Inc. (fictious company) needs a tool to recommend music albums to existing users to increase sales. This project will create a data product for recommended music genres for users based on age and gender.

Project purpose/goals: Provide an analysis tool to iStream Music Inc. (fictious company) that they can use to boost music sales.

1. Descriptive method(s): A decision tree will be used as a descriptive method to visually represent and describe the decision made for our learning model, providing clear detail on how the music genres are recommended based on the users profile.

2. Non-descriptive method(s): A machine learning model will be developed to learn patterns in our data so predictions can be made based on current data to recommend music genres from a users profile. The model will predict which genre to recommend by utilizing a decision tree algorithm.

DESIGN and DEVELOPMENT:

1. Computer science application type (select one):
   - Mobile (indicate Apple or Android)
   - Web
   - **Stand-Alone**

2. Programming/development language(s) you will use: **Python programming language will be used and libraries such as Numpy, Pandas, MatPlotLib, and Scikit-Learn. I will also be using Jupyter for writing the code, this is ideal for ML projects.**

3. Operating System(s)/Platform(s) you will use: **MacOS**

4. Database Management System you will use: **N/A**

5. Estimated number of hours for the following:
   i. Planning and Design: **80**
   ii. Development: **80**
   iii. Documentation: **80**
   iv. Total: **240**

6. Projected completion date: **November 16, 2023**

IMPLEMENTATION and EVALUATION:

1. Describe how you will approach the execution of your project:
    a. **Import the data and ensure it meets requirements**
    b. **Clean the data**
    c. **Separate the data into training sets**
    d. **Create and train the model**
    e. **Make predictions**
    f. **Evaluate and improve**

STUDENT SIGNATURE

___Jacob Sanchez_____

By signing and submitting this form, you acknowledge any cost associated with development and execution of the application will be your (the student) responsibility.

COURSE INSTRUCTOR'S NAME:

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COURSE INSTRUCTOR APPROVAL DATE: 11/7/2023