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 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.

Note: Any costs associated with developing the application will be the responsibility of the student.

INFORM INSTRUCTOR:

Potential use of proprietary company information: (No)

ANALYSIS:

1. Project topic and description: Hotel Recommendation System- A machine learning application that helps travelers find hotels matching their preferences and budget by clustering similar hotels and providing personalized recommendations.

2. Project purpose and goals: The purpose and goals of my project are to help match a traveler to a hotel that is recommended based on their travel budget and preferences using a clustering algorithm and predictive modeling.

3. Descriptive method: Use clustering algorithms to group similar hotels.

4. Predictive or prescriptive method: Use decision trees or Naive Bayes classifications to predict which hotel cluster best matches a user's stated preference, then recommend hotels from that cluster.

DESIGN and DEVELOPMENT:

1. Computer science application type (select one): Web

2. Programming/development language(s) you will use: Python (pandas, scikit-learn, matplotlib)

3. Operating system(s) or platform(s) you will use: Windows

4. Database Management System you will use: CSV files (excel)

5. Estimated number of hours for the following:
    i. Planning and design: 10 hours
    ii. Development: 20 hours
    iii. Documentation:15 hours
    iv. Total:45 hours

6. Projected completion date: 10/12/2025

IMPLEMENTATION and EVALUATION:

1. Describe how you will approach the execution of your project.

    I will approach this project by executing the following steps:

    - Load and prepare Hotels Features Dataset from Kaggle
    - Preprocess data and select features for clustering
    - Apply clustering to group similar hotels
    - Develop a decision tree to match user preferences to clusters
    - Create a Python application that takes user input and returns hotel recommendations
    - Evaluate model accuracy and create required visualizations

☒This project does not involve human subjects research and is exempt from WGU IRB review.

STUDENT'S SIGNATURE

__Kaylin McCoy_____

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

Charles Paddock

INSTRUCTOR'S SIGNATURE:

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INSTRUCTOR APPROVAL DATE:9/27/2025